

# 12<sup>th</sup> Chemistry

## Full book solved MCQs

### Objective Type

#### 1. Encircle the Correct Option.

1. درست جواب کے گرد دائرہ لگائیں۔

1) Preparation of vegetable ghee involves

|                 |                  |                   |                    |
|-----------------|------------------|-------------------|--------------------|
| a) Halogenation | b) Hydroxylation | ✓c) Hydrogenation | d) Dehydrogenation |
|-----------------|------------------|-------------------|--------------------|

2) General name of mineral  $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$  IS :

|           |             |            |                |
|-----------|-------------|------------|----------------|
| a) Gypson | b) Dolomite | c) Calcite | ✓d) Epsom salt |
|-----------|-------------|------------|----------------|

3) The resonance energy of benzene is .

|                        |                          |                 |                   |
|------------------------|--------------------------|-----------------|-------------------|
| a) 150.5 calories/mole | b) 150.5 k calories/mole | c) 150.5 g/mole | ✓d) 150.5 kJ/mole |
|------------------------|--------------------------|-----------------|-------------------|

4) Which elements has lowest melting point ?

|              |               |            |           |
|--------------|---------------|------------|-----------|
| a) Beryllium | ✓b) Magnesium | c) Calcium | d) Barium |
|--------------|---------------|------------|-----------|

5) Carbon atom in which of the following is  $\text{sp}^2$  - hybridized

|                           |                                 |                    |                             |
|---------------------------|---------------------------------|--------------------|-----------------------------|
| a) $\text{CH}_3\text{CN}$ | b) $\text{CH} \equiv \text{CH}$ | ✓c) $\text{HCOOH}$ | d) $\text{CH}_2\text{Cl}_2$ |
|---------------------------|---------------------------------|--------------------|-----------------------------|

6) Elements of group IB are called .

|                            |                |                        |                    |
|----------------------------|----------------|------------------------|--------------------|
| a) Representative elements | b) Rare earths | c) Transition elements | ✓d) Coinage metals |
|----------------------------|----------------|------------------------|--------------------|

7) The lowest ionization energy is possessed by.

|      |      |        |       |
|------|------|--------|-------|
| a) P | b) N | ✓c) Sb | d) As |
|------|------|--------|-------|

8) A heterocyclic compound with molecular formula  $\text{C}_4\text{H}_4\text{S}$  .

|             |          |            |               |
|-------------|----------|------------|---------------|
| a) Pyridine | b) Furan | c) Pyrrole | ✓d) Thiophene |
|-------------|----------|------------|---------------|

9) Vegetable oils are.

|               |   |                   |                |
|---------------|---|-------------------|----------------|
| a) Polyesters | ✓b) Glycerides of unsaturated fatty acids | c) Essential oils | d) Fatty acids |
|---------------|---|-------------------|----------------|

10) Fermentation of glucose to ethyl alcohol can be carried out by.

|            |              |            |             |
|------------|--------------|------------|-------------|
| ✓a) Zymase | b) Invertase | c) Lactase | d) Diastase |
|------------|--------------|------------|-------------|

11) The rate of  $\text{E1}$  reaction depends upon:



|                                    |                                     |  |                      |
|------------------------------------|-------------------------------------|--|----------------------|
| ✓a) The concentration of substrate | b) The concentration of nucleophile | c) The concentration of substrate as well as nucleophile | d) None of the above |
|------------------------------------|-------------------------------------|--|----------------------|

12) A polymeric substance that is formed in the liquid state and then hardened to a rigid solid is called a.

|          |             |            |                    |
|----------|-------------|------------|--------------------|
| a) Fibre | ✓b) Plastic | c) Varnish | d) Polyamide resin |
|----------|-------------|------------|--------------------|

13) How many zones through which the charge passes in a rotary kiln?

|       |      |      |      |
|-------|------|------|------|
| ✓a) 4 | b) 3 | c) 2 | d) 5 |
|-------|------|------|------|

14) The flavor of octylacetate is .

|            |            |           |            |
|------------|------------|-----------|------------|
| ✓a) Orange | b) Apricot | c) Banana | d) Jasmine |
|------------|------------|-----------|------------|

15) Which element among the following belongs to group IV-A of the Periodic table ?

|           |           |          |           |
|-----------|-----------|----------|-----------|
| a) Barium | b) Iodine | ✓c) Lead | d) Oxygen |
|-----------|-----------|----------|-----------|

16) Among the aliphatic carboxylic acid the first four members are soluble in water due to .

|                     |                              |                  |                      |
|---------------------|------------------------------|------------------|----------------------|
| a) Hydrogen bonding | ✓b) London dispersion forces | c) Covalent bond | d) Ion-dipole forces |
|---------------------|------------------------------|------------------|----------------------|

17) Which of the following is not heterocyclic compound ?

|              |          |                |            |
|--------------|----------|----------------|------------|
| a) Thiophene | b) Furan | ✓c) Anthracene | d) Pyrrole |
|--------------|----------|----------------|------------|

18) Formula of marsh gas is.

|                     |                                  |                                  |                                   |
|---------------------|----------------------------------|----------------------------------|-----------------------------------|
| ✓a) CH <sub>4</sub> | b) C <sub>2</sub> H <sub>6</sub> | c) C <sub>3</sub> H <sub>6</sub> | d) C <sub>4</sub> H <sub>10</sub> |
|---------------------|----------------------------------|----------------------------------|-----------------------------------|

19) The hydrocarbon having octane number 100 is .

|                 |               |               |                  |
|-----------------|---------------|---------------|------------------|
| a) Neo - octane | b) n - hexane | c) Neopentane | ✓d) Iso - octane |
|-----------------|---------------|---------------|------------------|

20) Slight oxidation of primary alcohol gives .

|           |                  |             |             |
|-----------|------------------|-------------|-------------|
| a) Ketone | ✓b) Organic acid | c) Aldehyde | d) An ester |
|-----------|------------------|-------------|-------------|

21) At 18<sup>0</sup>C the specific gravity of H<sub>2</sub>SO<sub>4</sub> is .

|          |           |          |          |
|----------|-----------|----------|----------|
| a) 1.891 | ✓b) 1.834 | c) 2.101 | d) 1.740 |
|----------|-----------|----------|----------|

22) The isomerism shown by alkanes is

|              |             |              |               |
|--------------|-------------|--------------|---------------|
| ✓a) Skeletal | b) Position | c) Geometric | d) Metamerism |
|--------------|-------------|--------------|---------------|

23) S<sub>N</sub>2 reactions can be best carried out with:

|                           |                           |                            |                  |
|---------------------------|---------------------------|----------------------------|------------------|
| ✓a) Primary alkyl halides | b) Tertiary alkyl halides | c) Secondary alkyl halides | d) All the three |
|---------------------------|---------------------------|----------------------------|------------------|

24) Among group V-A elements, the most electronegative element is

|       |       |      |       |
|-------|-------|------|-------|
| a) Sb | ✓b) N | c) P | d) As |
|-------|-------|------|-------|

25) Number of elements in the first period of the periodic table is .

|       |      |       |       |
|-------|------|-------|-------|
| ✓a) 2 | b) 8 | c) 14 | d) 18 |
|-------|------|-------|-------|



26) Phenol reacts with Acetyl Chloride in the presence of a base to form the product .

|         |            |           |             |
|---------|------------|-----------|-------------|
| a) Acid | b) Alcohol | ✓c) Ester | d) Aldehyde |
|---------|------------|-----------|-------------|

27) The most metallic element from the following is.

|            |           |             |             |
|------------|-----------|-------------|-------------|
| a) Arsenic | b) Oxygen | c) Antimony | ✓d) Bismuth |
|------------|-----------|-------------|-------------|

28) Pictic Acid is obtained by nitration of .

|            |            |            |                 |
|------------|------------|------------|-----------------|
| ✓a) Phenol | b) Benzene | c) Aniline | d) Nitrobenzene |
|------------|------------|------------|-----------------|

29) Melting points of halogens \_\_\_\_\_ the group .

|                  |                               |                   |                                      |
|------------------|-------------------------------|-------------------|--------------------------------------|
| a) Decrease down | b) Remain the same throughout | ✓c) Increase down | d) First increase then decrease down |
|------------------|-------------------------------|-------------------|--------------------------------------|

30) The presence of a double bond in a compound is the sign of.

|               |                   |                 |                  |
|---------------|-------------------|-----------------|------------------|
| a) Saturation | ✓b) Un-saturation | c) Substitution | d) None of these |
|---------------|-------------------|-----------------|------------------|

31) Aromatic hydro carbon contain \_\_\_\_\_ benzene ring called Mono cyclic Aromatic hydrocarbons .

|       |      |      |      |
|-------|------|------|------|
| ✓a) 1 | b) 2 | c) 4 | d) 3 |
|-------|------|------|------|

32) Metallic luster exhibited by Na is explained by .

|                        |                               |                                    |   |
|------------------------|-------------------------------|------------------------------------|---|
| a) Diffusion of sodium | b) Excitation of free protons | ✓c) Oscillation of loose electrons | d) Existence of body centered cubic lattice |
|------------------------|-------------------------------|------------------------------------|---|

33) Which statement is correct ?

|   |  |  |   |
|---|--|--|---|
| ✓a) Hydrogen resembles in properties with I-A , IV-A and VII-A elements | b) Hydrogen resembles in properties with III-A , IV-A and V-A elements | c) Hydrogen resembles in properties with II-A , IV-A and VI-A elements | d) Hydrogen resembles in properties with II-A , III-A and VIII-A elements |
|---|--|--|---|

34) The chief ore of aluminum is.

|                              |   |                            |   |
|------------------------------|---|----------------------------|---|
| a) $\text{Na}_3\text{AlF}_6$ | ✓b) $\text{Al}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$ | c) $\text{Al}_2\text{O}_3$ | d) $\text{Al}_2\text{O}_3 \cdot \text{H}_2\text{O}$ |
|------------------------------|---|----------------------------|---|

35) The sixth period of periodic table consists of 32 elements which are .

|  |  |  |  |
|--|--|--|--|
| a) Two s - block , six p - block and twenty four d - block elements. | ✓b) Eight normal , ten d - block and 14 f block elements | c) Eight normal , ten transition and ten inner transition elements | d) Eight normal & twenty four d - block elements |
|--|--|--|--|

36) One of the following fertilizers providing nitrogen and phosphorous to plants is .

|                      |                           |         |                          |
|----------------------|---------------------------|---------|--------------------------|
| a) Potassium nitrate | b) Calcium superphosphate | c) Urea | ✓d) Diammonium phosphate |
|----------------------|---------------------------|---------|--------------------------|

37) Out of all the elements of group VA, the highest ionization energy is possessed by

|       |      |       |       |
|-------|------|-------|-------|
| ✓a) N | b) P | c) Sb | d) Bi |
|-------|------|-------|-------|

38) Gasoline of higher octane number is produced by .

|                     |                        |                   |              |
|---------------------|------------------------|-------------------|--------------|
| a) Thermal cracking | ✓b) Catalytic cracking | c) Steam cracking | d) Reforming |
|---------------------|------------------------|-------------------|--------------|

39) Which one of the following is electron withdrawing species ?



|                   |                   |                 |                   |
|-------------------|-------------------|-----------------|-------------------|
| a) $-\text{CH}_3$ | ✓b) $-\text{CHO}$ | c) $-\text{OH}$ | d) $-\text{NH}_2$ |
|-------------------|-------------------|-----------------|-------------------|

40) Tollen's reagent is .

|   |   |                              |                                       |
|---|---|------------------------------|---------------------------------------|
| a) Alkaline solution containing potassium tartarate | b) Alkaline solution containing potassium citrate | ✓c) Ammonical silver nitrate | d) Ammonical $\text{Cu}_2\text{Cl}_2$ |
|---|---|------------------------------|---------------------------------------|

41) Chemical composition of colemanite is.

|  |   |  |   |
|--|---|--|---|
| ✓a) $\text{Ca}_2\text{B}_6\text{O}_{11} \cdot 5\text{H}_2\text{O}$ | b) $\text{CaB}_4\text{O}_7 \cdot 4\text{H}_2\text{O}$ | c) $\text{Na}_2\text{B}_4\text{O}_7 \cdot 4\text{H}_2\text{O}$ | d) $\text{CaNaB}_5\text{O}_9 \cdot 8\text{H}_2\text{O}$ |
|--|---|--|---|

42) Who gave the law of Triads in 1829?

|                |            |           |              |
|----------------|------------|-----------|--------------|
| ✓a) Dobereiner | b) Newland | c) Mosely | d) Mendeleev |
|----------------|------------|-----------|--------------|

43) Group VI-B of transition elements contains.

|                 |                 |                 |                 |
|-----------------|-----------------|-----------------|-----------------|
| a) Zn , Cd , Hg | b) Fe , Ru , Os | ✓c) Cr , Mo , W | d) Mn , Te , Re |
|-----------------|-----------------|-----------------|-----------------|

44) \_\_\_\_\_ is used to make phenolic resins and synthetic drugs .

|                  |           |               |                  |
|------------------|-----------|---------------|------------------|
| ✓a) Acetaldehyde | b) Ketone | c) Both A & C | d) None of these |
|------------------|-----------|---------------|------------------|

45) Which of following element is not abundantly present in earth's crust?

|           |             |            |           |
|-----------|-------------|------------|-----------|
| a) Siloam | b) Aluminum | ✓c) Sodium | d) Oxygen |
|-----------|-------------|------------|-----------|

46) Mark the correct statement .

|   |   |  |  |
|---|---|--|--|
| a) Electron affinity is a measure of energy required to remove the electron | ✓b) Electron affinity is a measure of energy released by adding an electron | c) Electron affinity is a measure of energy required to excite an electron | d) Electron affinity is a measure of energy released by removing an electron |
|---|---|--|--|

47) Which of the following is not easily sulphonated ?

|                |                |                 |             |
|----------------|----------------|-----------------|-------------|
| a) Para-xylene | b) Meta-xylene | c) Ortho-xylene | ✓d) Benzene |
|----------------|----------------|-----------------|-------------|

48) The aqueous solution of Borax .

|           |             |                |           |
|-----------|-------------|----------------|-----------|
| a) Acidic | b) Alkaline | ✓c) Amphoteric | d) Manual |
|-----------|-------------|----------------|-----------|

49) An element that has a high ionization energy and tends to be chemically inactive would most likely to be:

|                    |                 |                         |              |
|--------------------|-----------------|-------------------------|--------------|
| a) An alkali metal | ✓b) A noble gas | c) A transition element | d) A halogen |
|--------------------|-----------------|-------------------------|--------------|

50) Which compound is called a universal solvent?

|                          |                           |                                    |                                       |
|--------------------------|---------------------------|------------------------------------|---------------------------------------|
| ✓a) $\text{H}_2\text{O}$ | b) $\text{CH}_3\text{OH}$ | c) $\text{C}_2\text{H}_5\text{OH}$ | d) $\text{CH}_3-\text{O}-\text{CH}_3$ |
|--------------------------|---------------------------|------------------------------------|---------------------------------------|

51) The chain isomers shown by pentane are .

|      |      |      |       |
|------|------|------|-------|
| a) 2 | b) 5 | c) 4 | ✓d) 3 |
|------|------|------|-------|

52) Alkali metals are .

|                     |                           |                         |                            |
|---------------------|---------------------------|-------------------------|----------------------------|
| a) Acidic in nature | b) Strong oxidizing agent | c) Amphoteric in nature | ✓d) Strong reducing agents |
|---------------------|---------------------------|-------------------------|----------------------------|

53) Which of the following carboxylic acids has higher melting point ?



|                |                |                   |                  |
|----------------|----------------|-------------------|------------------|
| a) Formic Acid | b) Acetic Acid | c) Propionic Acid | ✓d) Butyric Acid |
|----------------|----------------|-------------------|------------------|

54) Which one of the following substances cannot be used as phosphate fertilizer ?

|   |                                  |                            |                                  |
|---|----------------------------------|----------------------------|----------------------------------|
| a) $\text{Ca}(\text{H}_2\text{PO}_4)_2$ | b) $(\text{NH}_4)_2\text{HPO}_4$ | c) $\text{H}_3\text{PO}_4$ | ✓d) $\text{Ca}_3(\text{PO}_4)_2$ |
|---|----------------------------------|----------------------------|----------------------------------|

55) In t-butyl alcohol, the tertiary carbon is bonded to.

|                       |                         |                       |                       |
|-----------------------|-------------------------|-----------------------|-----------------------|
| a) Two hydrogen atoms | b) Three hydrogen atoms | c) One hydrogen atoms | ✓d) No hydrogen atoms |
|-----------------------|-------------------------|-----------------------|-----------------------|

56) The decomposition of potassium chlorate is a disproportionation reaction which gives .

|                               |                                 |                               |                               |
|-------------------------------|---------------------------------|-------------------------------|-------------------------------|
| ✓a) $\text{KCl} + \text{O}_2$ | b) $\text{KClO}_2 + \text{KCl}$ | c) $\text{KCl} + \text{Cl}_2$ | d) $\text{KClO} + \text{KCl}$ |
|-------------------------------|---------------------------------|-------------------------------|-------------------------------|

57) The self linking property of carbon is called .

|            |                |                  |                |
|------------|----------------|------------------|----------------|
| a) Linkage | ✓b) Contention | c) Communication | d) Cultivation |
|------------|----------------|------------------|----------------|

58) Which one of the following species is an electron donating by resonance in benzene .

|                  |                  |                   |                   |
|------------------|------------------|-------------------|-------------------|
| a) $-\text{CHO}$ | ✓b) $-\text{OH}$ | c) $-\text{COOR}$ | d) $-\text{COOH}$ |
|------------------|------------------|-------------------|-------------------|

59) Which of the following sulphates is not soluble in water?

|                    |                       |                  |                     |
|--------------------|-----------------------|------------------|---------------------|
| a) Sodium sulphate | b) Potassium sulphate | c) Zinc sulphate | ✓d) Barium sulphate |
|--------------------|-----------------------|------------------|---------------------|

60) Isopropyl alcohol on oxidation gives.

|                 |             |          |            |
|-----------------|-------------|----------|------------|
| a) Acetaldehyde | ✓b) Acetone | c) Ether | d) Propene |
|-----------------|-------------|----------|------------|

61) Alcohols are .

|            |                   |           |               |
|------------|-------------------|-----------|---------------|
| a) Neutral | b) Strongly basic | ✓c) Basic | d) Amphoteric |
|------------|-------------------|-----------|---------------|

62) Which of the following is not heterocyclic?

|             |             |            |          |
|-------------|-------------|------------|----------|
| ✓a) Aniline | b) Pyridine | c) Pyrrole | d) Furan |
|-------------|-------------|------------|----------|

63) f-block elements are also called

|                                     |                                |                              |                  |
|-------------------------------------|--------------------------------|------------------------------|------------------|
| a) Non-typical transition elements. | b) Normal transition elements. | c) Outer transition elements | ✓d) None is true |
|-------------------------------------|--------------------------------|------------------------------|------------------|

64) The ore  $\text{CaSO}_4 \cdot \text{H}_2\text{O}$  has the general name .

|            |             |            |               |
|------------|-------------|------------|---------------|
| ✓a) Gypsum | b) Dolomite | c) Calcite | d) Epsom salt |
|------------|-------------|------------|---------------|

65) Which of the following reaches at the anode during the electrolyses of brine in Nelson's cell .

|                 |       |                   |                 |
|-----------------|-------|-------------------|-----------------|
| a) $\text{H}_2$ | b) Na | ✓c) $\text{Cl}_2$ | d) $\text{O}_2$ |
|-----------------|-------|-------------------|-----------------|

66) Acetic acid was first isolated from .

|           |             |         |            |
|-----------|-------------|---------|------------|
| a) Butter | ✓b) Vinegar | c) Milk | d) Red ant |
|-----------|-------------|---------|------------|

67) Which one of the following a dihydric alcohol ?

|            |                  |             |            |
|------------|------------------|-------------|------------|
| a) Ethanol | b) Cyclo hexanol | c) Glycerol | ✓d) Glycol |
|------------|------------------|-------------|------------|

68) Organic compounds are structurally \_\_\_\_\_ and more complex .

|          |           |               |           |
|----------|-----------|---------------|-----------|
| a) Small | b) Medium | c) Both A & B | ✓d) Large |
|----------|-----------|---------------|-----------|



69) Peroxyacetylnitrate (PAN) is an irritant to human beings and it affects

|          |         |            |         |
|----------|---------|------------|---------|
| ✓a) Eyes | b) Ears | c) Stomach | d) Nose |
|----------|---------|------------|---------|

70) Cement was introduced by mason .

|               |                |                   |                       |
|---------------|----------------|-------------------|-----------------------|
| a) D.H, Whove | b) Humphy Davy | ✓c) Joseph Aspdin | d) Friedrick Mieschar |
|---------------|----------------|-------------------|-----------------------|

71) Alkyl halides are considered to be very reactive compounds towards nucleophiles, because:

|                                      |  |  |   |
|--------------------------------------|--|--|---|
| a) They have an electrophilic carbon | ✓b) They have an electrophilic carbon and a good leaving group | c) They have an electrophilic carbon and a bad leaving group | d) They have a nucleophilic carbon and a good leaving group |
|--------------------------------------|--|--|---|

72) Dry distillation of calcium formate gives

|             |            |            |              |
|-------------|------------|------------|--------------|
| a) Methanol | b) Ethanal | c) Acetone | ✓d) Methanal |
|-------------|------------|------------|--------------|

73) -SH functional group is called

|              |          |              |          |
|--------------|----------|--------------|----------|
| a) Carboxy l | b) Nitro | ✓c) Mercapto | d) Cyano |
|--------------|----------|--------------|----------|

74) Steam cracking will produce .

|                     |                                    |                       |                       |
|---------------------|------------------------------------|-----------------------|-----------------------|
| a) Cyclic compounds | ✓b) Lower unsaturated hydrocarbons | c) Aromatic compounds | d) Branched compounds |
|---------------------|------------------------------------|-----------------------|-----------------------|

75) Which reagent is used to reduce a carboxylic group to an alcohol.

|             |             |             |               |
|-------------|-------------|-------------|---------------|
| a) $H_2/Ni$ | b) $H_2/Pt$ | c) $NaBH_4$ | ✓d) $LiAlH_4$ |
|-------------|-------------|-------------|---------------|

76) Setting process of cement is based upon.

|               |                |              |                              |
|---------------|----------------|--------------|------------------------------|
| a) Hydrolysis | b) Dehydration | c) Hydration | ✓d) Hydrolysis and hydration |
|---------------|----------------|--------------|------------------------------|

77) Boron differs from the other members of group IIIA beacuse

|                         |                          |  |                                    |
|-------------------------|--------------------------|--|------------------------------------|
| ✓a) It is a non - metal | b) It forms $B^{+3}$ ion | c) It is not covalent in its compounds | d) It has maximum covalency of six |
|-------------------------|--------------------------|--|------------------------------------|

78) Which one of the following is not an alkali metal ?

|             |           |             |            |
|-------------|-----------|-------------|------------|
| a) Francium | b) Cesium | c) Rubidium | ✓d) Radium |
|-------------|-----------|-------------|------------|

79) Which of the following noble gas is used for arc welding and cutting.

|           |           |          |          |
|-----------|-----------|----------|----------|
| a) Helium | ✓b) Argon | c) Xenon | d) Radon |
|-----------|-----------|----------|----------|

80) The nutrients which are required in very small amount for the growth of plants are called .

|                   |                        |                    |                            |
|-------------------|------------------------|--------------------|----------------------------|
| a) Macronutrients | b) Essential nutrients | ✓c) Micronutrients | d) Non-essential nutrients |
|-------------------|------------------------|--------------------|----------------------------|

81) Which halogen will react spontaneously with  $Au(s)$  to produce  $Au^{3+}$ ?

|           |           |          |           |
|-----------|-----------|----------|-----------|
| a) $Br_2$ | ✓b) $F_2$ | c) $I_2$ | d) $Cl_2$ |
|-----------|-----------|----------|-----------|

82) Which one of the following is a non - metal ?



|       |       |       |        |
|-------|-------|-------|--------|
| a) Bi | b) Sb | c) Al | ✓d) Br |
|-------|-------|-------|--------|

83) Bleaching powder may be produced by passing chlorine over:

|                      |                               |                       |                              |
|----------------------|-------------------------------|-----------------------|------------------------------|
| a) Calcium carbonate | b) Anhydrous calcium sulphate | ✓c) Calcium hydroxide | d) hydrated calcium sulphate |
|----------------------|-------------------------------|-----------------------|------------------------------|

84) Alcohols react with  $\text{SOCl}_2$  in the presence of \_\_\_\_\_

|                    |              |            |                  |
|--------------------|--------------|------------|------------------|
| a) $\text{ZnCl}_2$ | ✓b) Pyridine | c) Amylase | d) None of these |
|--------------------|--------------|------------|------------------|

85) The strength of binding energy of transition elements depends upon

|                             |                       |                                  |                      |
|-----------------------------|-----------------------|----------------------------------|----------------------|
| a) Number of electron pairs | b) Number of neutrons | ✓c) Number of unpaired electrons | d) Number of protons |
|-----------------------------|-----------------------|----------------------------------|----------------------|

86)  $\text{SN}_2$  Mechanism involves .

|                                   |                                    |                                   |                        |
|-----------------------------------|------------------------------------|-----------------------------------|------------------------|
| a) 1 <sup>st</sup> order kinetics | ✓b) 2 <sup>nd</sup> order kinetics | c) 3 <sup>rd</sup> order kinetics | d) Zero order kinetics |
|-----------------------------------|------------------------------------|-----------------------------------|------------------------|

87) Primary , secondary and tertiary alcohols can be distinguished by .

|                  |                |                          |                  |
|------------------|----------------|--------------------------|------------------|
| a) Tollen's Test | ✓b) Lucas Test | c) Fehling Solution Test | d) Iodoform Test |
|------------------|----------------|--------------------------|------------------|

88) When aqueous solution of potassium salt of acetic acid is electrolyzed the gas produced is .

|            |            |           |           |
|------------|------------|-----------|-----------|
| a) Methane | ✓b) Ethane | c) Ethene | d) Ethyne |
|------------|------------|-----------|-----------|

89) When ethyl iodide reacts with sodium methoxide it gives

|                        |                 |                  |            |
|------------------------|-----------------|------------------|------------|
| ✓a) Methyl ethyl ether | b) Ethyl iodide | c) Diethyl ether | d) Ethanol |
|------------------------|-----------------|------------------|------------|

90) A cyclic regular hexagonal structure for benzene was first proposed by .

|                    |             |            |          |
|--------------------|-------------|------------|----------|
| a) Michael Faraday | b) Hoffmann | ✓c) Kekule | d) Dewar |
|--------------------|-------------|------------|----------|

91) Which of the following will have the highest boiling point?

|             |             |            |                |
|-------------|-------------|------------|----------------|
| a) Methanal | b) Propanal | c) Ethanal | ✓d) 2-Hexanone |
|-------------|-------------|------------|----------------|

92) Which gas is cause of Asthma?

|                  |                 |                  |                  |
|------------------|-----------------|------------------|------------------|
| ✓a) $\text{O}_3$ | b) $\text{O}_2$ | c) $\text{SO}_2$ | d) $\text{CO}_2$ |
|------------------|-----------------|------------------|------------------|

93) During nitration of benzene, the active nitrating agent is

|                  |                     |                    |                   |
|------------------|---------------------|--------------------|-------------------|
| a) $\text{NO}_3$ | ✓b) $\text{NO}_2^+$ | c) $\text{NO}_2^-$ | d) $\text{HNO}_3$ |
|------------------|---------------------|--------------------|-------------------|

94) Lanthanides are present in .

|                           |                           |                            |                           |
|---------------------------|---------------------------|----------------------------|---------------------------|
| a) 4 <sup>th</sup> period | b) 5 <sup>th</sup> period | ✓c) 6 <sup>th</sup> period | d) 7 <sup>th</sup> period |
|---------------------------|---------------------------|----------------------------|---------------------------|

95)  $\text{NO}_2$  is not used as .

|                |   |   |                              |
|----------------|---|---|------------------------------|
| a) Rocket Fuel | b) Catalyst in the manufacture of $\text{H}_2\text{SO}_4$ in lead chamber process | c) Starting material in the manufacturing of $\text{HNO}_3$ | ✓d) In manufacturing of Urea |
|----------------|---|---|------------------------------|

96) \_\_\_\_\_ is used silvering of mirror .

|                 |           |                  |               |
|-----------------|-----------|------------------|---------------|
| a) Acetaldehyde | b) Ketone | ✓c) Formaldehyde | d) Both A & C |
|-----------------|-----------|------------------|---------------|



97) Which of the following pairs is strongly paramagnetic ?

|                                     |                                     |                                       |                                     |
|-------------------------------------|-------------------------------------|---------------------------------------|-------------------------------------|
| a) $\text{Mn}^{+2}, \text{Fe}^{+2}$ | b) $\text{Mn}^{+3}, \text{Fe}^{+2}$ | ✓ c) $\text{Mn}^{+2}, \text{Fe}^{+3}$ | d) $\text{Mn}^{+3}, \text{Fe}^{+3}$ |
|-------------------------------------|-------------------------------------|---------------------------------------|-------------------------------------|

98) Which of the following is a typical transition metal?

|       |      |       |         |
|-------|------|-------|---------|
| a) Sc | b) Y | c) Ra | ✓ d) Co |
|-------|------|-------|---------|

99) Hydrogen bond is the strongest between the molecules of.

|         |        |       |        |
|---------|--------|-------|--------|
| ✓ a) HF | b) HBr | c) HI | d) HCl |
|---------|--------|-------|--------|

100) During the manufacturing process of cement the temperature of the decomposition zone goes up to

|                          |                            |                          |                          |
|--------------------------|----------------------------|--------------------------|--------------------------|
| a) $600^{\circ}\text{C}$ | ✓ b) $800^{\circ}\text{C}$ | c) $900^{\circ}\text{C}$ | d) $500^{\circ}\text{C}$ |
|--------------------------|----------------------------|--------------------------|--------------------------|

101) The nucleophilic addition reactions of carbonyl group are catalyzed by \_\_\_\_\_

|           |          |          |                 |
|-----------|----------|----------|-----------------|
| a) Oxygen | b) Acids | c) Bases | ✓ d) Both B & C |
|-----------|----------|----------|-----------------|

102) Percentage of nitrogen in diammonium phosphate is .

|         |         |         |           |
|---------|---------|---------|-----------|
| a) 48 % | b) 34 % | c) 13 % | ✓ d) 16 % |
|---------|---------|---------|-----------|

103) The benzene molecule contains

|                       |                    |                     |   |
|-----------------------|--------------------|---------------------|---|
| a) Three double bonds | b) One double bond | c) Two double bonds | ✓ d) Delocalized $\pi$ -electron charge |
|-----------------------|--------------------|---------------------|---|

104) Which of the following aldehydes is used to prepare urotropine medicine ?

|                 |            |                   |                  |
|-----------------|------------|-------------------|------------------|
| a) Acetaldehyde | b) Acetone | ✓ c) Formaldehyde | d) Ethyl alcohol |
|-----------------|------------|-------------------|------------------|

105) n - butyl alcohol and diethyl ether are .

|                      |                               |                     |             |
|----------------------|-------------------------------|---------------------|-------------|
| a) Geometric isomers | ✓ b) Functional group isomers | c) Position isomers | d) Metamers |
|----------------------|-------------------------------|---------------------|-------------|

106) Oxides of Be are ?

|           |          |                 |            |
|-----------|----------|-----------------|------------|
| a) Acidic | b) Basic | ✓ c) Amphoteric | d) Neutral |
|-----------|----------|-----------------|------------|

107) Bakelite is obtained from phenol by reacting with.

|           |            |                   |             |
|-----------|------------|-------------------|-------------|
| a) Acetal | b) Ethanal | ✓ c) Formaldehyde | d) Methanol |
|-----------|------------|-------------------|-------------|

108) Which one may not act as electrophile ?

|                      |                  |                    |                   |
|----------------------|------------------|--------------------|-------------------|
| a) $\text{NH}_4^{+}$ | b) $\text{BF}_3$ | ✓ c) $\text{NH}_3$ | d) $\text{H}^{+}$ |
|----------------------|------------------|--------------------|-------------------|

109) Tautomerism arises due to shifting of.

|                    |            |                 |             |
|--------------------|------------|-----------------|-------------|
| a) Sigma Electrons | b) Neutron | c) Pi-Electrons | ✓ d) Proton |
|--------------------|------------|-----------------|-------------|

110) Which acid is used in the manufacture of synthetic fibre

|                |                |                  |                  |
|----------------|----------------|------------------|------------------|
| a) Formic acid | b) Oxalic acid | c) Carbonic acid | ✓ d) Acetic acid |
|----------------|----------------|------------------|------------------|

111) Boric acid cannot be used .

|                              |                      |                     |                           |
|------------------------------|----------------------|---------------------|---------------------------|
| a) As antiseptic in medicine | ✓ b) In soda bottles | c) For washing eyes | d) For enamels and glazes |
|------------------------------|----------------------|---------------------|---------------------------|



112) Halogens are \_\_\_\_\_.

|  |                |                |                  |
|--|----------------|----------------|------------------|
| <input checked="" type="checkbox"/> a) Salt former | b) Acid former | c) Base former | d) None of these |
|--|----------------|----------------|------------------|

113) Which of the following cannot be bleached by the bleaching powder ?

|           |               |          |   |
|-----------|---------------|----------|---|
| a) Cotton | b) Paper pulp | c) Linen | <input checked="" type="checkbox"/> d) Silk |
|-----------|---------------|----------|---|

114) 2-Hydroxy propanoic acid is called .

|                |  |                |             |
|----------------|--|----------------|-------------|
| a) Oxalic acid | <input checked="" type="checkbox"/> b) Lactic acid | c) Citric acid | d) Acetates |
|----------------|--|----------------|-------------|

115) Tetraethyl lead is an organometallic compound which is used .

|   |                |                          |   |
|---|----------------|--------------------------|---|
| <input checked="" type="checkbox"/> a) As anti - knocking agent | b) As catalyst | c) To help in combustion | d) To increase octane number of petroleum |
|---|----------------|--------------------------|---|

116) Kaolin is a mineral of .

|           |              |  |              |
|-----------|--------------|--|--------------|
| a) Carbon | b) Magnesium | <input checked="" type="checkbox"/> c) Silicon | d) Aluminium |
|-----------|--------------|--|--------------|

117) Example of polycyclic Aromatic hydro carbon is .

|   |           |            |                  |
|---|-----------|------------|------------------|
| <input checked="" type="checkbox"/> a) Biphenyl | b) Phenol | c) Toluene | d) None of these |
|---|-----------|------------|------------------|

118) Zinc oxide is an example of.

|                 |                |   |            |
|-----------------|----------------|---|------------|
| a) Acidic oxide | b) Basic oxide | <input checked="" type="checkbox"/> c) Amphoteric oxide | d) Neutral |
|-----------------|----------------|---|------------|

119) Total number of d-block elements are.

|       |       |   |       |
|-------|-------|---|-------|
| a) 10 | b) 20 | <input checked="" type="checkbox"/> c) 30 | d) 40 |
|-------|-------|---|-------|

120) Which of the following compound will react with Fehling's solution ?

|          |  |                             |  |
|----------|--|-----------------------------|--|
| a) HCOOH | <input checked="" type="checkbox"/> b) $\text{H}_3\text{C}\cdot\text{CHO}$ | c) $\text{H}_3\text{CCOOH}$ | d) $\text{H}_3\text{CO} - \text{CH}_3$ |
|----------|--|-----------------------------|--|

121) Which element does not belong to group VI A ?

|      |   |       |       |
|------|---|-------|-------|
| a) S | <input checked="" type="checkbox"/> b) As | c) Te | d) Po |
|------|---|-------|-------|

122) What is the special name of a compound having formula  $\text{CH}_5 - \text{NH}_2$  ?

|             |  |              |          |
|-------------|--|--------------|----------|
| a) Pyridine | <input checked="" type="checkbox"/> b) Aniline | c) Hydrazine | d) Imine |
|-------------|--|--------------|----------|

123) The common name of 2-methyl-2-chloropropane is .

|                       |  |                            |                     |
|-----------------------|--|----------------------------|---------------------|
| a) Iso-butyl chloride | <input checked="" type="checkbox"/> b) Sec. Butyl chloride | c) Tertiary butyl chloride | d) n-butyl chloride |
|-----------------------|--|----------------------------|---------------------|

124) The carboxyl group shows the chemistry of both carboxyl and \_\_\_\_\_ groups .

|   |                |                    |                  |
|---|----------------|--------------------|------------------|
| <input checked="" type="checkbox"/> a) Hydroxyl | b) Acetyl acid | c) Carboxylic acid | d) None of these |
|---|----------------|--------------------|------------------|

125) Which is the least reactive of all the alkali metals?

|   |       |      |       |
|---|-------|------|-------|
| <input checked="" type="checkbox"/> a) Li | b) Na | c) K | d) Cs |
|---|-------|------|-------|

126) Which metal oxide is insoluble in water?

|  |        |        |        |
|--|--------|--------|--------|
| <input checked="" type="checkbox"/> a) MgO | b) CaO | c) SrO | d) BaO |
|--|--------|--------|--------|

127) Formalin is



|  |   |  |  |
|--|---|--|--|
| a) 10% solution of formaldehyde in water | ✓b) 40% solution of formaldehyde in water | c) 20% solution of formaldehyde in water | d) 60% solution of formaldehyde in water |
|--|---|--|--|

128) Which is not true for Alkyl halides ?

|   |  |   |   |
|---|--|---|---|
| a) Alkyl halides are used to prepare ethers | b) Alkyl halides give carbocations with Lewis acid | c) Alkyl halides act as substrate in $S_N2$ reactions | ✓d) Alkyl halides act as nucleophile in $S_N2$ reaction |
|---|--|---|---|

129) Which one of halogens is a liquid ?

|       |           |            |      |
|-------|-----------|------------|------|
| a) Fe | b) $Cl_2$ | ✓c) $Br_2$ | d) I |
|-------|-----------|------------|------|

130) The wood paper is derived from the name of which reedy plant.

|         |               |             |          |
|---------|---------------|-------------|----------|
| a) Rose | b) Sun Flower | ✓c) Papyrus | d) Water |
|---------|---------------|-------------|----------|

131) Which of the following is a polycyclic aromatic compound ?

|           |            |                 |            |
|-----------|------------|-----------------|------------|
| a) Xylene | b) Styrene | ✓c) Naphthalene | d) Benzene |
|-----------|------------|-----------------|------------|

132) Synthetic rubber is made by polymerization of

|               |                     |              |                 |
|---------------|---------------------|--------------|-----------------|
| a) Chloroform | b) Divinylacetylene | c) Acetylene | ✓d) Chloroprene |
|---------------|---------------------|--------------|-----------------|

133) Chlorine heptoxide ( $Cl_2O_7$ ) reacts with water to form:

|                      |                     |                 |                        |
|----------------------|---------------------|-----------------|------------------------|
| a) Hypochlorous acid | ✓b) Perchloric acid | c) Chloric acid | d) Chlorine and oxygen |
|----------------------|---------------------|-----------------|------------------------|

134) Ecosystem is a smaller unit of

|                |                |               |               |
|----------------|----------------|---------------|---------------|
| a) Lithosphere | b) Hydrosphere | c) Atmosphere | ✓d) Biosphere |
|----------------|----------------|---------------|---------------|

135) Aldehyde react with hydroxyl amine in acidic solution to give .

|              |          |            |                |
|--------------|----------|------------|----------------|
| ✓a) An oxime | b) Aldol | c) Polymer | d) Acetic acid |
|--------------|----------|------------|----------------|

136) In benzene each carbon is .

|                    |                       |                      |                       |
|--------------------|-----------------------|----------------------|-----------------------|
| a) $sp$ hybridized | ✓b) $sp^2$ hybridized | c) $sp^3$ hybridized | d) $dsp^2$ hybridized |
|--------------------|-----------------------|----------------------|-----------------------|

137) The melting point of Sn and Pb is less as compared to group III elements because .

|                           |  |                        |                        |
|---------------------------|--|------------------------|------------------------|
| a) They are large in size | ✓b) They do not use four valence electrons | c) They are metalloids | d) They are all metals |
|---------------------------|--|------------------------|------------------------|

138) Aluminum oxide is.

|                 |                |                      |                  |
|-----------------|----------------|----------------------|------------------|
| a) Acidic oxide | b) Basic oxide | ✓c) Amphoteric oxide | d) None of these |
|-----------------|----------------|----------------------|------------------|

139) Ethers show the phenomenon of

|                       |               |                          |                                |
|-----------------------|---------------|--------------------------|--------------------------------|
| a) Position isomerism | b) Metamerism | c) Cis - trans isomerism | ✓d) Functional group isomerism |
|-----------------------|---------------|--------------------------|--------------------------------|

140)  $S_N2$  reactions can be carried out with .

|                          |                          |                           |                             |
|--------------------------|--------------------------|---------------------------|-----------------------------|
| ✓a) Primary alkyl halide | b) Tertiary alkyl halide | c) Secondary alkyl halide | d) Any type of alkyl halide |
|--------------------------|--------------------------|---------------------------|-----------------------------|

141) Conc.  $H_2SO_4$  dehydrate the oxalic acid into .



|                                       |                                     |                                    |  |
|---------------------------------------|-------------------------------------|------------------------------------|--|
| a) $\text{CO}_2 + \text{H}_2\text{O}$ | b) $\text{CO} + \text{H}_2\text{O}$ | c) $\text{C} + \text{H}_2\text{O}$ | ✓d) $\text{CO} + \text{CO}_2 + \text{H}_2\text{O}$ |
|---------------------------------------|-------------------------------------|------------------------------------|--|

142) Fungicides are the pesticides which

|                                  |                |                 |               |
|----------------------------------|----------------|-----------------|---------------|
| ✓a) Control the growth of fungus | b) Kill plants | c) Kill insects | d) Kill herbs |
|----------------------------------|----------------|-----------------|---------------|

143) The fiber which is made from acrylonitrile as monomer?

|        |                    |                |                   |
|--------|--------------------|----------------|-------------------|
| a) PVC | b) Polyester fiber | c) Rayon fiber | ✓d) Acrylic fiber |
|--------|--------------------|----------------|-------------------|

144) The state of hybridization of carbon in ethylene is .

|                  |                   |                |                   |
|------------------|-------------------|----------------|-------------------|
| a) $\text{sp}^3$ | ✓b) $\text{sp}^2$ | c) $\text{sp}$ | d) $\text{dsp}^2$ |
|------------------|-------------------|----------------|-------------------|

145) The reaction of bromobenzene with ethyl bromide in the presence of Na in dry ether will give .

|            |            |           |                   |
|------------|------------|-----------|-------------------|
| a) Toluene | b) Benzene | c) Xylene | ✓d) Ethyl benzene |
|------------|------------|-----------|-------------------|

146) The pH of truly acidic rain is.

|            |            |            |                 |
|------------|------------|------------|-----------------|
| a) 7 - 6.8 | b) 6.5 - 6 | c) 6 - 5.6 | ✓d) Less than 5 |
|------------|------------|------------|-----------------|

147) The state of hybridization of " C " in ethane is .

|                   |                |                  |                   |
|-------------------|----------------|------------------|-------------------|
| ✓a) $\text{sp}^3$ | b) $\text{sp}$ | c) $\text{sp}^2$ | d) $\text{dsp}^3$ |
|-------------------|----------------|------------------|-------------------|

148) The diameter of rotary kiln in the manufacture of cement is .

|                |                |                |                  |
|----------------|----------------|----------------|------------------|
| a) 1 to 2 feet | b) 2 to 4 feet | c) 4 to 8 feet | ✓d) 8 to 15 feet |
|----------------|----------------|----------------|------------------|

149) Which of the following is a typical transition metal?

|       |      |        |       |
|-------|------|--------|-------|
| a) Sc | b) Y | ✓c) Fe | d) Ra |
|-------|------|--------|-------|

150) Which of the following is not an amino acid?

|                  |          |            |             |
|------------------|----------|------------|-------------|
| a) Aspartic acid | b) Lysin | c) Alanine | ✓d) Aniline |
|------------------|----------|------------|-------------|

151) The concept of atomic number was introduced by.

|           |              |             |               |
|-----------|--------------|-------------|---------------|
| a) Alrazi | b) Mendeleev | ✓c) Moseley | d) Dobereiner |
|-----------|--------------|-------------|---------------|

152) Phenol can be distinguished from benzene by .

|              |                  |                 |                                 |
|--------------|------------------|-----------------|---------------------------------|
| a) Nitration | b) Hydrogenation | c) Sulphonation | ✓d) Reaction with $\text{Br}_2$ |
|--------------|------------------|-----------------|---------------------------------|

153) If saturate solution of Borax is allowed to crystallize above  $62^\circ\text{C}$ , crystals obtained are .

|                |                  |                |              |
|----------------|------------------|----------------|--------------|
| a) Decahydrate | ✓b) Pentahydrate | c) Hepthydrate | d) Anhydrous |
|----------------|------------------|----------------|--------------|

154) Micro-nutrients are required in quantity ranging from

|          |            |            |           |
|----------|------------|------------|-----------|
| a) 4-40g | ✓b) 6-200g | c) 6-200kg | d) 4-40kg |
|----------|------------|------------|-----------|

155) The lowest ionization energy is possessed by .

|      |      |       |        |
|------|------|-------|--------|
| a) P | b) N | c) Sb | ✓d) Cs |
|------|------|-------|--------|

156) Methyl 1,3 Butadiene is called .

|            |           |                 |               |
|------------|-----------|-----------------|---------------|
| a) Stgrene | b) Cumene | c) Chloroperene | ✓d) Isoperene |
|------------|-----------|-----------------|---------------|



157) Laughing gas is chemically

|       |                      |                    |                                  |
|-------|----------------------|--------------------|----------------------------------|
| a) NO | ✓b) N <sub>2</sub> O | c) NO <sub>2</sub> | d) N <sub>2</sub> O <sub>4</sub> |
|-------|----------------------|--------------------|----------------------------------|

158) Which of the following is non-typical transition metal?

|       |       |        |       |
|-------|-------|--------|-------|
| a) Fe | b) Mn | ✓c) Zn | d) Ni |
|-------|-------|--------|-------|

159) Which of the following substances has greater percentage in cement ?

|        |                                   |         |                     |
|--------|-----------------------------------|---------|---------------------|
| a) MgO | b) Al <sub>2</sub> O <sub>3</sub> | ✓c) CaO | d) SiO <sub>2</sub> |
|--------|-----------------------------------|---------|---------------------|

160) Which of the following acid can be used as a catalyst in Friedel-Crafts reactions?

|                       |                     |                      |         |
|-----------------------|---------------------|----------------------|---------|
| ✓a) AlCl <sub>3</sub> | b) HNO <sub>3</sub> | c) BeCl <sub>2</sub> | d) NaCl |
|-----------------------|---------------------|----------------------|---------|

161) Benzene cannot undergo

|                           |                        |                       |                           |
|---------------------------|------------------------|-----------------------|---------------------------|
| a) Substitution reactions | b) Oxidation reactions | c) Addition reactions | ✓d) Elimination reactions |
|---------------------------|------------------------|-----------------------|---------------------------|

162) The solvent that can dissolve all the carboxylic acids is .

|  |              |            |          |
|--|--------------|------------|----------|
| a) Conc.H <sub>2</sub> SO <sub>4</sub> | ✓b) Dil-NaOH | c) Dil-HCl | d) Water |
|--|--------------|------------|----------|

163) Good fertilizer must be .

|           |              |               |                  |
|-----------|--------------|---------------|------------------|
| ✓a) Cheap | b) Expensive | c) Both A & B | d) None of these |
|-----------|--------------|---------------|------------------|

164) Borate glass contains .

|                                   |   |                     |           |
|-----------------------------------|---|---------------------|-----------|
| a) H <sub>3</sub> BO <sub>3</sub> | b) Ca <sub>2</sub> B <sub>6</sub> O <sub>11</sub> | c) HBO <sub>2</sub> | ✓d) Borax |
|-----------------------------------|---|---------------------|-----------|

165) The compound formed in Borax bead test is .

|                      |                 |                   |                |
|----------------------|-----------------|-------------------|----------------|
| ✓a) Metal metaborate | b) Metal boride | c) Metallic boron | d) Boron oxide |
|----------------------|-----------------|-------------------|----------------|

166) Which of the following does not belongs to IIA group ?

|      |        |       |       |
|------|--------|-------|-------|
| a) B | ✓b) Ge | c) Al | d) In |
|------|--------|-------|-------|

167) Select From the following the one which is alcohol:

|  |                         |                                       |   |
|--|-------------------------|---------------------------------------|---|
| ✓a) CH <sub>3</sub> -CH <sub>2</sub> -OH | b) CH <sub>3</sub> COOH | c) CH <sub>3</sub> -O-CH <sub>3</sub> | d) CH <sub>3</sub> -CH <sub>2</sub> -Br |
|--|-------------------------|---------------------------------------|---|

168) The oxides of beryllium are .

|           |          |                |                  |
|-----------|----------|----------------|------------------|
| a) Acidic | b) Basic | ✓c) Amphoteric | d) None of these |
|-----------|----------|----------------|------------------|

169) The presence of double bond in alkenes cannot be identified by .

|                          |   |               |                   |
|--------------------------|---|---------------|-------------------|
| a) Br <sub>2</sub> water | b) KMnO <sub>4</sub> + H <sub>2</sub> O | c) Ozonolysis | ✓d) Tollen's test |
|--------------------------|---|---------------|-------------------|

170) Acetone reacts with HCN to form a cyanohydrin. It is an example of

|                           |                           |                               |                              |
|---------------------------|---------------------------|-------------------------------|------------------------------|
| a) Electrophilic addition | ✓b) Nucleophilic addition | c) Electrophilic substitution | d) Nucleophilic substitution |
|---------------------------|---------------------------|-------------------------------|------------------------------|

171) Molecular formula of benzyl chloride .

|   |   |  |  |
|---|---|--|--|
| a) H <sub>5</sub> C <sub>6</sub> CCl <sub>3</sub> | b) H <sub>5</sub> C <sub>6</sub> HCl <sub>2</sub> | ✓c) H <sub>5</sub> C <sub>6</sub> CH <sub>2</sub> Cl | d) H <sub>5</sub> C <sub>6</sub> H <sub>2</sub> CH <sub>2</sub> Cl |
|---|---|--|--|

172) Mark the correct statement .



|   |   |   |  |
|---|---|---|--|
| ✓a) $\text{Na}^+$ is smaller than Na atom | b) Cl (ion) and Cl (atom) are equal in size | c) $\text{Na}^+$ is larger than Na atom | d) $\text{Cl}^-$ is smaller than Cl atom |
|---|---|---|--|

173) Which is the longest period of periodic table ?

|      |      |       |      |
|------|------|-------|------|
| a) 4 | b) 5 | ✓c) 6 | d) 7 |
|------|------|-------|------|

174) The general formula of Alkyl Halide .

|         |        |        |                  |
|---------|--------|--------|------------------|
| ✓a) R-X | b) R-Y | c) R-Z | d) None of these |
|---------|--------|--------|------------------|

175) Ozonolysis of ethene causes breaking of C - C bond , the product is .

|                  |                    |                 |                          |
|------------------|--------------------|-----------------|--------------------------|
| ✓a) Formaldehyde | b) Ethylene glycol | c) Acetaldehyde | d) Ethylene chlorohydrin |
|------------------|--------------------|-----------------|--------------------------|

176) Amongst the following, the compound that can be most readily sulphonated is

|             |            |                 |                  |
|-------------|------------|-----------------|------------------|
| ✓a) Toluene | b) Benzene | c) Nitrobenzene | d) Chlorobenzene |
|-------------|------------|-----------------|------------------|

177) Which hydroxide gets decomposed on heating.

|          |         |        |         |
|----------|---------|--------|---------|
| ✓a) LiOH | b) NaOH | c) KOH | d) RbOH |
|----------|---------|--------|---------|

178) Which halogen occurs naturally in a positive oxidation state?

|             |             |            |            |
|-------------|-------------|------------|------------|
| a) Fluorine | b) Chlorine | c) Bromine | ✓d) Iodine |
|-------------|-------------|------------|------------|

179) Ortho and para derivative are obtained by halogenation of .

|                 |             |                 |            |
|-----------------|-------------|-----------------|------------|
| a) Nitrobenzene | ✓b) Toluene | c) Benzaldehyde | d) Benzene |
|-----------------|-------------|-----------------|------------|

180) A double bond consists of:

|                    |                               |                               |                |
|--------------------|-------------------------------|-------------------------------|----------------|
| a) Two sigma bonds | ✓b) One sigma and one pi bond | c) One sigma and two pi bonds | d) Two pi bond |
|--------------------|-------------------------------|-------------------------------|----------------|

181) Which of the following is not the property of phosphorous ?

|                           |   |                                     |                                     |
|---------------------------|---|-------------------------------------|-------------------------------------|
| a) It means light bearing | b) Rich source of phosphorous in bone ash | c) It does not exist free in nature | ✓d) It does not exist in allotropic |
|---------------------------|---|-------------------------------------|-------------------------------------|

182) The percentage of carbon in different types of iron products is in the order of.

|                                     |                                     |                                      |                                     |
|-------------------------------------|-------------------------------------|--------------------------------------|-------------------------------------|
| a) Cast iron > wrought iron > steel | b) wrought iron > steel > cast iron | ✓c) Cast iron > steel > wrought iron | d) Cast iron = steel > wrought iron |
|-------------------------------------|-------------------------------------|--------------------------------------|-------------------------------------|

183) In water the concentration of dissolved  $\text{O}_2$  should be.

|              |              |               |               |
|--------------|--------------|---------------|---------------|
| a) 1 - 3 ppm | b) 2 - 4 ppm | ✓c) 4 - 8 ppm | d) 8 - 12 ppm |
|--------------|--------------|---------------|---------------|

184) Which set of hybrid orbitals has planar triangular shape

|                  |                   |       |                   |
|------------------|-------------------|-------|-------------------|
| a) $\text{sp}^3$ | ✓b) $\text{sp}^2$ | c) sp | d) $\text{dsp}^2$ |
|------------------|-------------------|-------|-------------------|

185) Which element among the following belongs to group IV-A of the periodic table.

|           |           |          |           |
|-----------|-----------|----------|-----------|
| a) Barium | b) Iodine | ✓c) Lead | d) Oxygen |
|-----------|-----------|----------|-----------|

186) Organic compounds are generally \_\_\_\_\_ compound .

|          |                        |              |                  |
|----------|------------------------|--------------|------------------|
| a) Ionic | b) Coordinate covalent | ✓c) Covalent | d) None of these |
|----------|------------------------|--------------|------------------|



187) Which one of the following is acidic oxide ?

|                           |                           |                             |                         |
|---------------------------|---------------------------|-----------------------------|-------------------------|
| a) $\text{N}_2\text{O}_3$ | b) $\text{N}_2\text{O}_5$ | ✓ c) $\text{N}_2\text{O}_4$ | d) $\text{N}_2\text{O}$ |
|---------------------------|---------------------------|-----------------------------|-------------------------|

188) Which compound will not give iodoform test on treatment with  $\text{I}_2$ .NaOH ?

|                 |            |             |               |
|-----------------|------------|-------------|---------------|
| a) Acetaldehyde | b) Acetone | c) Butanone | ✓ d) Methanol |
|-----------------|------------|-------------|---------------|

189) Which compound shows maximum hydrogen bonding with water?

|                             |                                    |                                |                                    |
|-----------------------------|------------------------------------|--------------------------------|------------------------------------|
| ✓ a) $\text{CH}_3\text{OH}$ | b) $\text{C}_2\text{H}_5\text{OH}$ | c) $\text{CH}_3\text{-O-CH}_3$ | d) $\text{C}_6\text{H}_5\text{OH}$ |
|-----------------------------|------------------------------------|--------------------------------|------------------------------------|

190) It is dangerous to work with liquid  $\text{C}_2\text{H}_2$  because .

|                            |                      |                          |                            |
|----------------------------|----------------------|--------------------------|----------------------------|
| a) It readily catches fire | ✓ b) It is explosive | c) It is highly volatile | d) It is not very reactive |
|----------------------------|----------------------|--------------------------|----------------------------|

191) The octane number of gasoline is improved by a process called .

|             |             |                |                  |
|-------------|-------------|----------------|------------------|
| a) Cracking | b) Knocking | ✓ c) Reforming | d) None of these |
|-------------|-------------|----------------|------------------|

192) Which is the radioactive halogen ?

|       |         |       |      |
|-------|---------|-------|------|
| a) Br | ✓ b) At | c) Cl | d) F |
|-------|---------|-------|------|

193) Which one is perchloric acid?

|                  |                    |                    |                      |
|------------------|--------------------|--------------------|----------------------|
| a) $\text{HClO}$ | b) $\text{HClO}_2$ | c) $\text{HClO}_3$ | ✓ d) $\text{HClO}_4$ |
|------------------|--------------------|--------------------|----------------------|

194) In Down's cell if moisture is present then , most likely products are

|                                  |   |                               |                           |
|----------------------------------|---|-------------------------------|---------------------------|
| ✓ a) $\text{Na}$ , $\text{Cl}_2$ | b) $\text{NaOH}$ , $\text{H}_2$ , $\text{Cl}_2$ | c) $\text{Na}$ , $\text{HCl}$ | d) $\text{H}_2\text{O}_2$ |
|----------------------------------|---|-------------------------------|---------------------------|

195) Phosphorous has the oxidation number +3 in .

|                        |                       |                         |                        |
|------------------------|-----------------------|-------------------------|------------------------|
| a) Metaphosphoric acid | ✓ b) Phosphorous acid | c) Orthophosphoric acid | d) Pyrophosphoric acid |
|------------------------|-----------------------|-------------------------|------------------------|

196) Hydrogen is placed at the top of elements in group \_\_\_\_\_ .

|       |       |         |       |
|-------|-------|---------|-------|
| a) HA | b) HB | ✓ c) IA | d) IB |
|-------|-------|---------|-------|

197) Carbon atom of carboxyl group is .

|                             |                                     |                               |                           |
|-----------------------------|-------------------------------------|-------------------------------|---------------------------|
| a) $\text{sp}^3$ hybridized | b) $\text{sp}^3\text{d}$ hybridized | ✓ c) $\text{sp}^2$ hybridized | d) $\text{sp}$ hybridized |
|-----------------------------|-------------------------------------|-------------------------------|---------------------------|

198) Bauxite is an ore of .

|      |         |       |       |
|------|---------|-------|-------|
| a) B | ✓ b) Al | c) Mg | d) Ca |
|------|---------|-------|-------|

199) Which is the least reactive of all the alkali metals ?

|       |       |        |       |
|-------|-------|--------|-------|
| a) Li | b) Na | ✓ c) K | d) Cs |
|-------|-------|--------|-------|

200) The reaction involving organic compound is \_\_\_\_\_

|           |         |               |                  |
|-----------|---------|---------------|------------------|
| ✓ a) Slow | b) Fast | c) Both A & B | d) None of these |
|-----------|---------|---------------|------------------|

201) Preparation of vegetable ghee involves.

|                 |                    |                  |                    |
|-----------------|--------------------|------------------|--------------------|
| a) Halogenation | ✓ b) Hydrogenation | c) Hydroxylation | d) Dehydrogenation |
|-----------------|--------------------|------------------|--------------------|

202) The term aromatic derived from Greek word aroma meaning .

|            |          |               |                  |
|------------|----------|---------------|------------------|
| a) Flavour | b) Smell | ✓ c) Fragrant | d) None of these |
|------------|----------|---------------|------------------|



203) In down cell  $\text{CaCl}_2$  is added to  $\text{N}_2\text{Cl}$  to

|                         |                          |                              |                             |
|-------------------------|--------------------------|------------------------------|-----------------------------|
| a) Increases solubility | b) Increase conductivity | c) Increase the dissociation | ✓d) Lower its melting point |
|-------------------------|--------------------------|------------------------------|-----------------------------|

204) The percentage of nitrogen in ammonia is .

|         |         |          |         |
|---------|---------|----------|---------|
| a) 46 % | b) 62 % | ✓c) 82 % | d) 33 % |
|---------|---------|----------|---------|

205) Which of the following compounds undergo an elimination reaction when treated with hot ethanolic potassium hydroxide ?

|  |   |   |   |
|--|---|---|---|
| a) $\text{Br} - \text{CH}_2 - \text{Br}$ | b) $\text{Br}_3\text{C} - \text{CBr}_3$ | c) $(\text{CH}_3)_2\text{C} = \text{CBr}_2$ | ✓d) $\text{CH}_3 - \text{CH}_2 - \text{Br}$ |
|--|---|---|---|

206) Electrolysis of aqueous solution of potassium acetate gives .

|                           |                           |                           |                            |
|---------------------------|---------------------------|---------------------------|----------------------------|
| a) $\text{C}_3\text{H}_8$ | b) $\text{C}_2\text{H}_2$ | c) $\text{C}_2\text{H}_4$ | ✓d) $\text{C}_2\text{H}_6$ |
|---------------------------|---------------------------|---------------------------|----------------------------|

207) Which of the following hydrogen halide is the weakest acid in solution?

|        |        |       |        |
|--------|--------|-------|--------|
| ✓a) HF | b) HBr | c) HI | d) HCl |
|--------|--------|-------|--------|

208) Which compound is more soluble in water

|                                     |                                    |                             |              |
|-------------------------------------|------------------------------------|-----------------------------|--------------|
| ✓a) $\text{C}_2\text{H}_5\text{OH}$ | b) $\text{C}_6\text{H}_5\text{OH}$ | c) $\text{CH}_3\text{COCH}$ | d) n-Hexanol |
|-------------------------------------|------------------------------------|-----------------------------|--------------|

209) Water is disinfected by a substance to avoid toxification.

|                    |          |                  |                  |
|--------------------|----------|------------------|------------------|
| a) $\text{KMnO}_4$ | b) Alums | ✓c) $\text{O}_3$ | d) $\text{Cl}_2$ |
|--------------------|----------|------------------|------------------|

210) Which phosphorous is most stable ?

|          |           |        |                  |
|----------|-----------|--------|------------------|
| a) White | ✓b) Black | c) Red | d) All are equal |
|----------|-----------|--------|------------------|

211) Which is the strongest acid?

|         |                    |                    |                     |
|---------|--------------------|--------------------|---------------------|
| a) HClO | b) $\text{HClO}_2$ | c) $\text{HClO}_3$ | ✓d) $\text{HClO}_4$ |
|---------|--------------------|--------------------|---------------------|

212) Benzene can be prepared by polymerization of .

|           |           |               |            |
|-----------|-----------|---------------|------------|
| a) Ethene | b) Ethane | ✓c) Acetylene | d) Propene |
|-----------|-----------|---------------|------------|

213) Halides are found in \_\_\_\_\_ and in salt lakes .

|              |          |          |                  |
|--------------|----------|----------|------------------|
| a) Salt mine | ✓b) Mine | c) Ocean | d) None of these |
|--------------|----------|----------|------------------|

214) Which electronic configuration corresponds to an element of group III -A of the periodic Table ?

|                                    |                       |   |                                   |
|------------------------------------|-----------------------|---|-----------------------------------|
| ✓a) $1s^2, 2s^2, 2s^6, 3s^2, 3s^1$ | b) $1s^2, 2s^2, 2p^6$ | c) $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 4s^6$ | d) $1s^2, 2s^2, 2s^6, 3s^2, 3s^3$ |
|------------------------------------|-----------------------|---|-----------------------------------|

215) Woody Raw Material for paper pulp is obtained from.

|           |             |            |               |
|-----------|-------------|------------|---------------|
| a) Cotton | b) Biogases | ✓c) Poplar | d) Rice straw |
|-----------|-------------|------------|---------------|

216) Which of the following is non metal ?

|       |       |       |       |
|-------|-------|-------|-------|
| ✓a) B | b) Al | c) Ga | d) In |
|-------|-------|-------|-------|

217) Element ( cs ) cesium show resemblance with .



|       |       |               |        |
|-------|-------|---------------|--------|
| a) Ca | b) Cr | c) Both A & B | ✓d) Fr |
|-------|-------|---------------|--------|

218) Which element is deposited at the cathode during the electrolysis of brine in Nelson's cell or diaphragm cell ?

|                    |       |                    |                   |
|--------------------|-------|--------------------|-------------------|
| ✓a) H <sub>2</sub> | b) Na | c) Cl <sub>2</sub> | d) O <sub>2</sub> |
|--------------------|-------|--------------------|-------------------|

219) The compound having molecular formula C<sub>6</sub>H<sub>14</sub> has chain isomers .

|      |      |       |      |
|------|------|-------|------|
| a) 6 | b) 4 | ✓c) 5 | d) 3 |
|------|------|-------|------|

220) Which of the following is soluble in water ?

|                    |                     |                     |                       |
|--------------------|---------------------|---------------------|-----------------------|
| a) Dioxoboric acid | ✓b) Boric anhydride | c) Trioxoboric acid | d) Sodium Dioxoborate |
|--------------------|---------------------|---------------------|-----------------------|

221) Which enzyme is not involved in fermentation of starch?

|           |            |              |             |
|-----------|------------|--------------|-------------|
| a) Zymase | ✓b) Urease | c) Invertase | d) Diastase |
|-----------|------------|--------------|-------------|

222) The main Pollutant of leather tanneries in the waste water is.

|         |                  |           |                   |
|---------|------------------|-----------|-------------------|
| a) Lead | ✓b) Chromium(VI) | c) Copper | d) Chromium (III) |
|---------|------------------|-----------|-------------------|

223) Which compound will have the maximum repulsion with water?

|                                   |                                     |                                     |                                     |
|-----------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| ✓a) C <sub>6</sub> H <sub>6</sub> | b) C <sub>2</sub> H <sub>5</sub> OH | c) C <sub>3</sub> H <sub>7</sub> OH | d) CH <sub>3</sub> OCH <sub>3</sub> |
|-----------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|

224) Alkyl halide can be prepared by the halogenation of \_\_\_\_\_

|            |           |           |                  |
|------------|-----------|-----------|------------------|
| ✓a) Alkane | b) Alkene | c) Alkyne | d) None of these |
|------------|-----------|-----------|------------------|

225) Which one of the following does not belong to alkaline earth metals ?

|       |       |       |        |
|-------|-------|-------|--------|
| a) Be | b) Ra | c) Ba | ✓d) Rn |
|-------|-------|-------|--------|

226) Orthoboric acid when heated to red hot gives.

|                     |                   |                   |                    |
|---------------------|-------------------|-------------------|--------------------|
| ✓a) Boric anhydride | b) Pyroboric acid | c) Metaboric acid | d) Tetraboric acid |
|---------------------|-------------------|-------------------|--------------------|

227) Both CH<sub>3</sub>COOH and CH<sub>3</sub>COOCH<sub>3</sub> show isomerism .

|             |          |              |                      |
|-------------|----------|--------------|----------------------|
| a) Position | b) Chain | c) Geometric | ✓d) Functional group |
|-------------|----------|--------------|----------------------|

228) Which is the strongest oxidizing agent in the following ?

|                   |                    |                    |                    |
|-------------------|--------------------|--------------------|--------------------|
| a) I <sub>2</sub> | b) Cl <sub>2</sub> | ✓c) F <sub>2</sub> | d) Br <sub>2</sub> |
|-------------------|--------------------|--------------------|--------------------|

229) Which one of the following statements about glucose and sucrose is incorrect?

|                              |                                 |                           |                            |
|------------------------------|---------------------------------|---------------------------|----------------------------|
| a) Both are soluble in water | b) Both are naturally occurring | c) Both are carbohydrates | ✓d) Both are disaccharides |
|------------------------------|---------------------------------|---------------------------|----------------------------|

230) The number of elements in fourth Period in modern Periodic table is .

|       |        |       |      |
|-------|--------|-------|------|
| a) 32 | ✓b) 18 | c) 10 | d) 8 |
|-------|--------|-------|------|

231) The brown gas formed, when metal reduces HNO<sub>3</sub> to

|                                  |                                  |                     |       |
|----------------------------------|----------------------------------|---------------------|-------|
| a) N <sub>2</sub> O <sub>5</sub> | b) N <sub>2</sub> O <sub>3</sub> | ✓c) NO <sub>2</sub> | d) NO |
|----------------------------------|----------------------------------|---------------------|-------|

232) Which one is ionic hydride ?

|         |                     |                    |                    |
|---------|---------------------|--------------------|--------------------|
| ✓a) NaH | b) AlH <sub>3</sub> | c) NH <sub>3</sub> | d) CH <sub>4</sub> |
|---------|---------------------|--------------------|--------------------|



233) A polymeric substance that is formed in the liquid state and then hardened to a rigid solid is called a

|          |             |            |                    |
|----------|-------------|------------|--------------------|
| a) Fibre | ✓b) Plastic | c) Varnish | d) Polyamide resin |
|----------|-------------|------------|--------------------|

234) Maximum number of unpaired electron are in cation.

|                     |                     |                     |                     |
|---------------------|---------------------|---------------------|---------------------|
| a) $\text{Ni}^{2+}$ | b) $\text{Co}^{2+}$ | c) $\text{Mn}^{2+}$ | d) $\text{Fe}^{2+}$ |
|---------------------|---------------------|---------------------|---------------------|

235) Sodium when dropped in water catches fire because .

|                  |   |                                  |   |
|------------------|---|----------------------------------|---|
| a) It is a metal | b) It is highly electropositive in nature | c) It has high electron affinity | ✓d) $\text{H}_2$ gas is evolved in the reaction which catches fire due to exothermic reaction |
|------------------|---|----------------------------------|---|

236) Mark the correct statement .

|   |  |   |   |
|---|--|---|---|
| ✓a) Metallic character increases down the group | b) Metallic character increases along a period | c) Metallic character decreases along a group | d) Metallic character remains the same down the group |
|---|--|---|---|

237) Which one is perchloric acid ?

|                  |                    |                    |                     |
|------------------|--------------------|--------------------|---------------------|
| a) $\text{HClO}$ | b) $\text{HClO}_2$ | c) $\text{HClO}_3$ | ✓d) $\text{HClO}_4$ |
|------------------|--------------------|--------------------|---------------------|

238) Nitric oxide is prepared by the action of dilute  $\text{HNO}_3$  on .

|       |        |       |       |
|-------|--------|-------|-------|
| a) Fe | ✓b) Cu | c) Zn | d) Sn |
|-------|--------|-------|-------|

239) Alcohol obtained by fermentation is only upto .

|         |          |         |         |
|---------|----------|---------|---------|
| a) 10 % | ✓b) 12 % | c) 20 % | d) 95 % |
|---------|----------|---------|---------|

240) The milk of magnesia is used for the treatment of.

|             |              |             |              |
|-------------|--------------|-------------|--------------|
| a) Basicity | b) Rancidity | ✓c) Acidity | d) Jaundance |
|-------------|--------------|-------------|--------------|

241) Out of all the elements of group VA, the highest ionization energy is possessed by.

|       |      |       |       |
|-------|------|-------|-------|
| ✓a) N | b) P | c) Sb | d) As |
|-------|------|-------|-------|

242) Out of all the elements of group VIA, the highest melting and boiling points is shown by the element

|        |       |      |       |
|--------|-------|------|-------|
| ✓a) Te | b) Se | c) S | d) Pb |
|--------|-------|------|-------|

243) The pH range of the acid rain is

|          |          |          |                 |
|----------|----------|----------|-----------------|
| a) 7-6.5 | b) 6.5-6 | c) 6-5.6 | ✓d) Less than 5 |
|----------|----------|----------|-----------------|

244) The temperature in the non-rotating chamber in the incineration of industrial and hazardous waste process has a range

|                   |                    |                  |                  |
|-------------------|--------------------|------------------|------------------|
| a) 900 to 1000° C | ✓b) 950 to 1300 °C | c) 250 to 500° C | d) 500 to 900 °C |
|-------------------|--------------------|------------------|------------------|

245) An element that has a high ionization energy and tend to be chemically inactive , would most likely to be ?

|                    |                         |                 |              |
|--------------------|-------------------------|-----------------|--------------|
| a) An alkali metal | b) A transition element | ✓c) A noble gas | d) A halogen |
|--------------------|-------------------------|-----------------|--------------|

246) The percentage of nitrogen by volume in air is .

|       |       |        |       |
|-------|-------|--------|-------|
| a) 98 | b) 88 | ✓c) 78 | d) 68 |
|-------|-------|--------|-------|



247) The reaction of acetic acid with sodium metal gives .

|       |                    |         |                    |
|-------|--------------------|---------|--------------------|
| a) CO | b) CO <sub>2</sub> | c) HCHO | ✓d) H <sub>2</sub> |
|-------|--------------------|---------|--------------------|

248) Which one of the following nitrogenous bases is not present in RNA

|             |            |              |           |
|-------------|------------|--------------|-----------|
| a) Cytosine | b) Adenine | ✓c) Thiamine | d) Uracil |
|-------------|------------|--------------|-----------|

249) The ease of dehydration of alcohol to produce alkene is .

|                                   |                                   |                                   |                                    |
|-----------------------------------|-----------------------------------|-----------------------------------|------------------------------------|
| a) Primary > Secondary > Tertiary | b) Secondary > Tertiary > Primary | c) Tertiary > Primary > Secondary | ✓d) Tertiary > Secondary > Primary |
|-----------------------------------|-----------------------------------|-----------------------------------|------------------------------------|

250) The element with \_\_\_\_\_ value of electronegativity exist as negative ion .

|            |          |                 |                  |
|------------|----------|-----------------|------------------|
| ✓a) Higher | b) Lower | c) Intermediate | d) None of these |
|------------|----------|-----------------|------------------|

251) Select from the following the one which is Alcohol.

|  |                                     |                         |   |
|--|-------------------------------------|-------------------------|---|
| ✓a) CH <sub>3</sub> CH <sub>2</sub> OH | b) CH <sub>3</sub> OCH <sub>3</sub> | c) CH <sub>3</sub> COOH | d) CH <sub>3</sub> .CH <sub>2</sub> .Br |
|--|-------------------------------------|-------------------------|---|

252) The second substituent in benzene would give rise to \_\_\_\_\_ isomeric products .

|        |        |           |         |
|--------|--------|-----------|---------|
| a) One | b) Two | ✓c) Three | d) Four |
|--------|--------|-----------|---------|

253) Carbon has tendency of linkage of identical atoms, which is called .

|               |                 |                |                  |
|---------------|-----------------|----------------|------------------|
| a) Catenation | b) Self linkage | ✓c) Both A & B | d) None of these |
|---------------|-----------------|----------------|------------------|

254) The catalytic oxidation of methane produces.

|                          |  |                                      |                          |
|--------------------------|--|--------------------------------------|--------------------------|
| a) CO + H <sub>2</sub> O | ✓b) CO <sub>2</sub> + H <sub>2</sub> O | c) C <sub>2</sub> + H <sub>2</sub> O | d) H <sub>3</sub> C - OH |
|--------------------------|--|--------------------------------------|--------------------------|

255) Cannizzaro's reaction is not given by

|                 |                 |                  |                          |
|-----------------|-----------------|------------------|--------------------------|
| a) Formaldehyde | b) Benzaldehyde | ✓c) Acetaldehyde | d) Trimethylacetaldehyde |
|-----------------|-----------------|------------------|--------------------------|

256) When Al is added to KOH solution .

|                              |                                 |                               |                       |
|------------------------------|---------------------------------|-------------------------------|-----------------------|
| a) O <sub>2</sub> is evolved | b) H <sub>2</sub> O is produced | ✓c) H <sub>2</sub> is evolved | d) No reaction occurs |
|------------------------------|---------------------------------|-------------------------------|-----------------------|

257) In the manufacturing of plastic such as bakelite, which of the following substance is used ?

|                |                  |                |                 |
|----------------|------------------|----------------|-----------------|
| a) Formic Acid | ✓b) Formaldehyde | c) Acetic Acid | d) Acetaldehyde |
|----------------|------------------|----------------|-----------------|

258) Lindlar's catalyst is .

|                         |                                 |                                     |                                 |
|-------------------------|---------------------------------|-------------------------------------|---------------------------------|
| a) Ba/PbSO <sub>4</sub> | b) Pd/PbSO <sub>4</sub> Quinone | ✓c) Quinone<br>Pd/PbSO <sub>4</sub> | d) Pb/BaSO <sub>4</sub> Quinone |
|-------------------------|---------------------------------|-------------------------------------|---------------------------------|

259) Halides are soluble in \_\_\_\_\_ .

|            |           |             |                  |
|------------|-----------|-------------|------------------|
| a) Alcohol | ✓b) Water | c) Nitrogen | d) None of these |
|------------|-----------|-------------|------------------|

260) Which statement is incorrect ?

|  |   |                                      |                                       |
|--|---|--------------------------------------|---------------------------------------|
| a) All the metals are good conductors of electricity | b) All the metals are good conductors of heat | c) All the metals form positive ions | ✓d) All the metals form acidic oxides |
|--|---|--------------------------------------|---------------------------------------|

261) The carbon atom of a carbonyl group is



|                  |                               |                                |                  |
|------------------|-------------------------------|--------------------------------|------------------|
| a) sp hybridized | b) sp <sup>3</sup> hybridized | ✓c) sp <sup>2</sup> hybridized | d) None of these |
|------------------|-------------------------------|--------------------------------|------------------|

262) When I-chloropropane is reacted with alcoholic KOH, the product obtained is .

|            |             |            |           |
|------------|-------------|------------|-----------|
| a) Propane | ✓b) Propene | c) Propyne | d) Butane |
|------------|-------------|------------|-----------|

263) The  $\pi$  - electrons of benzene are not readily available for weak electrophiles because it has .

|                                  |                               |                                 |                |
|----------------------------------|-------------------------------|---------------------------------|----------------|
| a) sp <sup>2</sup> hybridization | b) Planar hexagonal structure | ✓c) Delocalization of electrons | d) Conjugation |
|----------------------------------|-------------------------------|---------------------------------|----------------|

264) When Alcohol reacts with sodium metal, which gas is liberated .

|       |                    |                    |          |
|-------|--------------------|--------------------|----------|
| a) CO | b) CO <sub>2</sub> | ✓c) H <sub>2</sub> | d) Steam |
|-------|--------------------|--------------------|----------|

265) Which of the following halogens is greenish yellow gas ?

|                    |                     |                   |                   |
|--------------------|---------------------|-------------------|-------------------|
| a) Br <sub>2</sub> | ✓b) Cl <sub>2</sub> | c) F <sub>2</sub> | d) I <sub>2</sub> |
|--------------------|---------------------|-------------------|-------------------|

266) CH<sub>3</sub> - CH<sub>2</sub> - CH<sub>2</sub> - CH<sub>2</sub> - Cl on reaction with alcoholic KOH gives

|              |             |              |              |
|--------------|-------------|--------------|--------------|
| a) 2-Butanol | b) 2-Butene | ✓c) 1-Butene | d) 2-Butanol |
|--------------|-------------|--------------|--------------|

267) Oxidation of ethyl benzene in presence of KMnO<sub>4</sub> gives .

|           |                   |                  |                     |
|-----------|-------------------|------------------|---------------------|
| a) Phenol | b) Benzyl alcohol | ✓c) Benzoic acid | d) Maleic anhydride |
|-----------|-------------------|------------------|---------------------|

268) In which of these processes are small organic molecules made into macromolecules.

|  |   |                                  |                               |
|--|---|----------------------------------|-------------------------------|
| a) The cracking of petroleum fractions | b) The fractional distillation of crude oil | ✓c) The polymerization of ethene | d) The hydrolysis of proteins |
|--|---|----------------------------------|-------------------------------|

269) In elimination reaction of alkyl halide, the site more susceptible for the nucleophilic attack is .

|                      |                        |                     |                        |
|----------------------|------------------------|---------------------|------------------------|
| a) $\alpha$ - carbon | b) $\alpha$ - hydrogen | c) $\beta$ - carbon | ✓d) $\beta$ - hydrogen |
|----------------------|------------------------|---------------------|------------------------|

270) Substituted phenyl group are called .

|                |                   |                |                  |
|----------------|-------------------|----------------|------------------|
| a) Alkyl group | b) Carboxyl group | ✓c) Aryl group | d) None of these |
|----------------|-------------------|----------------|------------------|

271) Newspaper can be recycled again and again by how many times?

|      |      |      |       |
|------|------|------|-------|
| a) 2 | b) 4 | c) 3 | ✓d) 5 |
|------|------|------|-------|

272) Nelson's cell is used to prepare

|          |                                    |             |         |
|----------|------------------------------------|-------------|---------|
| ✓a) NaOH | b) Na <sub>2</sub> CO <sub>3</sub> | c) Na metal | d) NaCl |
|----------|------------------------------------|-------------|---------|

273) Best reagent for preparing a chloroalkane from alcohol is .

|                       |                           |                     |                                      |
|-----------------------|---------------------------|---------------------|--------------------------------------|
| ✓a) SOCl <sub>2</sub> | b) ZnCl <sub>2</sub> /HCl | c) PCl <sub>3</sub> | d) Cl <sub>2</sub> /CCl <sub>4</sub> |
|-----------------------|---------------------------|---------------------|--------------------------------------|

274) Which of the following is not a fatty acid?

|                   |                   |                |                  |
|-------------------|-------------------|----------------|------------------|
| a) Propanoic acid | ✓b) Phthalic acid | c) Acetic acid | d) Butanoic acid |
|-------------------|-------------------|----------------|------------------|

275) The addition of unsymmetrical reagent to an unsymmetrical alkene is in accordance with the rule

|                |                                |                        |                     |
|----------------|--------------------------------|------------------------|---------------------|
| a) Hund's rule | b) Pauli's Exclusion Principle | ✓c) Markownikov's rule | d) Aufbau Principle |
|----------------|--------------------------------|------------------------|---------------------|



276) Co-ordination number of Pt in  $[\text{Pt Cl}(\text{NO}_2)(\text{NH}_3)_4]$  is

|       |      |      |       |
|-------|------|------|-------|
| a) 2- | b) 4 | c) 1 | ✓d) 6 |
|-------|------|------|-------|

277) Which one is neutral amino acid?

|           |              |                  |            |
|-----------|--------------|------------------|------------|
| a) Lysine | b) Histidine | c) Glutamic acid | ✓d) Valine |
|-----------|--------------|------------------|------------|

278) Nylon 6,6 is obtained by the reaction of hexamethylene diamine with.

|                |                 |                   |                    |
|----------------|-----------------|-------------------|--------------------|
| a) Acetic acid | ✓b) Adipic acid | c) Vinyl chloride | d) Acetyl chloride |
|----------------|-----------------|-------------------|--------------------|

279) The solution of which acid is used for seasoning of food.

|                |                 |                 |                  |
|----------------|-----------------|-----------------|------------------|
| a) Formic acid | ✓b) Acetic acid | c) Benzoic acid | d) Butanoic acid |
|----------------|-----------------|-----------------|------------------|

280) The reactivity of alkene is due to \_\_\_\_\_ and availability of  $\pi$  electron for electrophilic reaction .

|                |                  |               |                  |
|----------------|------------------|---------------|------------------|
| ✓a) $\pi$ bond | b) Covalent bond | c) Ionic bond | d) None of these |
|----------------|------------------|---------------|------------------|

281) Which one has yellow or orange crystalline ppt ?

|                      |                  |              |                                |
|----------------------|------------------|--------------|--------------------------------|
| a) Acetone hydrazone | b) Ethanal oxide | ✓c) 2,4-DNPH | d) Bisulphite addition product |
|----------------------|------------------|--------------|--------------------------------|

282) Hard water contains.

|                     |                           |                          |                   |
|---------------------|---------------------------|--------------------------|-------------------|
| ✓a) Ca and Mg salts | b) Carbonates of Na and K | c) Chlorides of Na and K | d) Sulphate of Al |
|---------------------|---------------------------|--------------------------|-------------------|

283) Which of the following reactions involves displacement of OH group of the carboxylic acids ?

|   |  |   |   |
|---|--|---|---|
| a) $\text{RCOOH} + \text{Na} \rightarrow$ | b) $\text{RCOOH} + \text{NaHCO}_3 \rightarrow$ | c) $\text{RCOOH} + \text{NaOH} \rightarrow$ | ✓d) $\text{RCOOH} + \text{PCl}_5 \rightarrow$ |
|---|--|---|---|

284) Nitrous oxide is prepared in the laboratory

|  |                    |                             |   |
|--|--------------------|-----------------------------|---|
| a) By combination of $\text{N}_2$ and $\text{O}_2$ | b) Reduction of NO | c) Reduction of Nitric Acid | ✓d) Thermal decomposition of $\text{NH}_4\text{NO}_3$ |
|--|--------------------|-----------------------------|---|

285) When methane reacts with  $\text{Cl}_2$  in the presence of diffused light the products obtained are.

|                    |                              |                                      |                  |
|--------------------|------------------------------|--------------------------------------|------------------|
| a) Chloroform only | b) Carbon tetrachloride only | c) Chloromethane and dichloromethane | ✓d) All of these |
|--------------------|------------------------------|--------------------------------------|------------------|

286) Which element is deposited at the cathode during the electrolysis of brine in diaphragm cell?

|                  |       |       |       |
|------------------|-------|-------|-------|
| ✓a) $\text{H}_2$ | b) Ba | c) Ra | d) Rn |
|------------------|-------|-------|-------|

287) Which of the following elements is most metallic ?

|       |      |        |       |
|-------|------|--------|-------|
| a) As | b) P | ✓c) Bi | d) Sb |
|-------|------|--------|-------|

288) The compounds which contain an alcohol group as well as an aldehydic group are called .

|             |            |              |            |
|-------------|------------|--------------|------------|
| a) Alkanols | ✓b) Aldols | c) Aldehydes | d) Sterols |
|-------------|------------|--------------|------------|

289) The most likely product of addition of H - Cl to 2-methyl-2-butene is .

|                                   |                                   |                                    |                       |
|-----------------------------------|-----------------------------------|------------------------------------|-----------------------|
| a) 3 - Chloro - 2 - methyl butane | b) 1 - Chloro - 2 - methyl butane | ✓c) 2 - Chloro - 2 - methyl butane | d) 3 - Chloro pentane |
|-----------------------------------|-----------------------------------|------------------------------------|-----------------------|

290) The composition of aqua regia ( by volume ) is .



|                               |                              |                              |                              |
|-------------------------------|------------------------------|------------------------------|------------------------------|
| ✓a) 1 HNO <sub>3</sub> . 3HCl | b) 2 HNO <sub>3</sub> . 2HCl | c) 2 HNO <sub>3</sub> . 1HCl | d) 3 HNO <sub>3</sub> . 1HCl |
|-------------------------------|------------------------------|------------------------------|------------------------------|

291) The dehydration of tertiary alcohols is carried out with .

|   |  |  |  |
|---|--|--|--|
| ✓a) 20 % H <sub>2</sub> SO <sub>4</sub> | b) 35 % H <sub>2</sub> SO <sub>4</sub> | c) 30 % H <sub>2</sub> SO <sub>4</sub> | d) 25 % H <sub>2</sub> SO <sub>4</sub> |
|---|--|--|--|

292) Zn<sup>+2</sup> salts are colourless due to .

|                               |                               |                                   |                                    |
|-------------------------------|-------------------------------|-----------------------------------|------------------------------------|
| ✓a) No unpaired d - electrons | b) All d - orbitals are empty | c) All d - electrons are unpaired | d) Two d - orbitals are hybridized |
|-------------------------------|-------------------------------|-----------------------------------|------------------------------------|

293) Which of the following compounds will not give iodoform test on treatment with I<sub>2</sub>/NaOH:

|                 |            |             |                 |
|-----------------|------------|-------------|-----------------|
| a) Acetaldehyde | b) Acetone | c) Butanone | ✓d) 3-Pentanone |
|-----------------|------------|-------------|-----------------|

294) Which of these polymers is a synthetic polymer?

|               |           |              |               |
|---------------|-----------|--------------|---------------|
| a) Animal fat | b) Starch | c) Cellulose | ✓d) Polyester |
|---------------|-----------|--------------|---------------|

295) Which of the following sulphates is not soluble in water ?

|                    |                       |                  |                     |
|--------------------|-----------------------|------------------|---------------------|
| a) Sodium sulphate | b) Potassium sulphate | c) Zinc sulphate | ✓d) Barium sulphate |
|--------------------|-----------------------|------------------|---------------------|

296) Which compound is insoluble in water ?

|             |                  |                |                  |
|-------------|------------------|----------------|------------------|
| ✓a) Benzene | b) Ethyl alcohol | c) Acetic acid | d) None of these |
|-------------|------------------|----------------|------------------|

297) Which one is a disaccharide?

|            |             |             |              |
|------------|-------------|-------------|--------------|
| a) Glucose | ✓b) Sucrose | c) Fructose | d) Cellulose |
|------------|-------------|-------------|--------------|

298) Which of these polymers is an addition polymer?

|              |                 |             |                |
|--------------|-----------------|-------------|----------------|
| a) Nylon-6,6 | ✓b) Polystyrene | c) Terylene | d) Epoxy resin |
|--------------|-----------------|-------------|----------------|

299) Which of the gas cannot be dried over conc. H<sub>2</sub>SO<sub>4</sub> ?

|                    |                   |                     |                   |
|--------------------|-------------------|---------------------|-------------------|
| a) SO <sub>2</sub> | b) N <sub>2</sub> | ✓c) NH <sub>3</sub> | d) H <sub>2</sub> |
|--------------------|-------------------|---------------------|-------------------|

300) Which element form an ion with charge +3 ?

|              |               |           |            |
|--------------|---------------|-----------|------------|
| a) Beryllium | ✓b) Aluminium | c) Carbon | d) Silicon |
|--------------|---------------|-----------|------------|

301) Which one of the following is wrong statement about H<sub>2</sub>SO<sub>4</sub> ?

|                       |                    |                   |                    |
|-----------------------|--------------------|-------------------|--------------------|
| a) Sulphonating agent | ✓b) Reducing agent | c) Highly viscous | d) Oxidizing agent |
|-----------------------|--------------------|-------------------|--------------------|

302) Tincal is a mineral of.

|       |      |       |       |
|-------|------|-------|-------|
| a) Al | b) C | c) Si | ✓d) B |
|-------|------|-------|-------|

303) The length of rotary Kiln in manufacture of cement is .

|                 |                 |                  |                 |
|-----------------|-----------------|------------------|-----------------|
| a) 100 - 300 ft | b) 100 - 200 ft | ✓c) 300 - 500 ft | d) 400 - 600 ft |
|-----------------|-----------------|------------------|-----------------|

304) 5<sup>th</sup> period contains total number of elements .

|       |       |        |       |
|-------|-------|--------|-------|
| a) 10 | b) 32 | ✓c) 18 | d) 14 |
|-------|-------|--------|-------|

305) Which compound is the most reactive ?

|            |            |           |           |
|------------|------------|-----------|-----------|
| a) Benzene | ✓b) Ethene | c) Ethane | d) Ethyne |
|------------|------------|-----------|-----------|



306) Amphoteric oxide is formed by :

|       |       |        |       |
|-------|-------|--------|-------|
| a) Ca | b) Fe | ✓c) Zn | d) Cu |
|-------|-------|--------|-------|

307) Nitration of Nitrobenzene at 95°C will give .

|                       |                       |                        |                         |
|-----------------------|-----------------------|------------------------|-------------------------|
| a) 1,2 dinitrobenzene | b) 1,4 dinitrobenzene | ✓c) 1,3 dinitrobenzene | d) 1,2,6 dinitrobenzene |
|-----------------------|-----------------------|------------------------|-------------------------|

308) Aldehydes and Ketones can be differentiated from each other by using .

|                                |              |                   |                           |
|--------------------------------|--------------|-------------------|---------------------------|
| a) 2,4 dinitrophenyl hydrazine | b) Hydrazine | c) Hydroxyl amine | ✓d) Fehling solution test |
|--------------------------------|--------------|-------------------|---------------------------|

309) Halogen exist as discrete \_\_\_\_\_ molecule .

|              |              |               |                  |
|--------------|--------------|---------------|------------------|
| a) Triatomic | ✓b) Diatomic | c) Monoatomic | d) None of these |
|--------------|--------------|---------------|------------------|

310) Molecular formula of benzyl chloride is .

|                                       |  |                                       |   |
|---------------------------------------|--|---------------------------------------|---|
| a) $\text{H}_5\text{C}_6\text{CCl}_3$ | ✓b) $\text{H}_5\text{C}_6\text{CH}_2\text{Cl}$ | c) $\text{H}_5\text{C}_6\text{HCl}_3$ | d) $\text{H}_5\text{C}_6\text{CH}_2 \cdot \text{CH}_2\text{Cl}$ |
|---------------------------------------|--|---------------------------------------|---|

311) In primary alkyl halides, the halogen atom is attached to a carbon which is further attached to how many carbon atoms.

|         |        |          |         |
|---------|--------|----------|---------|
| ✓a) One | b) Two | c) Three | d) Four |
|---------|--------|----------|---------|

312) Which of the following enzymes brings about the hydrolysis of fats?

|           |            |           |            |
|-----------|------------|-----------|------------|
| a) Urease | b) Maltase | c) Zymase | ✓d) Lipase |
|-----------|------------|-----------|------------|

313) Ketonic group are present in natural compound .

|            |              |                |                  |
|------------|--------------|----------------|------------------|
| a) Camphor | b) Methanone | ✓c) Both A & B | d) None of these |
|------------|--------------|----------------|------------------|

314) Co-ordination number of Cu in  $[\text{Cu}(\text{NH}_3)_4]\text{SO}_4$  is

|         |        |          |        |
|---------|--------|----------|--------|
| a) Zero | b) Two | ✓c) Four | d) Six |
|---------|--------|----------|--------|

315) Ecosystem is smaller unit of

|                |                |               |               |
|----------------|----------------|---------------|---------------|
| a) Lithosphere | b) Hydrosphere | c) Atmosphere | ✓d) Biosphere |
|----------------|----------------|---------------|---------------|

316) Thickness of atmosphere is about how much Kilometer above the surface of earth.

|           |             |              |              |
|-----------|-------------|--------------|--------------|
| a) 100 km | ✓b) 1000 km | c) 10,000 km | d) Unlimited |
|-----------|-------------|--------------|--------------|

317) The percentage of gypsum in cement is .

|         |         |        |        |
|---------|---------|--------|--------|
| ✓a) 2 % | b) 10 % | c) 3 % | d) 5 % |
|---------|---------|--------|--------|

318) Benzene is highly \_\_\_\_\_ compound and at the same time it is very stable molecule .

|              |                 |            |                  |
|--------------|-----------------|------------|------------------|
| a) Saturated | ✓b) Unsaturated | c) Organic | d) None of these |
|--------------|-----------------|------------|------------------|

319) Which one of the following is used in cosmetics?

|          |             |                    |                      |
|----------|-------------|--------------------|----------------------|
| ✓a) Talc | b) Asbestos | c) Sodium sulphate | d) Aluminum sulphate |
|----------|-------------|--------------------|----------------------|

320) The first product of oxidation of Primary alcohol is .

|              |          |                    |           |
|--------------|----------|--------------------|-----------|
| ✓a) Aldehyde | b) Ester | c) Carboxylic acid | d) Ketone |
|--------------|----------|--------------------|-----------|

321) In which of these processes are small organic molecules made into macromolecules



|  |   |                                  |                               |
|--|---|----------------------------------|-------------------------------|
| a) The cracking of petroleum fractions | b) The fractional distillation of crude oil | ✓c) The polymerization of ethene | d) The hydrolysis of proteins |
|--|---|----------------------------------|-------------------------------|

322) The second electron affinity of oxygen is .

|                               |                                |                               |                              |
|-------------------------------|--------------------------------|-------------------------------|------------------------------|
| a) $-141 \text{ kJ mol}^{-1}$ | ✓b) $+780 \text{ kJ mol}^{-1}$ | c) $-337 \text{ kJ mol}^{-1}$ | d) $+29 \text{ kJ mol}^{-1}$ |
|-------------------------------|--------------------------------|-------------------------------|------------------------------|

323) The word alkali is derived from which language ?

|            |          |           |           |
|------------|----------|-----------|-----------|
| ✓a) Arabic | b) Greek | c) French | d) German |
|------------|----------|-----------|-----------|

324) Mark the correct statement .

|  |  |   |   |
|--|--|---|---|
| a) All the lanthanides are present in the same group | b) All halogens are present in the same period | ✓c) All the alkali metals are present in the same group | d) All the noble gases are present in the same period |
|--|--|---|---|

325) Formula of Epsom salt is .

|   |                    |                    |                                    |
|---|--------------------|--------------------|------------------------------------|
| ✓a) $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$ | b) $\text{MgSO}_4$ | c) $\text{MgCO}_3$ | d) $\text{CaMg}_3(\text{SiO}_3)_4$ |
|---|--------------------|--------------------|------------------------------------|

326) b-b'- dichloroethyl sulphide is commonly known as

|                 |                 |                 |            |
|-----------------|-----------------|-----------------|------------|
| ✓a) Mustard gas | b) Phosgene gas | c) Laughing gas | d) Bio-gas |
|-----------------|-----------------|-----------------|------------|

327) When methane reacts with  $\text{Cl}_2$  in the presence of diffused sunlight the products obtained are:

|                    |                                      |                              |                        |
|--------------------|--------------------------------------|------------------------------|------------------------|
| a) Chloroform only | b) Chloromethane and dichloromethane | c) Carbon tetrachloride only | ✓d) Mixture of a, b, c |
|--------------------|--------------------------------------|------------------------------|------------------------|

328) Secondary alkyl halide give reactions by following mechanism .

|                           |                           |   |                            |
|---------------------------|---------------------------|---|----------------------------|
| a) $\text{S}_{\text{N}}1$ | b) $\text{S}_{\text{N}}2$ | ✓c) $\text{S}_{\text{N}}1$ and $\text{S}_{\text{N}}2$ | d) Depend upon nucleophile |
|---------------------------|---------------------------|---|----------------------------|

329) During  $\text{S}_{\text{N}}2$  mechanism carbon atom changes its hybridization from .

|  |   |  |  |
|--|---|--|--|
| a) $\text{sp} \rightarrow \text{sp}^2$ | ✓b) $\text{sp}^2 \rightarrow \text{sp}^3$ | c) $\text{sp}^3 \rightarrow \text{sp}^2$ | d) $\text{sp}^3 \rightarrow \text{sp}$ |
|--|---|--|--|

330) Which of the following is an example of alkanal ?

|                  |            |            |           |
|------------------|------------|------------|-----------|
| ✓a) Acetaldehyde | b) Alcohol | c) Acetone | d) Phenol |
|------------------|------------|------------|-----------|

331) Which of the following element is present in all proteins?

|       |       |       |       |
|-------|-------|-------|-------|
| a) Cl | b) Cu | ✓c) N | d) Al |
|-------|-------|-------|-------|

332) General name of mineral  $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$  is

|           |             |            |                |
|-----------|-------------|------------|----------------|
| a) Gypsum | b) Dolomite | c) Calcite | ✓d) Epsom salt |
|-----------|-------------|------------|----------------|

333) Rectified spirit contains alcohol about.

|        |        |        |         |
|--------|--------|--------|---------|
| a) 80% | b) 85% | c) 90% | ✓d) 95% |
|--------|--------|--------|---------|

334) IUPAC system provides different names for more than \_\_\_\_\_ known organic compounds .

|              |              |               |              |
|--------------|--------------|---------------|--------------|
| a) 6 million | b) 6 billion | ✓c) 7 million | d) 6 billion |
|--------------|--------------|---------------|--------------|

335) The bond angle between any two Hybridized Orbitals is of .

|                |                  |                 |                  |
|----------------|------------------|-----------------|------------------|
| a) $180^\circ$ | b) $109.5^\circ$ | ✓c) $120^\circ$ | d) $107.5^\circ$ |
|----------------|------------------|-----------------|------------------|



336) The process used to improve quality of gasoline is called.

|                     |               |                |                   |
|---------------------|---------------|----------------|-------------------|
| a) Thermal Cracking | ✓b) Reforming | c) Combination | d) Steam Cracking |
|---------------------|---------------|----------------|-------------------|

337) Which of the following is an addition polymer?

|              |                 |              |             |
|--------------|-----------------|--------------|-------------|
| a) Polyester | ✓b) Polystyrene | c) Nylon 6,6 | d) Terylene |
|--------------|-----------------|--------------|-------------|

338) Which of the following is used for the manufacturing of polyvinyl chloride ?

|             |              |            |           |
|-------------|--------------|------------|-----------|
| a) Ethylene | b) Propylene | ✓c) Ethyne | d) Ethane |
|-------------|--------------|------------|-----------|

339) The number of sigma and Pi bond in 1 - butene 3 - yne are .

|                       |                        |                       |                       |
|-----------------------|------------------------|-----------------------|-----------------------|
| a) 8 - sigma and 2 Pi | ✓b) 7 - sigma and 3 Pi | c) 5 - sigma and 5 Pi | d) 6 - sigma and 2 Pi |
|-----------------------|------------------------|-----------------------|-----------------------|

340) Symmetrical alkanes are prepared by .

|                     |                       |                   |                |
|---------------------|-----------------------|-------------------|----------------|
| a) Kolbe's reaction | b) Clemensen reaction | c) Wurtz reaction | ✓d) Both A & B |
|---------------------|-----------------------|-------------------|----------------|

341) The total number of transition element is.

|       |       |       |        |
|-------|-------|-------|--------|
| a) 10 | b) 14 | c) 40 | ✓d) 58 |
|-------|-------|-------|--------|

342) In \_\_\_\_\_ both hydrogen of water are replaced by alkyl or phenyl group .

|            |           |           |                  |
|------------|-----------|-----------|------------------|
| a) Alcohol | b) Phenol | ✓c) Ether | d) None of these |
|------------|-----------|-----------|------------------|

343) Crboxylic acids are dehydrated on heating strongly in the presence of.

|                            |                            |                                  |                            |
|----------------------------|----------------------------|----------------------------------|----------------------------|
| a) $\text{Al}_2\text{O}_3$ | ✓b) $\text{P}_2\text{O}_5$ | c) Conc. $\text{H}_2\text{SO}_4$ | d) $\text{Fe}_2\text{O}_3$ |
|----------------------------|----------------------------|----------------------------------|----------------------------|

344) Which of the following halogens is solid at room temperature ?

|                  |                  |                 |                  |
|------------------|------------------|-----------------|------------------|
| ✓a) $\text{I}_2$ | b) $\text{Br}_2$ | c) $\text{F}_2$ | d) $\text{Cl}_2$ |
|------------------|------------------|-----------------|------------------|

345) Which is a good leaving group ?

|                  |                  |                  |                    |
|------------------|------------------|------------------|--------------------|
| ✓a) $\text{I}^-$ | b) $\text{OH}^-$ | c) $\text{RO}^-$ | d) $\text{NH}_2^-$ |
|------------------|------------------|------------------|--------------------|

346) In electrolysis of alumina , cryolite is added .

|  |                                  |  |                                    |
|--|----------------------------------|--|------------------------------------|
| ✓a) To decrease the M.P of $\text{Al}_2\text{O}_3$ | b) To minimize the anodic effect | c) To increase electrical conductivity | d) To remove impurity form alumina |
|--|----------------------------------|--|------------------------------------|

347) Homologues differ from each other by .

|             |                        |                         |                        |
|-------------|------------------------|-------------------------|------------------------|
| a) CH group | b) $\text{CH}_3$ group | ✓c) $\text{CH}_2$ group | d) $\text{CH}_4$ group |
|-------------|------------------------|-------------------------|------------------------|

348) Which one of the following enzymes brings about the hydrolysis of fats?

|           |            |           |            |
|-----------|------------|-----------|------------|
| a) Urease | b) Maltase | c) Zymase | ✓d) Lipase |
|-----------|------------|-----------|------------|

349) Which is more acidic oxide in the following .

|                 |                            |                   |                             |
|-----------------|----------------------------|-------------------|-----------------------------|
| a) $\text{MnO}$ | b) $\text{Mn}_2\text{O}_3$ | c) $\text{MnO}_2$ | ✓d) $\text{Mn}_2\text{O}_7$ |
|-----------------|----------------------------|-------------------|-----------------------------|

350) Which one is not property or uses of mustard gas ?

|                                      |                        |                      |                      |
|--------------------------------------|------------------------|----------------------|----------------------|
| a) Used in 1 <sup>st</sup> world war | b) High boiling liquid | c) Powerful vesicant | ✓d) High boiling gas |
|--------------------------------------|------------------------|----------------------|----------------------|

351) Which of the following is not an electrophile ?



|                  |                    |                    |                   |
|------------------|--------------------|--------------------|-------------------|
| a) $\text{BF}_3$ | b) $\text{AlCl}_3$ | c) $\text{ZnCl}_2$ | ✓d) $\text{NH}_3$ |
|------------------|--------------------|--------------------|-------------------|

352) Ethanol is also used in the \_\_\_\_\_ of specimen.

|                |                  |               |                  |
|----------------|------------------|---------------|------------------|
| a) Preparation | ✓b) Preservation | c) Both A & B | d) None of these |
|----------------|------------------|---------------|------------------|

353) Vital force theory was rejected by .

|          |                      |           |                       |
|----------|----------------------|-----------|-----------------------|
| a) Lewis | ✓b) Friedrich Wohler | c) Bohr's | d) Greek philosophers |
|----------|----------------------|-----------|-----------------------|

354) Oxidation state of Cu in  $\text{K}_2[\text{Cu}(\text{CN})_4]$  in.

|       |       |        |       |
|-------|-------|--------|-------|
| a) +4 | b) +3 | ✓c) +2 | d) +6 |
|-------|-------|--------|-------|

355) Which of the following hydrogen halide is the weakest acid in solution?

|        |        |       |        |
|--------|--------|-------|--------|
| ✓a) HF | b) HBr | c) HI | d) HCl |
|--------|--------|-------|--------|

356) Which is the most important by product in the manufacturing of NaOH ?

|                             |                   |        |                            |
|-----------------------------|-------------------|--------|----------------------------|
| a) $\text{Na}_2\text{CO}_3$ | ✓b) $\text{Cl}_2$ | c) KOH | d) $\text{K}_2\text{CO}_3$ |
|-----------------------------|-------------------|--------|----------------------------|

357) Which acid has highest boiling point ?

|        |        |        |       |
|--------|--------|--------|-------|
| ✓a) HF | b) HBr | c) HCl | d) HI |
|--------|--------|--------|-------|

358) Which of the following is typical transition element.

|       |        |       |      |
|-------|--------|-------|------|
| a) Sc | ✓b) Co | c) Ra | d) Y |
|-------|--------|-------|------|

359) An element that has a high ionization energy and tend to be chemically inactive, would most likely to be.

|                    |                         |                 |              |
|--------------------|-------------------------|-----------------|--------------|
| a) An alkali metal | b) A transition element | ✓c) A noble gas | d) A halogen |
|--------------------|-------------------------|-----------------|--------------|

360) A carbocation is an organic ion having .

|                     |                    |                                      |                  |
|---------------------|--------------------|--------------------------------------|------------------|
| ✓a) Positive charge | b) Negative charge | c) Both Positive and negative charge | d) None of these |
|---------------------|--------------------|--------------------------------------|------------------|

361) China wares are made from a mixture of Kaolin , bone ash and .

|             |             |             |          |
|-------------|-------------|-------------|----------|
| a) Litharge | b) Asbestos | c) Feldspar | ✓d) Talc |
|-------------|-------------|-------------|----------|

362) Which of the following reagents is composed of ammoniacal silver nitrate ?

|                        |                      |                     |                   |
|------------------------|----------------------|---------------------|-------------------|
| a) Benedict's Solution | ✓b) Tollen's Reagent | c) Fehling Solution | d) Molish Reagent |
|------------------------|----------------------|---------------------|-------------------|

363) Sabatier-Sendern's reaction can be used to prepare .

|           |             |            |                        |
|-----------|-------------|------------|------------------------|
| a) Alkyne | ✓b) Alkanes | c) Alkenes | d) Alkenes and Alkynes |
|-----------|-------------|------------|------------------------|

364)  $\text{SO}_3$  is not absorbed in water directly to form  $\text{H}_2\text{SO}_4$  because

|  |                                |  |   |
|--|--------------------------------|--|---|
| a) The reaction does not go to completion. | b) The reaction is quite slow. | ✓c) The reaction is highly exothermic. | d) $\text{SO}_3$ is insoluble in water. |
|--|--------------------------------|--|---|

365) Acetic Acid is obtained when .

|                         |                         |                        |                          |
|-------------------------|-------------------------|------------------------|--------------------------|
| a) Methanol is oxidized | ✓b) Ethanol is oxidized | c) Methanol is reduced | d) Methanol is fermented |
|-------------------------|-------------------------|------------------------|--------------------------|

366) A single chlorine free radical can destroy how many ozone molecules?



|        |             |           |       |
|--------|-------------|-----------|-------|
| a) 100 | ✓b) 100,000 | c) 100,00 | d) 10 |
|--------|-------------|-----------|-------|

367) Which following derivative can not be prepared directly from acetic acid.

|               |                    |                     |                  |
|---------------|--------------------|---------------------|------------------|
| ✓a) Acetamide | b) Acetyl chloride | c) Acetic anyhdride | d) Ethyl acetate |
|---------------|--------------------|---------------------|------------------|

368) The elements placed on the extreme right of the periodic table are .

|                        |                  |               |           |
|------------------------|------------------|---------------|-----------|
| a) Transition elements | ✓b) Non - metals | c) Metalloids | d) Metals |
|------------------------|------------------|---------------|-----------|

369) The reaction  $C_8H_{18} \rightarrow C_3H_6 + \text{Fragments}$  is .

|                        |                  |              |              |
|------------------------|------------------|--------------|--------------|
| a) Catalytic oxidation | b) Isomerization | c) Synthesis | ✓d) Cracking |
|------------------------|------------------|--------------|--------------|

370) Which of the following is not alicyclic .

|                |                |             |                 |
|----------------|----------------|-------------|-----------------|
| a) Cyclohexene | b) Cyclobutane | ✓c) Toluene | d) Cyclopentene |
|----------------|----------------|-------------|-----------------|

371) Aromatic compounds burn with sooty flame because:

|   |                                |  |                                   |
|---|--------------------------------|--|-----------------------------------|
| a) They have high percentage of hydrogen. | b) They have a ring structure. | ✓c) They have high percentage of carbon. | d) They resist reaction with air. |
|---|--------------------------------|--|-----------------------------------|

372) Acetic acid is manufactured by

|                 |                  |               |                   |
|-----------------|------------------|---------------|-------------------|
| a) Distillation | ✓b) Fermentation | c) Ozonolysis | d) Esterification |
|-----------------|------------------|---------------|-------------------|

373) The compound that is nitrated with difficult is .

|            |                  |            |           |
|------------|------------------|------------|-----------|
| a) Toluene | ✓b) Nitrobenzene | c) Benzene | d) Phenol |
|------------|------------------|------------|-----------|

374) Lucas reagent used to distinguish the pri , sec & ter alcohol consists of .

|                   |                   |                    |                   |
|-------------------|-------------------|--------------------|-------------------|
| a) HBr & $MgCl_2$ | b) HBr & $ZnCl_2$ | ✓c) HCl & $ZnCl_2$ | d) HCl & $MgCl_2$ |
|-------------------|-------------------|--------------------|-------------------|

375) Which of the following element form acidic oxide only ?

|       |       |       |        |
|-------|-------|-------|--------|
| a) Cd | b) Al | c) Sn | ✓d) Br |
|-------|-------|-------|--------|

376) Ammonia is prepared industrially by .

|                    |                            |                      |                     |
|--------------------|----------------------------|----------------------|---------------------|
| a) Contact process | b) BirkelandEyde's process | c) Ostwald's process | ✓d) Haber's process |
|--------------------|----------------------------|----------------------|---------------------|

377) Laughing gas is prepared by heating .

|             |                 |                |               |
|-------------|-----------------|----------------|---------------|
| a) $NaNO_3$ | b) $Ca(NO_3)_2$ | ✓c) $NH_4NO_3$ | d) $NH_4NO_2$ |
|-------------|-----------------|----------------|---------------|

378) The most reactive halogen in the halogenation of alkane under sunlight is .

|            |           |          |                  |
|------------|-----------|----------|------------------|
| ✓a) $Cl_2$ | b) $Br_2$ | c) $I_2$ | d) None of these |
|------------|-----------|----------|------------------|

379) If B forms glyoxal when it is treated with ozone , then B is

|           |           |             |                |
|-----------|-----------|-------------|----------------|
| a) Ethene | b) Ethyne | ✓c) Benzene | d) Cyclohexane |
|-----------|-----------|-------------|----------------|

380) C = O and C = C bonds are differentiated by .

|                            |                 |                      |                              |
|----------------------------|-----------------|----------------------|------------------------------|
| a) Hydridization of C-atom | ✓b) Bond length | c) Planar structures | d) Undergo addition reaction |
|----------------------------|-----------------|----------------------|------------------------------|

381) Which of the following is liquid at room temperature ?



|           |            |           |             |
|-----------|------------|-----------|-------------|
| a) Ethyne | b) Propyne | c) Butyne | ✓d) Pentyne |
|-----------|------------|-----------|-------------|

382) The maximum oxidation state is shown by which of the following transition elements ?

|             |         |           |                |
|-------------|---------|-----------|----------------|
| a) Chromium | b) Iron | c) Cobalt | ✓d) Managanese |
|-------------|---------|-----------|----------------|

383) The element cesium bears resemblance with .

|       |       |         |                   |
|-------|-------|---------|-------------------|
| a) Ca | b) Cr | c) Both | ✓d) None of these |
|-------|-------|---------|-------------------|

384) The newspaper can be recycled again and again many times as.

|       |      |      |      |
|-------|------|------|------|
| ✓a) 5 | b) 3 | c) 4 | d) 2 |
|-------|------|------|------|

385) Benzene is more stable than the 1,3,5 cyclohexatriene by

|                   |                    |                   |                   |
|-------------------|--------------------|-------------------|-------------------|
| a) 145.9 kJ/ mole | ✓b) 150.5 kJ/ mole | c) 178.5 kJ/ mole | d) 119.8 kJ/ mole |
|-------------------|--------------------|-------------------|-------------------|

386) Ester benzyI acetate has the flavour

|           |             |            |           |
|-----------|-------------|------------|-----------|
| a) Orange | ✓b) Jasmine | c) Apricot | d) Banana |
|-----------|-------------|------------|-----------|

387) Out of Na , Mg ,  $\text{Na}^{+1}$  &  $\text{Mg}^{+2}$  , the highest ionization energy is of .

|       |                    |       |                      |
|-------|--------------------|-------|----------------------|
| a) Na | b) $\text{Na}^{+}$ | c) Mg | ✓d) $\text{Mg}^{+2}$ |
|-------|--------------------|-------|----------------------|

388) Aluminium oxide is.

|                 |                |                      |                  |
|-----------------|----------------|----------------------|------------------|
| a) Acidic oxide | b) Basic oxide | ✓c) Amphoteric oxide | d) None of these |
|-----------------|----------------|----------------------|------------------|

389) Which of the following nitrogenous base is not present in RNA?

|             |            |             |           |
|-------------|------------|-------------|-----------|
| a) Cytosine | b) Adenine | ✓c) Thymine | d) Uracil |
|-------------|------------|-------------|-----------|

390) Which of the following elements has lowest ionization energy ?

|              |           |           |           |
|--------------|-----------|-----------|-----------|
| a) Beryllium | ✓b) Boron | c) Carbon | d) Oxygen |
|--------------|-----------|-----------|-----------|

391) Aluminum reacts with nitrogen to form.

|         |                          |                            |                            |
|---------|--------------------------|----------------------------|----------------------------|
| ✓a) AlN | b) $\text{Al}_2\text{N}$ | c) $\text{Al}_2\text{N}_3$ | d) $\text{Al}_4\text{N}_6$ |
|---------|--------------------------|----------------------------|----------------------------|

392)  $\text{NO}_2$  is treated with KI then .

|                                 |                                  |                               |                                    |
|---------------------------------|----------------------------------|-------------------------------|------------------------------------|
| ✓a) $\text{I}^{-1}$ is oxidized | b) $\text{I}_2$ is not liberated | c) $\text{I}^{-1}$ is reduced | d) Potassium nitrite is not formed |
|---------------------------------|----------------------------------|-------------------------------|------------------------------------|

393) Down's cell is used to prepare .

|                     |                  |                       |                     |
|---------------------|------------------|-----------------------|---------------------|
| a) Sodium carbonate | ✓b) Sodium metal | c) Sodium bicarbonate | d) Sodium hydroxide |
|---------------------|------------------|-----------------------|---------------------|

394) Both aldehyde and ketone have general formula .

|                                       |                                   |                              |                  |
|---------------------------------------|-----------------------------------|------------------------------|------------------|
| ✓a) $\text{C}_n\text{H}_{2n}\text{O}$ | b) $\text{C}_n\text{H}_n\text{O}$ | c) $\text{C}_{2n}\text{H}_n$ | d) None of these |
|---------------------------------------|-----------------------------------|------------------------------|------------------|

395) Electronic configuration of four elements A,B,C,D are as follows , which will be the most metallic ?

|                |                |                    |                   |
|----------------|----------------|--------------------|-------------------|
| a) A = 2, 8, 4 | b) B = 2, 8, 6 | ✓c) C = 2, 8, 8, 1 | d) D = 2, 8, 8, 7 |
|----------------|----------------|--------------------|-------------------|

396) Which of the following element is not present in all proteins?

|           |             |             |             |
|-----------|-------------|-------------|-------------|
| a) Carbon | b) Hydrogen | c) Nitrogen | ✓d) Sulphur |
|-----------|-------------|-------------|-------------|



397) Which of the following is a macronutrient .

|         |         |             |             |
|---------|---------|-------------|-------------|
| a) Iron | b) Zinc | c) Chlorine | ✓d) Calcium |
|---------|---------|-------------|-------------|

398) In Nelson's cell the solution coming out of cathode compartment contains 16% NaCl , the % age of NaOH in the solution is .

|          |         |         |        |
|----------|---------|---------|--------|
| ✓a) 11 % | b) 84 % | c) 50 % | d) 2 % |
|----------|---------|---------|--------|

399) When hydrogen losses its electron to form  $H^+$  ion , then it resembles .

|                |             |                   |                |
|----------------|-------------|-------------------|----------------|
| a) Semi metals | b) Halogens | ✓c) Alkali metals | d) Noble gases |
|----------------|-------------|-------------------|----------------|

400) Alcohol obtained by fermentation never exceeds.

|         |        |        |        |
|---------|--------|--------|--------|
| ✓a) 14% | b) 10% | c) 16% | d) 95% |
|---------|--------|--------|--------|

401) \_\_\_\_\_ % aqueous solution called formalin .

|         |          |         |         |
|---------|----------|---------|---------|
| a) 30 % | ✓b) 40 % | c) 50 % | d) 60 % |
|---------|----------|---------|---------|

402) The volatility of  $H_2SO_4$  is low due to .

|                 |                   |                        |                      |
|-----------------|-------------------|------------------------|----------------------|
| a) Strong bonds | b) Covalent bonds | c) High molecular mass | ✓d) Hydrogen bonding |
|-----------------|-------------------|------------------------|----------------------|

403) Hydrolysis  $R-MgX$  gives .

|           |             |           |            |
|-----------|-------------|-----------|------------|
| a) Alkene | ✓b) Alkanes | c) ALkyne | d) Alcohol |
|-----------|-------------|-----------|------------|

404) Which of the following is the ore of potassium ?

|             |             |            |               |
|-------------|-------------|------------|---------------|
| a) Dolomite | b) Cryolite | c) Bauxite | ✓d) Carnalite |
|-------------|-------------|------------|---------------|

405) Aromaticity of benzene is due to .

|                           |                   |                    |                        |
|---------------------------|-------------------|--------------------|------------------------|
| a) Presence of sigma bond | b) Ring structure | ✓c) Delocalization | d) Three double bounds |
|---------------------------|-------------------|--------------------|------------------------|

406) Which one is chlorous acid ?

|           |             |             |              |
|-----------|-------------|-------------|--------------|
| a) $HClO$ | b) $HClO_2$ | c) $HClO_3$ | ✓d) $HClO_4$ |
|-----------|-------------|-------------|--------------|

407) Nitrogenous fertilizer easily taken up by plants is .

|          |               |               |                      |
|----------|---------------|---------------|----------------------|
| ✓a) Urea | b) $NH_4NO_3$ | c) $NH_3$ gas | d) $NH_3$ ( liquid ) |
|----------|---------------|---------------|----------------------|

408) Acetic acid exists as dimer in benzene due to .

|   |                                 |                          |                      |
|---|---------------------------------|--------------------------|----------------------|
| a) Presence of hydrogen at $\alpha$ -carbon | b) Presence of carboxylic group | c) Condensation reaction | ✓d) Hydrogen bonding |
|---|---------------------------------|--------------------------|----------------------|

409) The main function of burning in rotary kiln is .

|                             |  |                                  |  |
|-----------------------------|--|----------------------------------|--|
| a) To reduce the impurities | ✓b) Combination of different oxides like $CaO$ , $SiO_2$ , $Fe_2O_3$ and $Al_2O_3$ | c) To dry the moisture of slurry | d) To decompose limestone to unslaked lime |
|-----------------------------|--|----------------------------------|--|

410) Which ion will have the maximum value of heat of hydration?

|           |           |              |               |
|-----------|-----------|--------------|---------------|
| a) $Na^+$ | b) $Cs^+$ | c) $Ba^{+2}$ | ✓d) $Mg^{+2}$ |
|-----------|-----------|--------------|---------------|



411) Phenol of Ni gives .

|   |                |            |                  |
|---|----------------|------------|------------------|
| <input checked="" type="checkbox"/> a) Cyclohexanol | b) Cyclohexane | c) Benzene | d) None of these |
|---|----------------|------------|------------------|

412) In Electro chemical Theory  $\text{H}_2\text{CO}_3 \rightleftharpoons ?$

|                 |                     |   |                  |
|-----------------|---------------------|---|------------------|
| a) $\text{H}^+$ | b) $\text{HCO}_3^-$ | <input checked="" type="checkbox"/> c) Both A & B | d) None of these |
|-----------------|---------------------|---|------------------|

413) The state of hybridization in ethene molecule is.

|                   |                  |  |       |
|-------------------|------------------|--|-------|
| a) $\text{dsp}^2$ | b) $\text{sp}^3$ | <input checked="" type="checkbox"/> c) $\text{sp}^2$ | d) sp |
|-------------------|------------------|--|-------|

414) In most of organic compounds , carbon behaves as .

|               |             |              |  |
|---------------|-------------|--------------|--|
| a) Monovalent | b) Divalent | c) Trivalent | <input checked="" type="checkbox"/> d) Tetravalent |
|---------------|-------------|--------------|--|

415) Which one of the following compounds has fused benzene rings ?

|                |                 |   |                      |
|----------------|-----------------|---|----------------------|
| a) bi - phenyl | b) Benzophenone | <input checked="" type="checkbox"/> c) Anthracene | d) di-phenyl methane |
|----------------|-----------------|---|----------------------|

416) Melting points of halogens \_\_\_\_\_ the group.

|                  |  |                            |                                      |
|------------------|--|----------------------------|--------------------------------------|
| a) Decrease down | <input checked="" type="checkbox"/> b) Increase down | c) Remain same through out | d) First increase then decrease down |
|------------------|--|----------------------------|--------------------------------------|

417) Ethanol can be converted into Ethnoic acid by .

|                 |              |                  |  |
|-----------------|--------------|------------------|--|
| a) Fermentation | b) Hydration | c) Hydrogenation | <input checked="" type="checkbox"/> d) Oxidation |
|-----------------|--------------|------------------|--|

418) The main pollutant of leather tanneries in the waste water is due to the salt of:

|         |   |           |                   |
|---------|---|-----------|-------------------|
| a) Lead | <input checked="" type="checkbox"/> b) Chromium(VI) | c) Copper | d) Chromium (III) |
|---------|---|-----------|-------------------|

419) Organic chemistry deals with study of compounds of \_\_\_\_\_ and \_\_\_\_\_ and their derivatives .

|                    |  |                      |                  |
|--------------------|--|----------------------|------------------|
| a) Oxygen , carbon | <input checked="" type="checkbox"/> b) Carbon , hydrogen | c) Carbon , Nitrogen | d) None of these |
|--------------------|--|----------------------|------------------|

420) Which is not an ore of iron?

|              |              |             |  |
|--------------|--------------|-------------|--|
| a) Haematite | b) Magnetite | c) Limonite | <input checked="" type="checkbox"/> d) Cassiterite |
|--------------|--------------|-------------|--|

421) Which is a secondary pollutant?

|  |                  |                  |       |
|--|------------------|------------------|-------|
| <input checked="" type="checkbox"/> a) Carbonic acid | b) $\text{CO}_2$ | c) $\text{SO}_2$ | d) CO |
|--|------------------|------------------|-------|

422) Mark the incorrect statement about Lithium .

|  |   |  |                           |
|--|---|--|---------------------------|
| a) Lithium metals is not affected by air | <input checked="" type="checkbox"/> b) When burnt in oxygen , lithium forms superoxide ( $\text{LiO}_2$ ) | c) Lithium combines with $\text{N}_2$ directly to form lithium nitride | d) Lithium forms hydrides |
|--|---|--|---------------------------|

423) Which one is not a nucleophile ?

|                  |                         |                         |  |
|------------------|-------------------------|-------------------------|--|
| a) $\text{NH}_3$ | b) $\text{H}_2\text{S}$ | c) $\text{H}_2\text{O}$ | <input checked="" type="checkbox"/> d) $\text{BF}_3$ |
|------------------|-------------------------|-------------------------|--|

424) For a ketone having molecular formula  $\text{C}_5\text{H}_{10}\text{O}$  , the number of possible metamers are

|  |      |      |      |
|--|------|------|------|
| <input checked="" type="checkbox"/> a) 2 | b) 3 | c) 4 | d) 5 |
|--|------|------|------|

425) Which one is amphoteric oxide ?



|                  |                 |                  |                          |
|------------------|-----------------|------------------|--------------------------|
| a) $\text{SO}_3$ | b) $\text{CaO}$ | ✓c) $\text{ZnO}$ | d) $\text{Li}_2\text{O}$ |
|------------------|-----------------|------------------|--------------------------|

426) Which isomerism can be possible for 2 - chloro 3 - methyl butane ?

|                               |                       |                    |               |
|-------------------------------|-----------------------|--------------------|---------------|
| a) Functional group isomerism | ✓b) Position isomersm | c) Chain isomerism | d) Metamerism |
|-------------------------------|-----------------------|--------------------|---------------|

427) Oxygen is more electronegative than sulphur , yet  $\text{H}_2\text{S}$  is acidic and  $\text{H}_2\text{O}$  is neutral because .

|  |   |   |                                      |
|--|---|---|--------------------------------------|
| a) $\text{H}_2\text{O}$ is associated due to H-Bonding | b) $\text{H}_2\text{S}$ is gas while $\text{H}_2\text{O}$ is liquid | c) Molecular weight of $\text{H}_2\text{S}$ is more than $\text{H}_2\text{O}$ | ✓d) H-S bond is weaker than H-O bond |
|--|---|---|--------------------------------------|

428) Number of possible chain isomers of alkane  $\text{C}_5\text{H}_{12}$  are .

|      |       |      |      |
|------|-------|------|------|
| a) 2 | ✓b) 3 | c) 4 | d) 5 |
|------|-------|------|------|

429) The compound which reacts with Tollen's reagent .

|                   |                                 |                              |  |
|-------------------|---------------------------------|------------------------------|--|
| ✓a) $\text{HCHO}$ | b) $\text{H}_3\text{C.CO.CH}_3$ | c) $\text{H}_3\text{C.COOH}$ | d) $\text{H}_3\text{C.CO.C}_2\text{H}_5$ |
|-------------------|---------------------------------|------------------------------|--|

430) The oxides of beryllium are.

|           |          |                |                  |
|-----------|----------|----------------|------------------|
| a) Acidic | b) Basic | ✓c) Amphoteric | d) None of these |
|-----------|----------|----------------|------------------|

431) Which of the following is a poor leaving group ?

|                    |                |                    |                 |
|--------------------|----------------|--------------------|-----------------|
| a) $-\text{HSO}_4$ | b) $-\text{I}$ | ✓c) $-\text{NH}_2$ | d) $-\text{Br}$ |
|--------------------|----------------|--------------------|-----------------|

432) Which of the following gases is powerful vesicant ?

|              |                 |            |           |
|--------------|-----------------|------------|-----------|
| a) Marsh gas | ✓b) Mustard gas | c) Ozonide | d) Butane |
|--------------|-----------------|------------|-----------|

433) Conversion of unsaturated hydrocarbon to saturated hydracarbons in presence of catalyst is called .

|                 |                   |                  |                    |
|-----------------|-------------------|------------------|--------------------|
| a) Halogenation | ✓b) Hydrogenation | c) Hydroxylation | d) Dehydrogenation |
|-----------------|-------------------|------------------|--------------------|

434) Elimination bimolecular reactions involve:

|                         |                         |                           |                        |
|-------------------------|-------------------------|---------------------------|------------------------|
| a) First order kinetics | b) Third order kinetics | ✓c) Second order kinetics | d) Zero order kinetics |
|-------------------------|-------------------------|---------------------------|------------------------|

435) The anhydride of  $\text{HClO}_4$  is :

|                   |                   |                            |                             |
|-------------------|-------------------|----------------------------|-----------------------------|
| a) $\text{ClO}_3$ | b) $\text{ClO}_2$ | c) $\text{Cl}_2\text{O}_5$ | ✓d) $\text{Cl}_2\text{O}_7$ |
|-------------------|-------------------|----------------------------|-----------------------------|

436) Ring test is used to confirm the presence of .

|             |                     |            |              |
|-------------|---------------------|------------|--------------|
| a) Nitrogen | b) Nitrogen dioxide | c) Nitride | ✓d) Nitrates |
|-------------|---------------------|------------|--------------|

437) Which one of the following sets of raw materials is most suitable for manufacture of urea ?

|  |  |  |   |
|--|--|--|---|
| ✓a) $\text{CH}_4$ , $\text{N}_2$ and $\text{CO}_2$ | b) $\text{H}_2$ , $\text{N}_2$ and $\text{CO}$ | c) $\text{H}_2$ , $\text{CO}_2$ and $\text{H}_2\text{O}$ | d) $\text{H}_2\text{O}$ , $\text{N}_2$ and $\text{H}_2$ |
|--|--|--|---|

438) Group VII-B of transition elements contains .

|  |   |   |  |
|--|---|---|--|
| a) $\text{Cu}$ , $\text{Ag}$ , $\text{Au}$ | ✓b) $\text{Mn}$ , $\text{Tc}$ , $\text{Re}$ | c) $\text{V}$ , $\text{Nb}$ , $\text{Ta}$ | d) $\text{Fe}$ , $\text{Ru}$ , $\text{Os}$ |
|--|---|---|--|

439) As we go from left to right in 4th period , the shielding effect ?

|                                   |                        |                                   |                      |
|-----------------------------------|------------------------|-----------------------------------|----------------------|
| a) First decreases then increases | b) Increases regularly | c) First increases then decreases | ✓d) Remains constant |
|-----------------------------------|------------------------|-----------------------------------|----------------------|



440) Which of the following halogens will not form oxyacid ?

|       |       |       |      |
|-------|-------|-------|------|
| a) Cl | ✓b) F | c) Br | d) I |
|-------|-------|-------|------|

441) Shape of benzene molecule is .

|                    |           |                     |              |
|--------------------|-----------|---------------------|--------------|
| a) Planar trigonal | b) Linear | ✓c) Plane hexagonal | d) Pyramidal |
|--------------------|-----------|---------------------|--------------|

442) 6<sup>th</sup> period contains the number of elements .

|       |        |      |       |
|-------|--------|------|-------|
| a) 18 | ✓b) 32 | c) 8 | d) 10 |
|-------|--------|------|-------|

443) Glucose and fructose are isomers .

|                  |                              |                     |             |
|------------------|------------------------------|---------------------|-------------|
| a) Chain isomers | ✓b) Functional group isomers | c) Position isomers | d) Metamers |
|------------------|------------------------------|---------------------|-------------|

444) The chemist who synthesized urea from ammonium cyanate was.

|              |          |            |              |
|--------------|----------|------------|--------------|
| a) Berzelius | b) Kolbe | ✓c) Wholer | d) Lavoisier |
|--------------|----------|------------|--------------|

445) CaF<sub>2</sub> is called .

|             |               |           |                  |
|-------------|---------------|-----------|------------------|
| a) Cryolite | ✓b) Flurospar | c) Halite | d) None of these |
|-------------|---------------|-----------|------------------|

446) The state of hybridization of carbon atom in methane is:

|                     |                    |       |                     |
|---------------------|--------------------|-------|---------------------|
| ✓a) sp <sup>3</sup> | b) sp <sup>2</sup> | c) sp | d) dsp <sup>2</sup> |
|---------------------|--------------------|-------|---------------------|

447) Catalyst used for the laboratory preparation of formaldehyde is .

|                |                |                 |                |
|----------------|----------------|-----------------|----------------|
| a) Cd-asbestos | b) Pb-asbestos | ✓c) Pt-asbestos | d) Cu-asbestos |
|----------------|----------------|-----------------|----------------|

448) Which is the other name of phenol ?

|             |             |          |                   |
|-------------|-------------|----------|-------------------|
| a) Methanol | b) Carbinol | c) Xylol | ✓d) Carbolic Acid |
|-------------|-------------|----------|-------------------|

449) Aluminum is corroded in coastal places near the sea , because protective oxide film .

|                          |                            |                               |  |
|--------------------------|----------------------------|-------------------------------|--|
| a) Reacts with sea water | b) Is removed by sea water | c) Reacts with sand particles | ✓d) Is attacked by salt present in sea water |
|--------------------------|----------------------------|-------------------------------|--|

450) Acidic nature of Phenol is due to

|                   |                     |                 |                         |
|-------------------|---------------------|-----------------|-------------------------|
| a) Phenolic group | b) Hydrogen bonding | c) Benzene ring | ✓d) Resonance stability |
|-------------------|---------------------|-----------------|-------------------------|

451) Formula of oleum is .

|                                   |  |   |                  |
|-----------------------------------|--|---|------------------|
| a) H <sub>2</sub> SO <sub>4</sub> | ✓b) H <sub>2</sub> S <sub>2</sub> O <sub>7</sub> | c) H <sub>2</sub> SO <sub>4</sub> + SO <sub>3</sub> | d) None of these |
|-----------------------------------|--|---|------------------|

452) Which of the following does not contain benzene ring ?

|                  |                 |                 |                  |
|------------------|-----------------|-----------------|------------------|
| a) Carbolic acid | ✓b) Picric Acid | c) Malonic Acid | d) Phthalic Acid |
|------------------|-----------------|-----------------|------------------|

453) A single chloride free radical can destroy how many ozone molecules

|        |       |            |          |
|--------|-------|------------|----------|
| a) 100 | b) 10 | ✓c) 100000 | d) 10000 |
|--------|-------|------------|----------|

454) The Carbon of Carbonyl Group is .

|                               |                  |                                |                                |
|-------------------------------|------------------|--------------------------------|--------------------------------|
| a) Sp <sup>3</sup> Hybridized | b) Sp Hybridized | ✓c) Sp <sup>2</sup> Hybridized | d) dSp <sup>2</sup> Hybridized |
|-------------------------------|------------------|--------------------------------|--------------------------------|



455) The nature of lysine amino acid is.

|           |           |               |            |
|-----------|-----------|---------------|------------|
| a) Acidic | ✓b) Basic | c) Amphoteric | d) Natural |
|-----------|-----------|---------------|------------|

456) In purification of portable water the coagulant used is.

|                    |                    |                    |                       |
|--------------------|--------------------|--------------------|-----------------------|
| a) Nickel sulphate | b) Copper sulphate | c) Barium sulphate | ✓d) Aluminum sulphate |
|--------------------|--------------------|--------------------|-----------------------|

457) Which of the following reagents will react with both aldehydes and ketones?

|                      |                      |                     |                       |
|----------------------|----------------------|---------------------|-----------------------|
| ✓a) Grignard reagent | b) Fehling's reagent | c) Tollen's reagent | d) Benedict's reagent |
|----------------------|----------------------|---------------------|-----------------------|

458) In the preparation of  $\text{Cl}_2$  from  $\text{HCl}$ ,  $\text{MnO}_2$  acts as .

|                   |                      |                     |                    |
|-------------------|----------------------|---------------------|--------------------|
| a) Reducing agent | b) Dehydrating agent | ✓c) Oxidizing agent | d) Catalytic agent |
|-------------------|----------------------|---------------------|--------------------|

459) Which of the following is the major product when  $\text{HBr}$  reacts with 2-butene ?

|                   |                    |                  |                    |
|-------------------|--------------------|------------------|--------------------|
| ✓a) 2-bromobutane | b) 1,1 bromobutane | c) 1-bromobutane | d) 1,2 bromobutane |
|-------------------|--------------------|------------------|--------------------|

460) Which one is the heterocyclic compound of oxygen?

|             |            |           |              |
|-------------|------------|-----------|--------------|
| a) Pyridine | b) Parrole | ✓c) Furan | d) Thiophene |
|-------------|------------|-----------|--------------|

461) Formula of chloroform is:

|                           |                   |                             |                     |
|---------------------------|-------------------|-----------------------------|---------------------|
| a) $\text{CH}_3\text{Cl}$ | b) $\text{CCl}_4$ | c) $\text{CH}_2\text{Cl}_2$ | ✓d) $\text{CHCl}_3$ |
|---------------------------|-------------------|-----------------------------|---------------------|

462) Peroxyacetyl nitrate (PAN) is an irritant to human beings and it affects/

|          |         |            |         |
|----------|---------|------------|---------|
| ✓a) Eyes | b) Ears | c) Stomach | d) Nose |
|----------|---------|------------|---------|

463)  $(\text{CH}_3)_2 - \text{CH} - \text{CH}_2 - \text{Cl}$  is .

|                    |                   |                       |                  |
|--------------------|-------------------|-----------------------|------------------|
| a) Methyl chloride | b) Ethyl chloride | ✓c) Isobutyl chloride | d) None of these |
|--------------------|-------------------|-----------------------|------------------|

464) In contact process impurities of Arsenic are removed by .

|                              |                             |                             |                            |
|------------------------------|-----------------------------|-----------------------------|----------------------------|
| ✓a) $\text{Fe}(\text{OH})_3$ | b) $\text{Al}(\text{OH})_3$ | c) $\text{Cr}(\text{OH})_3$ | d) $\text{Fe}_2\text{O}_3$ |
|------------------------------|-----------------------------|-----------------------------|----------------------------|

465) Which of the following elements is not present abundantly in earth's crust?

|            |             |            |           |
|------------|-------------|------------|-----------|
| a) Silicon | b) Aluminum | ✓c) Sodium | d) Oxygen |
|------------|-------------|------------|-----------|

466) Which one of the following oxides is more basic :

|                 |                  |                 |                 |
|-----------------|------------------|-----------------|-----------------|
| a) $\text{BeO}$ | ✓b) $\text{SrO}$ | c) $\text{CaO}$ | d) $\text{MgO}$ |
|-----------------|------------------|-----------------|-----------------|

467) Element of Group IIA are called .

|                  |                           |                   |             |
|------------------|---------------------------|-------------------|-------------|
| a) Alkali metals | ✓b) Alkaline earth metals | c) Coinage metals | d) Halogens |
|------------------|---------------------------|-------------------|-------------|

468) When calcium carbide is treated with water we get .

|                  |                 |             |            |
|------------------|-----------------|-------------|------------|
| a) Ethyl formate | b) Acetaldehyde | c) Ethylene | ✓d) Ethyne |
|------------------|-----------------|-------------|------------|

469) Which of the following ester has banana flavour ?

|                   |                  |                  |                  |
|-------------------|------------------|------------------|------------------|
| a) Ethyl butyrate | b) Octyl acetate | ✓c) Amyl acetate | d) Butyl acetate |
|-------------------|------------------|------------------|------------------|

470) An alkyl halide can be converted into alcohol by .

|             |                  |                |                    |
|-------------|------------------|----------------|--------------------|
| a) Addition | ✓b) Substitution | c) Elimination | d) Dehydrogenation |
|-------------|------------------|----------------|--------------------|



471)  $\text{Fe}^{+3}$  is strongly paramagnetic and has .

|                         |                         |                         |                          |
|-------------------------|-------------------------|-------------------------|--------------------------|
| a) 2 unpaired electrons | b) 4 unpaired electrons | c) 3 unpaired electrons | ✓d) 5 unpaired electrons |
|-------------------------|-------------------------|-------------------------|--------------------------|

472) Which one of the following is not a nucleophile :

|                         |                         |                   |                  |
|-------------------------|-------------------------|-------------------|------------------|
| a) $\text{H}_2\text{O}$ | b) $\text{H}_2\text{S}$ | ✓c) $\text{BF}_3$ | d) $\text{NH}_3$ |
|-------------------------|-------------------------|-------------------|------------------|

473) Water pipes are protected from rust by .

|                |                           |                         |                   |
|----------------|---------------------------|-------------------------|-------------------|
| a) Tin plating | b) Tin and chrome plating | ✓c) Galvanizing with Zn | d) Chrome plating |
|----------------|---------------------------|-------------------------|-------------------|

474) Which of the following is a non-typical transition element?

|       |       |        |       |
|-------|-------|--------|-------|
| a) Cr | b) Mn | ✓c) Zn | d) Fe |
|-------|-------|--------|-------|

475) Which one of the following ions is colourless ?

|                      |                     |                    |                     |
|----------------------|---------------------|--------------------|---------------------|
| ✓a) $\text{Sc}^{+3}$ | b) $\text{Ti}^{+3}$ | c) $\text{V}^{+3}$ | d) $\text{Cr}^{+3}$ |
|----------------------|---------------------|--------------------|---------------------|

476) ..... is Alcohol in the following.

|                                       |                              |                             |                                      |
|---------------------------------------|------------------------------|-----------------------------|--------------------------------------|
| ✓a) $\text{CH}_3\text{CH}_2\text{OH}$ | b) $\text{CH}_3\text{OCH}_3$ | c) $\text{CH}_3\text{COOH}$ | d) $\text{CH}_3\text{CH}_2\text{SH}$ |
|---------------------------------------|------------------------------|-----------------------------|--------------------------------------|

477) Borax can be prepared by reacting boric acid with .

|                 |                   |              |                  |
|-----------------|-------------------|--------------|------------------|
| a) Caustic soda | b) Caustic potash | ✓c) Soda ash | d) Lunar caustic |
|-----------------|-------------------|--------------|------------------|

478) Hydrogen is a \_\_\_\_\_ like most of halogens .

|          |           |         |                  |
|----------|-----------|---------|------------------|
| a) Solid | b) Liquid | ✓c) Gas | d) None of these |
|----------|-----------|---------|------------------|

479) Conversion of unsaturated hydro carbons to saturated hydrocarbons in the presence of catalyst is called as.

|                 |                  |                  |                    |
|-----------------|------------------|------------------|--------------------|
| a) Halogenation | b) Hydrogenation | c) Hydroxylation | d) Dehydrogenation |
|-----------------|------------------|------------------|--------------------|

480) Acetic Acid reacts with  $\text{LiAlH}_4$  to give .

|                           |                                    |   |                                     |
|---------------------------|------------------------------------|---|-------------------------------------|
| a) $\text{C}_2\text{H}_6$ | b) $\text{C}_3\text{H}_7\text{OH}$ | c) $\text{C}_6\text{H}_5 - \text{CH}_2 - \text{OH}$ | ✓d) $\text{C}_2\text{H}_5\text{OH}$ |
|---------------------------|------------------------------------|---|-------------------------------------|

481) The most durable metal plating on iron to protect against corrosion is .

|                   |                   |                |                  |
|-------------------|-------------------|----------------|------------------|
| a) Nickel plating | b) Copper plating | c) Tin plating | ✓d) Zinc plating |
|-------------------|-------------------|----------------|------------------|

482) Which of the following is most abundant in the earth crust ?

|        |       |       |       |
|--------|-------|-------|-------|
| ✓a) Al | b) Be | c) Ba | d) Bi |
|--------|-------|-------|-------|

483) The hydrides of group IA are .

|           |             |             |                 |
|-----------|-------------|-------------|-----------------|
| ✓a) Ionic | b) Covalent | c) Metallic | d) Interstitial |
|-----------|-------------|-------------|-----------------|

484) The most poisonous form of phosphorous is .

|           |        |          |              |
|-----------|--------|----------|--------------|
| ✓a) White | b) Red | c) Black | d) Amorphous |
|-----------|--------|----------|--------------|

485) Tincal is a mineral of .

|       |       |       |      |
|-------|-------|-------|------|
| a) Al | ✓b) B | c) Si | d) C |
|-------|-------|-------|------|

486) Which is not a calcareous material?

|         |          |           |                 |
|---------|----------|-----------|-----------------|
| a) Lime | ✓b) Clay | c) Marble | d) Marine shell |
|---------|----------|-----------|-----------------|



487) Compound obtained when Na burns in excess of air.

|                   |                            |                            |                            |
|-------------------|----------------------------|----------------------------|----------------------------|
| a) $\text{NaO}_2$ | b) $\text{Na}_2\text{O}_2$ | ✓ c) $\text{Na}_2\text{O}$ | d) $\text{Na}_2\text{O}_3$ |
|-------------------|----------------------------|----------------------------|----------------------------|

488) Benzene has a regular planar \_\_\_\_\_

|            |                |               |                  |
|------------|----------------|---------------|------------------|
| a) Digonal | ✓ b) Hexagonal | c) Pentagonal | d) None of these |
|------------|----------------|---------------|------------------|

489) The carbon atom of a carboxyl group is hybridized .

|       |                    |                  |                  |
|-------|--------------------|------------------|------------------|
| a) sp | ✓ b) $\text{sp}^2$ | c) $\text{sp}^3$ | d) $\text{sp}^4$ |
|-------|--------------------|------------------|------------------|

490) Which element form an ion with charge + 3 ?

|               |           |         |         |
|---------------|-----------|---------|---------|
| ✓ a) Chromium | b) Copper | c) Lead | d) Zinc |
|---------------|-----------|---------|---------|

491) Which one of the following is an amide?

|                                 |                              |                                      |                              |
|---------------------------------|------------------------------|--------------------------------------|------------------------------|
| ✓ a) $(\text{NH}_2)_2\text{CO}$ | b) $\text{NH}_2.\text{CH}_3$ | c) $\text{C}_6\text{H}_5\text{NH}_2$ | d) $\text{N}(\text{CH}_3)_3$ |
|---------------------------------|------------------------------|--------------------------------------|------------------------------|

492) Which one of the following is a condensation polymer?

|                |        |               |                |
|----------------|--------|---------------|----------------|
| a) Polystyrene | b) PVA | c) Polyethene | ✓ d) Nylon 6,6 |
|----------------|--------|---------------|----------------|

493) Formamint contains .

|                               |                              |                             |                                   |
|-------------------------------|------------------------------|-----------------------------|-----------------------------------|
| ✓ a) Formaldehyde and Lactose | b) Formaldehyde and Fructose | c) Formaldehyde and Menthol | d) Formaldehyde and Ascorbic acid |
|-------------------------------|------------------------------|-----------------------------|-----------------------------------|

494) The formula of cryolite is .

|                     |                              |                                |                                       |
|---------------------|------------------------------|--------------------------------|---------------------------------------|
| a) $\text{NaAlF}_6$ | b) $\text{NaAl}_3\text{F}_6$ | ✓ c) $\text{Na}_3\text{AlF}_6$ | d) $\text{Na}_3\text{Al}_3\text{F}_6$ |
|---------------------|------------------------------|--------------------------------|---------------------------------------|

495) In ter-butyl alcohol , the tertiary carbon is bonded to .

|                         |                       |                       |                        |
|-------------------------|-----------------------|-----------------------|------------------------|
| a) Three hydrogen atoms | b) One hydrogen atoms | c) Two hydrogen atoms | ✓ d) No hydrogen atoms |
|-------------------------|-----------------------|-----------------------|------------------------|

496) Which of the following alcohols are readily oxidized to give carboxylic acids an reacting with  $\text{K}_2\text{Cr}_2\text{O}_7$  ?

|              |              |             |           |
|--------------|--------------|-------------|-----------|
| ✓ a) Primary | b) Secondary | c) Tertiary | d) Dioles |
|--------------|--------------|-------------|-----------|

497) Point out the element which forms super oxide.

|       |       |        |      |
|-------|-------|--------|------|
| a) Li | b) Na | ✓ c) K | d) C |
|-------|-------|--------|------|

498) Which metal is used in the thermite process because of its activity ?

|         |           |                |         |
|---------|-----------|----------------|---------|
| a) Iron | b) Copper | ✓ c) Aluminium | d) Zinc |
|---------|-----------|----------------|---------|

499) To avoid the formation of toxic compounds with chlorine which substance is used for disinfecting water.

|                    |                   |          |                |
|--------------------|-------------------|----------|----------------|
| a) $\text{KMnO}_4$ | ✓ b) $\text{O}_3$ | c) Alums | d) Chloramines |
|--------------------|-------------------|----------|----------------|

500) The strength of binding energy of transition elements depends upon ?

|                             |                       |                                   |                      |
|-----------------------------|-----------------------|-----------------------------------|----------------------|
| a) Number of electron pairs | b) Number of neutrons | ✓ c) Number of unpaired electrons | d) Number of protons |
|-----------------------------|-----------------------|-----------------------------------|----------------------|

501) Alcohols may be converted to the corresponding alkyl halides by the action of halogen acid in the presence of .

|                           |                   |                      |                  |
|---------------------------|-------------------|----------------------|------------------|
| a) $\text{V}_2\text{O}_5$ | b) $\text{PCl}_3$ | ✓ c) $\text{ZnCl}_2$ | d) None of these |
|---------------------------|-------------------|----------------------|------------------|



502) Elements of group IA are called .

|                   |               |                          |                   |
|-------------------|---------------|--------------------------|-------------------|
| ✓a) Alkali metals | b) Metalliods | c) Alkaline earth metals | d) Coinage metals |
|-------------------|---------------|--------------------------|-------------------|

503) If current is allowed to pass through pure conc .  $\text{H}_2\text{SO}_4$  . It behaves as .

|                   |                   |                   |   |
|-------------------|-------------------|-------------------|---|
| a) Good conductor | b) Weak conductor | ✓c) Non conductor | d) Ionize into $\text{H}^+$ & $\text{HSO}_4^{-1}$ |
|-------------------|-------------------|-------------------|---|

504) The reaction between fat and NaOH is called

|                   |                 |                   |                   |
|-------------------|-----------------|-------------------|-------------------|
| a) Esterification | b) Fermentation | c) Hydrogenolysis | d) Saponification |
|-------------------|-----------------|-------------------|-------------------|

505) Rectified spirit contains alcohol methyl about

|        |        |        |         |
|--------|--------|--------|---------|
| a) 80% | b) 85% | c) 90% | ✓d) 95% |
|--------|--------|--------|---------|

506) When NaCl is dissolved in water , sodium ion becomes

|             |               |              |            |
|-------------|---------------|--------------|------------|
| a) Oxidized | b) Hydrolyzed | ✓c) Hydrated | d) Reduced |
|-------------|---------------|--------------|------------|

507) A knocking sound is produced in engine when the fuel .

|                 |                            |                   |                  |
|-----------------|----------------------------|-------------------|------------------|
| a) Burns slowly | b) Contain lubricating oil | ✓c) Burns quickly | d) Contain water |
|-----------------|----------------------------|-------------------|------------------|

508) Which of the following compounds is a nitrogenous fertilizer ?

|                                |                               |                               |                 |
|--------------------------------|-------------------------------|-------------------------------|-----------------|
| ✓a) $\text{NH}_2\text{CONH}_2$ | b) $\text{Cu}(\text{NO}_3)_2$ | c) $\text{Pb}(\text{NO}_3)_2$ | d) Nitrobenzene |
|--------------------------------|-------------------------------|-------------------------------|-----------------|

509) The electrophile in aromatic sulphonation is:

|                            |                   |                   |                    |
|----------------------------|-------------------|-------------------|--------------------|
| a) $\text{H}_2\text{SO}_4$ | b) $\text{HSO}_4$ | ✓c) $\text{SO}_3$ | d) $\text{SO}_3^+$ |
|----------------------------|-------------------|-------------------|--------------------|

510) How many zones through which the charge passes in a rotary kiln?

|       |      |      |      |
|-------|------|------|------|
| ✓a) 4 | b) 5 | c) 3 | d) 2 |
|-------|------|------|------|

511) An aqueous solution of an organic compound reacts with sodium carbonate to produce carbon dioxide gas. Which one of the following could be the organic compound.

|  |   |                               |   |
|--|---|-------------------------------|---|
| a) $\text{CH}_2 = \text{CH} - \text{CH}_3$ | b) $\text{CH}_3\text{COOC}_2\text{H}_5$ | c) $\text{CH}_3 - \text{CHO}$ | ✓d) $\text{CH}_3 - \text{CH}_2 - \text{COOH}$ |
|--|---|-------------------------------|---|

512) Mark the correct statement .

|  |  |  |   |
|--|--|--|---|
| a) The ionization energy of calcium is lower than that of barium | ✓b) The ionization energy of calcium is lower than that of magnesium | c) The ionization energy of calcium is higher than that of beryllium | d) The ionization energy of calcium is lower than that of strontium |
|--|--|--|---|

513) Which ion will have the maximum value of heat of hydration ?

|                  |                  |                     |                      |
|------------------|------------------|---------------------|----------------------|
| a) $\text{Na}^+$ | b) $\text{Cs}^+$ | c) $\text{Ba}^{+2}$ | ✓d) $\text{Mg}^{+2}$ |
|------------------|------------------|---------------------|----------------------|

514) \_\_\_\_\_ is used in making formamint .

|           |                 |                 |                  |
|-----------|-----------------|-----------------|------------------|
| a) Ketone | b) Acetaldehyde | ✓c) Fomaldehyde | d) None of these |
|-----------|-----------------|-----------------|------------------|

515) Which halogen occur naturally in positive oxidation state ?

|      |       |       |       |
|------|-------|-------|-------|
| a) F | b) Cl | c) Br | ✓d) I |
|------|-------|-------|-------|



516) The percentage of Silica in cement is .

|         |          |          |         |
|---------|----------|----------|---------|
| a) 62 % | ✓b) 22 % | c) 7.5 % | d) 50 % |
|---------|----------|----------|---------|

517) \_\_\_\_\_ is used as a solvent for fats oils , paints , varnishes .

|              |            |             |                  |
|--------------|------------|-------------|------------------|
| ✓a) Methanol | b) Ethanol | c) Propanol | d) None of these |
|--------------|------------|-------------|------------------|

518) 2,3 - dibromo butane gives 2-butyne when it is treated with .

|       |                                   |                |                   |
|-------|-----------------------------------|----------------|-------------------|
| a) Zn | b) H <sub>2</sub> SO <sub>4</sub> | c) Aqueous KOH | ✓d) Alcohol + KOH |
|-------|-----------------------------------|----------------|-------------------|

519) Chlorine heptoxide (Cl<sub>2</sub>O<sub>7</sub>) reacts with water to form.

|                      |                 |                     |                        |
|----------------------|-----------------|---------------------|------------------------|
| a) Hypochlorous acid | b) Chloric acid | ✓c) Perchloric acid | d) Chlorine and oxygen |
|----------------------|-----------------|---------------------|------------------------|

520) The percentage of nitrogen in urea is .

|         |          |         |         |
|---------|----------|---------|---------|
| a) 36 % | ✓b) 46 % | c) 66 % | d) 56 % |
|---------|----------|---------|---------|

521) When active metal come in contact with less active metal a \_\_\_\_\_ is established .

|                   |              |               |                  |
|-------------------|--------------|---------------|------------------|
| ✓a) Galvanic cell | b) Lead cell | c) Both A & B | d) None of these |
|-------------------|--------------|---------------|------------------|

522) Which of the following is a neutral amino acid?

|             |           |              |                  |
|-------------|-----------|--------------|------------------|
| ✓a) Glycine | b) Lysine | c) Histidine | d) Glutamic acid |
|-------------|-----------|--------------|------------------|

523) Alcohol , phenol and ethers are classes of .

|                       |                     |                |                  |
|-----------------------|---------------------|----------------|------------------|
| a) Inorganic compound | b) Organic compound | ✓c) Both A & B | d) None of these |
|-----------------------|---------------------|----------------|------------------|

524) The reaction between fat and NaOH is.

|                   |                   |                 |                    |
|-------------------|-------------------|-----------------|--------------------|
| a) Esterification | b) Hydrogenolysis | c) Fermentation | ✓d) Saponification |
|-------------------|-------------------|-----------------|--------------------|

525) Rusting of metal takes place in .

|        |               |                    |                   |
|--------|---------------|--------------------|-------------------|
| a) Air | ✓b) Moist air | c) CO <sub>2</sub> | d) O <sub>2</sub> |
|--------|---------------|--------------------|-------------------|

526) The group of -C ≡ N is .

|             |           |          |                  |
|-------------|-----------|----------|------------------|
| a) Mercapto | ✓b) Cyano | c) Nitro | d) None of these |
|-------------|-----------|----------|------------------|

527) Formula of Haematite is.

|                     |                                    |                      |                                   |
|---------------------|------------------------------------|----------------------|-----------------------------------|
| a) FeS <sub>2</sub> | ✓b) Fe <sub>2</sub> O <sub>3</sub> | c) FeCO <sub>3</sub> | d) Fe <sub>3</sub> O <sub>4</sub> |
|---------------------|------------------------------------|----------------------|-----------------------------------|

528) Which compound show hydrogen bonding?

|                                  |                                     |                                     |                                      |
|----------------------------------|-------------------------------------|-------------------------------------|--------------------------------------|
| a) C <sub>2</sub> H <sub>6</sub> | b) C <sub>2</sub> H <sub>5</sub> Cl | c) CH <sub>3</sub> OCH <sub>3</sub> | ✓d) C <sub>2</sub> H <sub>5</sub> OH |
|----------------------------------|-------------------------------------|-------------------------------------|--------------------------------------|

529) What is the formula of Benzaldehyde .

|  |                                  |                                     |                  |
|--|----------------------------------|-------------------------------------|------------------|
| a) C <sub>6</sub> H <sub>5</sub> CH <sub>3</sub> | b) C <sub>7</sub> H <sub>5</sub> | ✓c) C <sub>7</sub> H <sub>6</sub> O | d) None of these |
|--|----------------------------------|-------------------------------------|------------------|

530) The reactivity of carboxylic acid is due to presence .

|                    |                    |               |                  |
|--------------------|--------------------|---------------|------------------|
| a) Carboxylic acid | ✓b) Carboxyl group | c) Both A & B | d) None of these |
|--------------------|--------------------|---------------|------------------|

531) Which set of Hybrid Orbital has planar triangular shape?

|       |                     |                     |                    |
|-------|---------------------|---------------------|--------------------|
| a) sp | ✓b) sp <sup>2</sup> | c) dsp <sup>2</sup> | d) sp <sup>3</sup> |
|-------|---------------------|---------------------|--------------------|



532) Which compound will give carbon with concentrated  $\text{H}_2\text{SO}_4$  ?

|             |                  |                |                |
|-------------|------------------|----------------|----------------|
| ✓ a) Starch | b) Ethyl Alcohol | c) Oxalic Acid | d) Formic Acid |
|-------------|------------------|----------------|----------------|

533) Which of the following has the highest melting point ?

|         |         |        |          |
|---------|---------|--------|----------|
| a) NaCl | b) NaBr | c) NaI | ✓ d) NaF |
|---------|---------|--------|----------|

534) Oxidation of NO in air produces

|                         |                           |                             |                           |
|-------------------------|---------------------------|-----------------------------|---------------------------|
| a) $\text{N}_2\text{O}$ | b) $\text{N}_2\text{O}_3$ | ✓ c) $\text{N}_2\text{O}_4$ | d) $\text{N}_2\text{O}_5$ |
|-------------------------|---------------------------|-----------------------------|---------------------------|

535) Which of the following is called oil of vitriol ?

|                         |                            |                              |                   |
|-------------------------|----------------------------|------------------------------|-------------------|
| a) $\text{H}_2\text{S}$ | b) $\text{H}_2\text{SO}_3$ | ✓ c) $\text{H}_2\text{SO}_4$ | d) $\text{HNO}_3$ |
|-------------------------|----------------------------|------------------------------|-------------------|

536) Ethanol can be converted into ethanoic acid by

|                  |              |                |                 |
|------------------|--------------|----------------|-----------------|
| a) Hydrogenation | b) Hydration | ✓ c) Oxidation | d) Fermentation |
|------------------|--------------|----------------|-----------------|

537) What will be the mechanism of the reaction ?  $\text{C}_2\text{H}_5\text{I} + 2\text{NH}_3 \rightarrow \text{C}_2\text{H}_5\text{NH}_2 + \text{NH}_4\text{I}$

|                           |                          |                             |                               |
|---------------------------|--------------------------|-----------------------------|-------------------------------|
| a) $\text{S}_{\text{N}}1$ | b) Nucleophilic addition | ✓ c) $\text{S}_{\text{N}}2$ | d) Electrophilic substitution |
|---------------------------|--------------------------|-----------------------------|-------------------------------|

538) \_\_\_\_\_ is used as drink in some countries .

|             |              |             |                  |
|-------------|--------------|-------------|------------------|
| a) Methanol | ✓ b) Ethanol | c) Propanol | d) None of these |
|-------------|--------------|-------------|------------------|

539) Dry distillation of calcium acetate gives .

|             |            |              |             |
|-------------|------------|--------------|-------------|
| a) Methanal | b) Ethanal | ✓ c) Acetone | d) Methanol |
|-------------|------------|--------------|-------------|

540) Which of the following element is not a fatty acid?

|                  |                |                    |                  |
|------------------|----------------|--------------------|------------------|
| a) Propanic acid | b) Acetic acid | ✓ c) Phthalic acid | d) Butanoic acid |
|------------------|----------------|--------------------|------------------|

541) When acetylene reacts with acetic acid, the product form is .

|                 |                   |                    |                  |
|-----------------|-------------------|--------------------|------------------|
| a) Acrylic acid | b) Acrylo nitrile | ✓ c) Vinyl acetate | d) Ethyl acetate |
|-----------------|-------------------|--------------------|------------------|

542) In the formation of ester from carboxylic acids, the  $-\text{OH}$  group is replaced by .

|                |                   |                   |                  |
|----------------|-------------------|-------------------|------------------|
| a) $-\text{R}$ | b) $-\text{COOR}$ | ✓ c) $-\text{OR}$ | d) $-\text{COR}$ |
|----------------|-------------------|-------------------|------------------|

543) Which one is not an ortho and para directing group ?

|                   |                 |                    |                    |
|-------------------|-----------------|--------------------|--------------------|
| a) $-\text{NH}_2$ | b) $-\text{OH}$ | c) $-\text{OCH}_3$ | ✓ d) $-\text{CHO}$ |
|-------------------|-----------------|--------------------|--------------------|

544) Two moles of acetic acid are heated with  $\text{P}_2\text{O}_5$ . The product formed is .

|                  |                       |            |            |
|------------------|-----------------------|------------|------------|
| a) Butanoic Acid | ✓ b) Acetic Anhydride | c) Ethanol | d) Ethanal |
|------------------|-----------------------|------------|------------|

545) The most widely used nitrogen fertilizer in Pakistan is .

|            |                      |                     |           |
|------------|----------------------|---------------------|-----------|
| a) Ammonia | b) Ammonium sulphate | c) Ammonium nitrate | ✓ d) Urea |
|------------|----------------------|---------------------|-----------|

546) Which silver salt is sparingly soluble in  $\text{H}_2\text{O}$  ?

|                 |                  |                    |                 |
|-----------------|------------------|--------------------|-----------------|
| a) $\text{AgF}$ | b) $\text{AgBr}$ | ✓ c) $\text{AgCl}$ | d) $\text{AgI}$ |
|-----------------|------------------|--------------------|-----------------|

547) Which one is not a periodic property ?

|                      |              |                 |                     |
|----------------------|--------------|-----------------|---------------------|
| a) Ionization energy | ✓ b) Density | c) Atomic radii | d) Hydration energy |
|----------------------|--------------|-----------------|---------------------|



548) Chile saltpeter has the chemical formula .

|                     |                   |                                      |  |
|---------------------|-------------------|--------------------------------------|--|
| ✓a) $\text{NaNO}_3$ | b) $\text{KNO}_3$ | c) $\text{Na}_2\text{B}_4\text{O}_7$ | d) $\text{Na}_2\text{CO}_3 \cdot \text{H}_2\text{O}$ |
|---------------------|-------------------|--------------------------------------|--|

549) The chief ore of Aluminium is .

|                              |   |                            |   |
|------------------------------|---|----------------------------|---|
| a) $\text{Na}_3\text{AlF}_6$ | ✓b) $\text{Al}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$ | c) $\text{Al}_2\text{O}_3$ | d) $\text{Al}_2\text{O}_3 \cdot \text{H}_2\text{O}$ |
|------------------------------|---|----------------------------|---|

550) Acidity of phenols is increased by the presence of group like .

|                    |             |                 |                   |
|--------------------|-------------|-----------------|-------------------|
| ✓a) $-\text{NO}_2$ | b) Halogens | c) $-\text{CN}$ | d) $-\text{CH}_3$ |
|--------------------|-------------|-----------------|-------------------|

551) Carbon shows maximum capacity of catenation because .

|                                  |  |                                      |                                    |
|----------------------------------|--|--------------------------------------|------------------------------------|
| a) Carbon shows variable valency | b) In carbon there is one extra empty d or f - orbital | ✓c) C - C bond strength is very high | d) C - C bond strength is very low |
|----------------------------------|--|--------------------------------------|------------------------------------|

552) Polymerization of acetylene forms .

|            |            |            |                 |
|------------|------------|------------|-----------------|
| a) Propane | ✓b) Butane | c) Benzene | d) Acetaldehyde |
|------------|------------|------------|-----------------|

553)  $\text{N}_2$  molecule is less reactive due to .

|              |                              |                                    |                        |
|--------------|------------------------------|------------------------------------|------------------------|
| a) High E.N. | ✓b) High dissociation energy | c) Stable electronic configuration | d) Small atomic radius |
|--------------|------------------------------|------------------------------------|------------------------|

554) The state of hybridization of carbon atom in ethane is

|                  |                   |                |                   |
|------------------|-------------------|----------------|-------------------|
| a) $\text{sp}^3$ | ✓b) $\text{sp}^2$ | c) $\text{sp}$ | d) $\text{dsp}^2$ |
|------------------|-------------------|----------------|-------------------|

555) Borax bead test is not performed for .

|       |       |        |       |
|-------|-------|--------|-------|
| a) Cu | b) Ni | ✓c) Zn | d) Co |
|-------|-------|--------|-------|

556) Which one of the following is aromatic aldehyde ?

|                 |                 |                   |                 |
|-----------------|-----------------|-------------------|-----------------|
| a) Acetaldehyde | b) Formaldehyde | ✓c) Butyraldehyde | d) Benzaldehyde |
|-----------------|-----------------|-------------------|-----------------|

557) Chloromethane is \_\_\_\_\_ alkyl Halide .

|             |              |             |                  |
|-------------|--------------|-------------|------------------|
| ✓a) Primary | b) Secondary | c) Tertiary | d) None of these |
|-------------|--------------|-------------|------------------|

558) \_\_\_\_\_ is used in the processing of anti-poliovaccine.

|                  |                 |           |                  |
|------------------|-----------------|-----------|------------------|
| ✓a) Formaldehyde | b) Acetaldehyde | c) Ketone | d) None of these |
|------------------|-----------------|-----------|------------------|

559) Resonance structure of a molecule should have .

|  |  |                                   |                                    |
|--|--|-----------------------------------|------------------------------------|
| a) The same number of paired electrons | b) The same number of unpaired electrons | c) Nearly the same energy content | ✓d) Identical arrangement of atoms |
|--|--|-----------------------------------|------------------------------------|

560) Which one is a fatty acid ?

|                |                   |                  |                 |
|----------------|-------------------|------------------|-----------------|
| a) Oxalic acid | ✓b) Phthalic acid | c) Succinic acid | d) Butyric acid |
|----------------|-------------------|------------------|-----------------|

561) Which of the following specie has the maximum number of unpaired electrons?

|                  |                   |                   |                      |
|------------------|-------------------|-------------------|----------------------|
| ✓a) $\text{O}_2$ | b) $\text{O}_2^+$ | c) $\text{O}_2^-$ | d) $\text{O}_2^{2-}$ |
|------------------|-------------------|-------------------|----------------------|

562) The general formula for Alkanes is.



|                  |                |                   |                  |
|------------------|----------------|-------------------|------------------|
| a) $C_nH_{2n+1}$ | b) $C_nH_{2n}$ | ✓c) $C_nH_{2n+2}$ | d) $C_nH_{2n-2}$ |
|------------------|----------------|-------------------|------------------|

563) Ethers show the phenomenon of:

|                       |                |                               |                        |
|-----------------------|----------------|-------------------------------|------------------------|
| a) Position isomerism | ✓b) Metamerism | c) Functional group isomerism | d) Cis-trans isomerism |
|-----------------------|----------------|-------------------------------|------------------------|

564) The reaction of benzene with ozone finally gives .

|             |           |             |                 |
|-------------|-----------|-------------|-----------------|
| ✓a) Glyoxal | b) Glycol | c) Glycerol | d) Benzoic acid |
|-------------|-----------|-------------|-----------------|

565) Which compound is the most reactive one ?

|            |            |           |           |
|------------|------------|-----------|-----------|
| a) Benzene | ✓b) Ethene | c) Ethane | d) Ethyne |
|------------|------------|-----------|-----------|

566) The general formula for Alkene having one double bond is.

|                  |                 |                  |                  |
|------------------|-----------------|------------------|------------------|
| a) $C_nH_{2n+1}$ | ✓b) $C_nH_{2n}$ | c) $C_nH_{2n+2}$ | d) $C_nH_{2n-2}$ |
|------------------|-----------------|------------------|------------------|

567) A carboxylic acid contains

|                     |                                  |                      |                                      |
|---------------------|----------------------------------|----------------------|--------------------------------------|
| a) A hydroxyl group | b) A hydroxyl and carboxyl group | ✓c) A carboxyl group | d) A carboxyl and an aldehydic group |
|---------------------|----------------------------------|----------------------|--------------------------------------|

568) Alkenes are also called .

|              |             |             |                      |
|--------------|-------------|-------------|----------------------|
| a) Paraffins | ✓b) Olefins | c) Earbenes | d) Carbonyl compound |
|--------------|-------------|-------------|----------------------|

569) Ammonium nitrate fertilizer is not used for which crop.

|           |          |               |                |
|-----------|----------|---------------|----------------|
| a) Cotton | b) Wheat | c) Sugar cane | ✓d) Paddy rice |
|-----------|----------|---------------|----------------|

570) Which one is not a meta directing group ?

|            |           |           |             |
|------------|-----------|-----------|-------------|
| a) $-COOH$ | b) $-CHO$ | c) $-COR$ | ✓d) $-NH_2$ |
|------------|-----------|-----------|-------------|

571) Reaction of alkyl halide with  $NH_3$  gives .

|             |            |                 |          |
|-------------|------------|-----------------|----------|
| a) Nitriles | ✓b) Amines | c) Nitro alkane | d) Imine |
|-------------|------------|-----------------|----------|

572) The fibre which is made from acrylonitrile as monomer:

|        |                |                   |                    |
|--------|----------------|-------------------|--------------------|
| a) PVC | b) Rayon fibre | ✓c) Acrylic fibre | d) Polyester fibre |
|--------|----------------|-------------------|--------------------|

573) The pH of unpolluted rain water should be.

|         |          |         |         |
|---------|----------|---------|---------|
| a) 5.00 | ✓b) 5.60 | c) 6.50 | d) 7.00 |
|---------|----------|---------|---------|

574) Dolomite is .

|             |                           |             |               |
|-------------|---------------------------|-------------|---------------|
| a) $CaCO_3$ | ✓b) $MgCO_3 \cdot CaCO_3$ | c) $MgCO_3$ | d) $Na_2CO_3$ |
|-------------|---------------------------|-------------|---------------|

575) In which case the C - C bond length is same between all atoms in molecule ?

|            |             |             |             |
|------------|-------------|-------------|-------------|
| a) Propyne | b) 1-Butene | c) 2-Butene | ✓d) Benzene |
|------------|-------------|-------------|-------------|

576) ..... compound shows extensive hydrogen bonding with water.

|             |           |                |             |
|-------------|-----------|----------------|-------------|
| a) $C_2H_6$ | b) $H_2S$ | ✓c) $C_2H_5OH$ | d) $CH_3Cl$ |
|-------------|-----------|----------------|-------------|

577) Select from following the one which is alcohol .



|                                       |                              |                             |                                      |
|---------------------------------------|------------------------------|-----------------------------|--------------------------------------|
| ✓a) $\text{CH}_3\text{CH}_2\text{OH}$ | b) $\text{CH}_3\text{OCH}_3$ | c) $\text{CH}_3\text{COOH}$ | d) $\text{CH}_3\text{CH}_2\text{Br}$ |
|---------------------------------------|------------------------------|-----------------------------|--------------------------------------|

578) Methyl alcohol is not used.

|                 |                              |                                |                                    |
|-----------------|------------------------------|--------------------------------|------------------------------------|
| a) As a solvent | b) As an anti freezing agent | ✓c) As a substitute for petrol | d) For denaturing of ethyl alcohol |
|-----------------|------------------------------|--------------------------------|------------------------------------|

579) The nitrogen present in some fertilizers helps plants

|                              |                              |                   |                        |
|------------------------------|------------------------------|-------------------|------------------------|
| a) To fight against diseases | b) To undergo photosynthesis | c) To produce fat | ✓d) To produce protein |
|------------------------------|------------------------------|-------------------|------------------------|

580) Neo - Pentane is .

|             |               |              |                 |
|-------------|---------------|--------------|-----------------|
| a) Aromatic | ✓b) Aliphatic | c) Alicyclic | d) Heterocyclic |
|-------------|---------------|--------------|-----------------|

581) Ketones are prepared by the oxidation of

|                    |                     |                       |                 |
|--------------------|---------------------|-----------------------|-----------------|
| a) Primary alcohol | b) Tertiary alcohol | ✓c) Secondary alcohol | d) All of these |
|--------------------|---------------------|-----------------------|-----------------|

582) Which of the following has the highest first ionization energy ?

|      |       |      |      |
|------|-------|------|------|
| a) B | ✓b) C | c) O | d) N |
|------|-------|------|------|

583) Which of the following enzymes is not involved in alcoholic fermentation ?

|             |            |           |              |
|-------------|------------|-----------|--------------|
| a) Duastase | ✓b) Urease | c) Zymase | d) Invertase |
|-------------|------------|-----------|--------------|

584)  $\beta$  - elimination is bimolecular elimination when it involves.

|                         |                         |                           |                        |
|-------------------------|-------------------------|---------------------------|------------------------|
| a) First order kinetics | b) Third order kinetics | ✓c) Second order kinetics | d) Zero order kinetics |
|-------------------------|-------------------------|---------------------------|------------------------|

585) Carbocyclic compounds containing a benzene ring are categorized as .

|              |              |              |            |
|--------------|--------------|--------------|------------|
| a) Alicyclic | ✓b) Aromatic | c) Aliphatic | d) Acyclic |
|--------------|--------------|--------------|------------|

586) In  $\text{SN}_1$  reaction , the first step is the formation of .

|              |                 |                 |                  |
|--------------|-----------------|-----------------|------------------|
| a) Carbanion | b) Free radical | ✓c) Carbocation | d) None of these |
|--------------|-----------------|-----------------|------------------|

587) Linear shape is associated with set of hybrid Orbitals?

|                 |                  |                   |                  |
|-----------------|------------------|-------------------|------------------|
| ✓a) $\text{sp}$ | b) $\text{sp}^2$ | c) $\text{dsp}^2$ | d) $\text{sp}^3$ |
|-----------------|------------------|-------------------|------------------|

588) Which of the following statements is correct ?

|                                       |   |  |  |
|---------------------------------------|---|--|--|
| a) Aluminium is used for making ships | b) Aluminium is less conductor of electricity than iron | ✓c) Aluminium is used to remove air bubbles form molten metals in their extraction methods | d) Aluminium is an excellent oxidizing agent |
|---------------------------------------|---|--|--|

589) Polypeptide has molecular mass upto.

|            |           |         |       |
|------------|-----------|---------|-------|
| ✓a) 10,000 | b) 20,000 | c) 1000 | d) 10 |
|------------|-----------|---------|-------|

590) When sugar is treated with Conc .  $\text{H}_2\text{SO}_4$  , it becomes black due to .

|                    |                 |               |              |
|--------------------|-----------------|---------------|--------------|
| a) Decolourization | ✓b) Dehydration | c) Hydrolysis | d) Hydration |
|--------------------|-----------------|---------------|--------------|

591) The polymer which can be softened and hardened by heating and cooling is called.



|                    |                   |             |         |
|--------------------|-------------------|-------------|---------|
| ✓a) Thermo plastic | b) Thermo setting | c) Proteins | d) Fats |
|--------------------|-------------------|-------------|---------|

592) Sequence of use of enzymes in alcohol fermentation is .

|                                |                                 |                                |                                |
|--------------------------------|---------------------------------|--------------------------------|--------------------------------|
| a) Zymase – Maltase – Diastase | ✓b) Diastase – Maltase – Zymase | c) Maltase – Diastase – Zymase | d) Diastase – Zymase – Maltase |
|--------------------------------|---------------------------------|--------------------------------|--------------------------------|

593) Acetaldehyde and acetic acid can be distinguished with .

|                             |         |  |                   |
|-----------------------------|---------|--|-------------------|
| a) $\text{Na}_2\text{SO}_4$ | b) NaOH | ✓c) $\text{AgNO}_3 + \text{NH}_4\text{OH}$ | d) Help of litmus |
|-----------------------------|---------|--|-------------------|

594) Which enzyme is not involved in fermentation of starch?

|              |           |           |              |
|--------------|-----------|-----------|--------------|
| ✓a) Diastase | b) Zymase | c) Urease | d) Invertase |
|--------------|-----------|-----------|--------------|

595) What is general electronic configuration of VI-A group elements ?

|                |                 |                |                |
|----------------|-----------------|----------------|----------------|
| a) $ns^2 np^4$ | ✓b) $ns^2 np^3$ | c) $ns^2 np^2$ | d) $ns^2 np^5$ |
|----------------|-----------------|----------------|----------------|

596) The formula of starch is .

|  |   |  |   |
|--|---|--|---|
| a) $\text{C}_{12}\text{H}_{22}\text{O}_{11}$ | ✓b) $(\text{C}_6\text{H}_{10}\text{O}_5)_n$ | c) $\text{C}_6\text{H}_{22}\text{O}_6$ | d) $(\text{C}_6\text{H}_9\text{O}_4)_n$ |
|--|---|--|---|

597) The presence of a double bond in a compound is the sign of

|               |                  |                 |                  |
|---------------|------------------|-----------------|------------------|
| a) Saturation | ✓b) Unsaturation | c) Substitution | d) None of these |
|---------------|------------------|-----------------|------------------|

598) According to Lewis concept, ethers behave as.

|         |          |                |            |
|---------|----------|----------------|------------|
| a) Acid | ✓b) Base | c) Nucleophile | d) Solvent |
|---------|----------|----------------|------------|

599) The modern periodic table reveals that the elements are

|  |                            |  |  |
|--|----------------------------|--|--|
| a) Arranged in the order of increasing atomic weight | b) Taken in group of eight | ✓c) Arranged in the order of increasing no . of protons in the nucleus | d) Arranged in the order of increasing no . of neutrons in the nucleus |
|--|----------------------------|--|--|

600) Alkyl nitriles can be prepared by treating alkyl halides with alcoholic .

|                    |                       |                        |                    |
|--------------------|-----------------------|------------------------|--------------------|
| a) Calcium cyanide | ✓b) Potassium cyanide | c) Phosphorous cyanide | d) Calcium carbide |
|--------------------|-----------------------|------------------------|--------------------|

601) The conversion of n-hexane into benzene by heating in the presence of Pt is called:

|                  |                 |                   |                  |
|------------------|-----------------|-------------------|------------------|
| a) Isomerization | b) Dealkylation | ✓c) Aromatization | d) Rearrangement |
|------------------|-----------------|-------------------|------------------|

602) Opal is a hydrated variety of \_\_\_\_\_

|            |         |            |                  |
|------------|---------|------------|------------------|
| a) Silicon | b) Sand | ✓c) Quartz | d) None of these |
|------------|---------|------------|------------------|

603) Which one of the following elements is not alkali ?

|       |        |       |       |
|-------|--------|-------|-------|
| a) Na | ✓b) Sr | c) Cs | d) Fr |
|-------|--------|-------|-------|

604) The formula of pyroboric acid is .

|                            |                   |                                     |                                      |
|----------------------------|-------------------|-------------------------------------|--------------------------------------|
| a) $\text{H}_3\text{BO}_3$ | b) $\text{HBO}_2$ | c) $\text{H}_2\text{B}_4\text{O}_7$ | ✓d) $\text{H}_6\text{B}_4\text{O}_9$ |
|----------------------------|-------------------|-------------------------------------|--------------------------------------|

605)  $\text{CO}_2\text{H}$  is a functional group.

|           |             |              |             |
|-----------|-------------|--------------|-------------|
| a) Alkoxy | b) Carbonyl | ✓c) Carboxyl | d) Hydroxyl |
|-----------|-------------|--------------|-------------|



606) Which of the following compounds of Nitrogen are not stable ?

|             |           |             |             |
|-------------|-----------|-------------|-------------|
| a) Hydrides | b) Oxides | c) Nitrides | ✓d) Halides |
|-------------|-----------|-------------|-------------|

607) Acetic usually exists as .

|            |           |           |            |
|------------|-----------|-----------|------------|
| a) Monomer | ✓b) Dimer | c) Trimer | d) Polymer |
|------------|-----------|-----------|------------|

608) Which one of the following gases is used for artificial ripening of fruits.

|            |           |            |            |
|------------|-----------|------------|------------|
| ✓a) Ethene | b) Ethyne | c) Methane | d) Propane |
|------------|-----------|------------|------------|

609) A heterocyclic compound with molecular formula  $C_4H_5N$  is called .

|             |              |             |                |
|-------------|--------------|-------------|----------------|
| a) Pyridine | b) Piperidin | ✓c) Pyrrole | d) Pyrrolidine |
|-------------|--------------|-------------|----------------|

610) Which of the following gas will turn lime water milky?

|           |           |       |            |
|-----------|-----------|-------|------------|
| a) $Cl_2$ | b) $NO_2$ | c) CO | ✓d) $CO_2$ |
|-----------|-----------|-------|------------|

611) The compound containing triple bond are called .

|           |           |            |                  |
|-----------|-----------|------------|------------------|
| a) Alkane | b) Alkene | ✓c) Alkyne | d) None of these |
|-----------|-----------|------------|------------------|

612) Aqua Regia is a mixture of conc.  $HNO_3$  and conc.  $HCl$ , its reactivity is due to the evolution of a gas .

|       |           |            |           |
|-------|-----------|------------|-----------|
| a) NO | b) $NO_2$ | ✓c) $Cl_2$ | d) $N_2O$ |
|-------|-----------|------------|-----------|

613) Aromatic hydrocarbons are the derivatives of

|                               |             |           |                |
|-------------------------------|-------------|-----------|----------------|
| a) Normal series of paraffins | ✓b) Benzene | c) Alkene | d) Cyclohexane |
|-------------------------------|-------------|-----------|----------------|

614) Keeping in view the size of atoms, which order is the correct one ?

|              |               |              |             |
|--------------|---------------|--------------|-------------|
| a) $Mg > Sr$ | ✓b) $Ba > Mg$ | c) $Lu > Ce$ | d) $Cl > I$ |
|--------------|---------------|--------------|-------------|

615) Which compound shows maximum hydrogen bonding with water?

|              |               |                      |               |
|--------------|---------------|----------------------|---------------|
| ✓a) $CH_3OH$ | b) $C_2H_5OH$ | c) $CH_3 - O - CH_3$ | d) $C_6H_5OH$ |
|--------------|---------------|----------------------|---------------|

616) One of the following is orgillaceous material .

|         |           |                  |         |
|---------|-----------|------------------|---------|
| a) Clay | b) Marble | ✓c) Marine shell | d) Lime |
|---------|-----------|------------------|---------|

617) A carboxylic Acid is treated with lime water, the product is distilled in dry state, if forms acetone, the carboxylic acid is

|            |                |                   |                  |
|------------|----------------|-------------------|------------------|
| a) $HCOOH$ | ✓b) $CH_3COOH$ | c) Propionic acid | d) Succinic acid |
|------------|----------------|-------------------|------------------|

618) Prilling is a process in which .

|                                       |  |                               |                                       |
|---------------------------------------|--|-------------------------------|---------------------------------------|
| a) Concentration of urea is decreased | ✓b) Molten urea is converted to solid granules | c) Water is removed from urea | d) Some ingredients are added to urea |
|---------------------------------------|--|-------------------------------|---------------------------------------|

619) Which one of the following elements can have only negative oxidation states .

|       |       |      |       |
|-------|-------|------|-------|
| a) Br | ✓b) F | c) I | d) Cl |
|-------|-------|------|-------|

620) Chemical composition of colemanite is .



|  |   |  |   |
|--|---|--|---|
| ✓a) $\text{Ca}_2\text{B}_6\text{O}_{11} \cdot 5\text{H}_2\text{O}$ | b) $\text{CaB}_4\text{O}_7 \cdot 4\text{H}_2\text{O}$ | c) $\text{Na}_2\text{B}_4\text{O}_7 \cdot 4\text{H}_2\text{O}$ | d) $\text{CaNaB}_4\text{O}_9 \cdot 8\text{H}_2\text{O}$ |
|--|---|--|---|

621) \_\_\_\_\_ is used as a cooling medium for nuclear reactors.

|       |        |       |       |
|-------|--------|-------|-------|
| a) Ne | ✓b) He | c) Ar | d) Kr |
|-------|--------|-------|-------|

622) Which one is the heterocyclic compound of oxygen ?

|             |           |           |              |
|-------------|-----------|-----------|--------------|
| a) Pyridine | b) Pyrole | ✓c) Furan | d) Thiophene |
|-------------|-----------|-----------|--------------|

623) For bleaching powder which statement is incorrect ?

|   |                             |                                 |                    |
|---|-----------------------------|---------------------------------|--------------------|
| a) Reacts with dilute acid to release $\text{Cl}_2$ | ✓b) Highly soluble in water | c) Light yellow coloured powder | d) Oxidizing agent |
|---|-----------------------------|---------------------------------|--------------------|

624) The fractional distillation of petroleum yield only about \_\_\_\_\_ gasoline.

|         |          |         |         |
|---------|----------|---------|---------|
| a) 10 % | ✓b) 20 % | c) 30 % | d) 40 % |
|---------|----------|---------|---------|

625) Which one is not a carboxylic Acid ?

|                |                |                   |                  |
|----------------|----------------|-------------------|------------------|
| a) Acetic Acid | b) Formic Acid | ✓c) Carbolic Acid | d) Phthalic Acid |
|----------------|----------------|-------------------|------------------|

626) Sodium hydroxide is manufactured on large scale in \_\_\_\_\_.

|              |                    |               |                  |
|--------------|--------------------|---------------|------------------|
| a) Down cell | ✓b) Diaphragm cell | c) Both A & B | d) None of these |
|--------------|--------------------|---------------|------------------|

627) Which in more soluble compound in  $\text{H}_2\text{O}$ .

|               |              |           |                |
|---------------|--------------|-----------|----------------|
| a) I Propanol | ✓b) Methanol | c) Phenol | d) n - Hezanol |
|---------------|--------------|-----------|----------------|

628) Which one of these elements is a typical transition element.

|        |       |       |       |
|--------|-------|-------|-------|
| ✓a) Ni | b) Zn | c) Cd | d) Hg |
|--------|-------|-------|-------|

629) A trivial name of methane is .

|             |                |               |                |
|-------------|----------------|---------------|----------------|
| a) Coal gas | b) Natural gas | ✓c) Marsh gas | d) Mustard gas |
|-------------|----------------|---------------|----------------|

630) Which of the following is not characteristic property of carbon ?

|                            |               |   |   |
|----------------------------|---------------|---|---|
| a) Multiple bond formation | b) Catenation | c) Highest electronegative element of group | ✓d) Availability of d orbital for bonding |
|----------------------------|---------------|---|---|

631) Which of the following fertilizers contains 46% N ?

|                  |                                |                             |                   |
|------------------|--------------------------------|-----------------------------|-------------------|
| a) $\text{NH}_3$ | ✓b) $(\text{NH}_2)_2\text{CO}$ | c) $\text{NH}_4\text{NO}_3$ | d) $\text{KNO}_3$ |
|------------------|--------------------------------|-----------------------------|-------------------|

632) Which one of the following statements about glucose and sucrose is incorrect?

|                              |                           |                                 |                            |
|------------------------------|---------------------------|---------------------------------|----------------------------|
| a) Both are soluble in water | b) Both are carbohydrates | c) Both are naturally occurring | ✓d) Both are disaccharides |
|------------------------------|---------------------------|---------------------------------|----------------------------|

633) Which halogen occurs naturally in a positive oxidation state?

|             |             |            |            |
|-------------|-------------|------------|------------|
| a) Fluorine | b) Chlorine | c) Bromine | ✓d) Iodine |
|-------------|-------------|------------|------------|

634) The anhydride of  $\text{HClO}_4$  is.

|                   |                   |                            |                             |
|-------------------|-------------------|----------------------------|-----------------------------|
| a) $\text{ClO}_3$ | b) $\text{ClO}_2$ | c) $\text{Cl}_2\text{O}_5$ | ✓d) $\text{Cl}_2\text{O}_7$ |
|-------------------|-------------------|----------------------------|-----------------------------|



635) Gold dissolves in aqua regia to form .

|                     |                   |                   |                                 |
|---------------------|-------------------|-------------------|---------------------------------|
| ✓a) $\text{AuCl}_3$ | b) $\text{AuI}_3$ | c) $\text{AuI}_2$ | d) $\text{Au}_2(\text{SO}_4)_3$ |
|---------------------|-------------------|-------------------|---------------------------------|

636) The percentage of alumina in portland cement is .

|         |          |          |           |
|---------|----------|----------|-----------|
| a) 22 % | b) 3.5 % | c) 2.5 % | ✓d) 7.5 % |
|---------|----------|----------|-----------|

637) Starch is.

|                   |                 |                    |                    |
|-------------------|-----------------|--------------------|--------------------|
| a) Monosaccharide | b) Disaccharide | ✓c) Polysaccharide | d) Oligosaccharide |
|-------------------|-----------------|--------------------|--------------------|

638) A double bond consists of.

|                    |                               |                               |                 |
|--------------------|-------------------------------|-------------------------------|-----------------|
| a) Two sigma bonds | ✓b) One sigma and one pi bond | c) One sigma and two Pi bonds | d) Two Pi bonds |
|--------------------|-------------------------------|-------------------------------|-----------------|

639) Which is more acidic oxide in following .

|                 |                            |                    |                            |
|-----------------|----------------------------|--------------------|----------------------------|
| a) $\text{MnO}$ | b) $\text{Mn}_2\text{O}_3$ | ✓c) $\text{MnO}_2$ | d) $\text{Mn}_2\text{O}_7$ |
|-----------------|----------------------------|--------------------|----------------------------|

640) Baeyer's reagent is used to identify .

|            |            |           |            |
|------------|------------|-----------|------------|
| ✓a) Ethene | b) Methane | c) Ethane | d) Ethanol |
|------------|------------|-----------|------------|

641) Formula of urea .

|                                |                               |                           |                  |
|--------------------------------|-------------------------------|---------------------------|------------------|
| ✓a) $(\text{NH}_2)_2\text{CO}$ | b) $(\text{NH}_3)_2\text{CO}$ | c) $\text{NH}_2\text{CO}$ | d) None of these |
|--------------------------------|-------------------------------|---------------------------|------------------|

642) Hydrogen bond is the strongest between the molecules of.

|       |        |        |        |
|-------|--------|--------|--------|
| a) HF | b) HCl | c) HBr | ✓d) HI |
|-------|--------|--------|--------|

643) Which element forms an ion with charge 3+.

|              |               |           |            |
|--------------|---------------|-----------|------------|
| a) Beryllium | ✓b) Aluminium | c) Carbon | d) Silicon |
|--------------|---------------|-----------|------------|

644) The state of hybridization of carbon atom in Ethyne .

|        |                  |                   |                  |
|--------|------------------|-------------------|------------------|
| ✓a) sp | b) $\text{sp}^2$ | c) $\text{dsp}^2$ | d) $\text{sp}^3$ |
|--------|------------------|-------------------|------------------|

645) Transition elements form complexes because they have .

|                |                         |                          |                         |
|----------------|-------------------------|--------------------------|-------------------------|
| a) Small sizes | ✓b) Vacant d - orbitals | c) Strong binding energy | d) Large nuclear charge |
|----------------|-------------------------|--------------------------|-------------------------|

646) Which of the following does not form boric acid ?

|                |                                    |                                 |                    |
|----------------|------------------------------------|---------------------------------|--------------------|
| a) Borax + HCl | b) Borax + $\text{H}_2\text{SO}_4$ | c) Borax + $\text{H}_2\text{O}$ | ✓d) Borax + Copper |
|----------------|------------------------------------|---------------------------------|--------------------|

647) Compounds of alkaline earth metals are less soluble in water than the corresponding alkali metals , because of .

|                        |                                 |                           |  |
|------------------------|---------------------------------|---------------------------|--|
| a) High lattice energy | b) Their high electronegativity | c) High ionization energy | ✓d) Their increased covalent character |
|------------------------|---------------------------------|---------------------------|--|

648) The colour of transition metal complexes is due to

|                                  |  |                |                         |
|----------------------------------|--|----------------|-------------------------|
| ✓a) d-d transition of electrons. | b) Paramagnetic nature of transition elements. | c) Ionization. | d) loss of s-electrons. |
|----------------------------------|--|----------------|-------------------------|

649) The colour of transition metal complexes is due to.



|                                  |   |               |                        |
|----------------------------------|---|---------------|------------------------|
| ✓a) d-d transitions of electrons | b) Paramagnetic nature of transition elements | c) Ionization | d) Loss of s-electrons |
|----------------------------------|---|---------------|------------------------|

650) Most organic compound are insoluble in \_\_\_\_\_ and dissolve readily in non - polar solvents .

|            |           |           |                  |
|------------|-----------|-----------|------------------|
| a) Benzene | ✓b) Water | c) Ethene | d) None of these |
|------------|-----------|-----------|------------------|

651) Hydrogen combine with other element through \_\_\_\_\_ bond .

|          |              |                         |                  |
|----------|--------------|-------------------------|------------------|
| a) Ionic | ✓b) Covalent | c) Co-ordinate covalent | d) None of these |
|----------|--------------|-------------------------|------------------|

652) Alcohol , phenol and ethers are much closer to water in structure , so they are called .

|                       |                   |                         |                   |
|-----------------------|-------------------|-------------------------|-------------------|
| a) Inorganic compound | b) Carboxyl group | ✓c) Derivative of water | d) Water molecule |
|-----------------------|-------------------|-------------------------|-------------------|

653) Which of the following has three allotropic forms .

|           |             |             |              |
|-----------|-------------|-------------|--------------|
| a) Oxygen | ✓b) Sulphur | c) Selenium | d) Tellurium |
|-----------|-------------|-------------|--------------|

654) Natron has the chemical formula .

|                    |                   |   |                             |
|--------------------|-------------------|---|-----------------------------|
| a) $\text{NaNO}_3$ | b) $\text{KNO}_2$ | ✓c) $\text{Na}_2\text{CO}_3 \cdot \text{H}_2\text{O}$ | d) $\text{Ca}_2\text{CO}_3$ |
|--------------------|-------------------|---|-----------------------------|

655) Addition of  $\text{O}_2$  in ethane in the presence of Ag gives .

|                    |           |            |                |
|--------------------|-----------|------------|----------------|
| ✓a) Ethylene oxide | b) Ethane | c) Ethanol | d) Acetic acid |
|--------------------|-----------|------------|----------------|

656) Hydrolysis of Ter. Butyl bromide follows  $\text{S}_{\text{N}}1$  mechanism . The rate is

|                               |                               |                                      |  |
|-------------------------------|-------------------------------|--------------------------------------|--|
| a) Greater with $\text{OH}^-$ | ✓b) Greater with alkyl halide | c) Greater with $\text{H}_2\text{O}$ | d) Equal with $\text{OH}^-$ and $\text{H}_2\text{O}$ |
|-------------------------------|-------------------------------|--------------------------------------|--|

657) Potassium present in fertilizers helps the growth of.

|                             |         |         |           |
|-----------------------------|---------|---------|-----------|
| ✓a) Seed , food and cereals | b) Root | c) Stem | d) Leaves |
|-----------------------------|---------|---------|-----------|

658) Alkyl halides ( monohaloalkanes ) are named according to the nature of the alkyl group to which \_\_\_\_\_ is attached .

|                  |                  |           |             |
|------------------|------------------|-----------|-------------|
| ✓a) Halogen atom | b) Nitrogen atom | c) Oxygen | d) Chlorine |
|------------------|------------------|-----------|-------------|

659) Which of the following represents the correct electronic configuration of the outermost energy level of an element of zero (VIII A) group in the ground state.

|             |             |             |              |
|-------------|-------------|-------------|--------------|
| a) $s^2p^2$ | b) $s^2p^4$ | c) $s^2p^5$ | ✓d) $s^2p^6$ |
|-------------|-------------|-------------|--------------|

660) Decomposition of  $\text{NO}_2$  to NO and  $\text{O}_2$  takes place at .

|                        |                        |                         |                        |
|------------------------|------------------------|-------------------------|------------------------|
| a) $630^\circ\text{C}$ | b) $625^\circ\text{C}$ | ✓c) $620^\circ\text{C}$ | d) $615^\circ\text{C}$ |
|------------------------|------------------------|-------------------------|------------------------|

661) Benzene is resistant to \_\_\_\_\_

|                 |                 |               |              |
|-----------------|-----------------|---------------|--------------|
| a) Halogenation | b) Sulphonation | ✓c) Oxidation | d) Reduction |
|-----------------|-----------------|---------------|--------------|

662) Plastics are a pollution problem because many plastics

|                            |                         |                                 |  |
|----------------------------|-------------------------|---------------------------------|--|
| a) Are made from petroleum | b) Are very inflammable | ✓c) Burn to produce toxic fumes | d) Decompose to produce toxic products |
|----------------------------|-------------------------|---------------------------------|--|

663) All halogens act as oxidizing agents when .



|                                   |                             |                                  |                |
|-----------------------------------|-----------------------------|----------------------------------|----------------|
| a) They combine with non - metals | b) They combine with metals | c) They combine with noble gases | ✓d) Both A & C |
|-----------------------------------|-----------------------------|----------------------------------|----------------|

664) In benzene the C-C bond length is .

|           |            |           |           |
|-----------|------------|-----------|-----------|
| a) 1.54 Å | ✓b) 1.39 Å | c) 1.34 Å | d) 1.20 Å |
|-----------|------------|-----------|-----------|

665) The most-reactive alcohol when O - H bond breaks is.

|             |                      |                    |                    |
|-------------|----------------------|--------------------|--------------------|
| a) Tertiary | b) Secondary alcohol | c) Primary alcohol | ✓d) Methyl alcohol |
|-------------|----------------------|--------------------|--------------------|

666) Which of the following radicals give blue colour ( in cold and hot state ) in oxidizing flame when subjected to Borax Bead test ?

|                      |                     |                     |                     |
|----------------------|---------------------|---------------------|---------------------|
| ✓a) $\text{Cu}^{+2}$ | b) $\text{Co}^{+2}$ | c) $\text{Cr}^{+3}$ | d) $\text{Ni}^{+2}$ |
|----------------------|---------------------|---------------------|---------------------|

667) The IUPAC names of aldehydes are derived from.

|             |            |            |             |
|-------------|------------|------------|-------------|
| ✓a) Alkanes | b) Alkenes | c) Alkynes | d) Alcohols |
|-------------|------------|------------|-------------|

668) Molecular formula of white phosphorus is .

|                  |      |                 |                 |
|------------------|------|-----------------|-----------------|
| ✓a) $\text{P}_4$ | b) P | c) $\text{P}_3$ | d) $\text{P}_2$ |
|------------------|------|-----------------|-----------------|

669) Which statement is correct for phenol ?

|                                |   |   |   |
|--------------------------------|---|---|---|
| a) It turns blue litmus to red | ✓b) Its Phenoxide ion is stable in $\text{H}_2\text{O}$ | c) It gives $\text{CO}_2$ with $\text{NaHCO}_3$ | d) It is stronger acid than carboxylic acid |
|--------------------------------|---|---|---|

670) In t-butyl alcohol, the tertiary carbon is bonded to:

|                       |                      |                        |                      |
|-----------------------|----------------------|------------------------|----------------------|
| a) Two hydrogen atoms | b) One hydrogen atom | c) Three hydrogen atom | ✓d) No hydrogen atom |
|-----------------------|----------------------|------------------------|----------------------|

671) Which one is a Friedel Crafts catalyst?

|                   |                   |                     |                             |
|-------------------|-------------------|---------------------|-----------------------------|
| a) $\text{PCl}_5$ | b) $\text{PCl}_3$ | ✓c) $\text{AlCl}_3$ | d) $\text{Al}(\text{OH})_3$ |
|-------------------|-------------------|---------------------|-----------------------------|

672) The oxygen atom has a partial negative charge on it is a .

|                  |                  |               |                  |
|------------------|------------------|---------------|------------------|
| a) Electrophilic | ✓b) Nucleophilic | c) Both A & B | d) None of these |
|------------------|------------------|---------------|------------------|

673) Hydrogen can form bond with \_\_\_\_\_ element at a time .

|       |      |      |      |
|-------|------|------|------|
| ✓a) 1 | b) 2 | c) 3 | d) 4 |
|-------|------|------|------|

674) Which catalyst is used in contact process?

|                            |                            |                  |                          |
|----------------------------|----------------------------|------------------|--------------------------|
| a) $\text{Fe}_2\text{O}_3$ | ✓b) $\text{V}_2\text{O}_5$ | c) $\text{SO}_3$ | d) $\text{Ag}_2\text{O}$ |
|----------------------------|----------------------------|------------------|--------------------------|

675) \_\_\_\_\_ does not undergo polymerization .

|             |           |           |                  |
|-------------|-----------|-----------|------------------|
| ✓a) Benzene | b) Alkene | c) Alkane | d) None of these |
|-------------|-----------|-----------|------------------|

676) The solubility of Borax at  $100^\circ\text{C}$  is .

|  |   |  |   |
|--|---|--|---|
| a) 1400 gram in 100 gram of $\text{H}_2\text{O}$ | b) 4 gram in 100 gram of $\text{H}_2\text{O}$ | c) 99 gram in 100 gram of $\text{H}_2\text{O}$ | ✓d) 99.3 gram in 100 gram of $\text{H}_2\text{O}$ |
|--|---|--|---|

677) Which is the pair of metalloids ?

|             |             |               |              |
|-------------|-------------|---------------|--------------|
| a) Na and K | b) F and Cl | ✓c) As and Sb | d) Cu and Au |
|-------------|-------------|---------------|--------------|



678) Which compound is more soluble in water?

|   |               |                 |                |
|---|---------------|-----------------|----------------|
| <input checked="" type="checkbox"/> a) $C_2H_5OH$ | b) $C_6H_5OH$ | c) $CH_3COCH_3$ | d) n - hexanol |
|---|---------------|-----------------|----------------|

679) The strength of binding energy of transition elements depends upon.

|                             |  |                       |                      |
|-----------------------------|--|-----------------------|----------------------|
| a) Number of electron pairs | <input checked="" type="checkbox"/> b) Number of unpaired electron | c) Number of neutrons | d) Number of protons |
|-----------------------------|--|-----------------------|----------------------|

680) Which three elements are needed for the healthy growth of plants.

|          |             |   |           |
|----------|-------------|---|-----------|
| a) N,S,P | b) N, Ca, P | <input checked="" type="checkbox"/> c) N ,P K | d) N ,K,C |
|----------|-------------|---|-----------|

681) Which halogen will react spontaneously with  $Au(s)$  to produce  $Au^{3+}$ ?

|   |          |          |           |
|---|----------|----------|-----------|
| <input checked="" type="checkbox"/> a) $Br_2$ | b) $F_2$ | c) $I_2$ | d) $Cl_2$ |
|---|----------|----------|-----------|

682) The general formula for haloform is .

|  |              |            |           |
|--|--------------|------------|-----------|
| <input checked="" type="checkbox"/> a) $CHX_3$ | b) $CH_2X_2$ | c) $CH_3X$ | d) $CX_4$ |
|--|--------------|------------|-----------|

683) Which compound will have the maximum repulsion with  $H_2O$ ?

|   |               |                     |                  |
|---|---------------|---------------------|------------------|
| <input checked="" type="checkbox"/> a) $C_6H_6$ | b) $C_2H_5OH$ | c) $CH_3CH_2CH_2OH$ | d) $CH_3-O-CH_3$ |
|---|---------------|---------------------|------------------|

684) Reforming is a process used to produce .

|  |                      |                             |                          |
|--|----------------------|-----------------------------|--------------------------|
| <input checked="" type="checkbox"/> a) Branched chain hydrocarbons | b) $CO_2$ and $H_2O$ | c) Unsaturated hydrocarbons | d) Aromatic hydrocarbons |
|--|----------------------|-----------------------------|--------------------------|

685) Addition of water to acetylene takes place in presence of

|       |   |             |       |
|-------|---|-------------|-------|
| a) Ni | <input checked="" type="checkbox"/> b) $HgSO_4/H_2SO_4$ | c) $ZnCl_2$ | d) Cu |
|-------|---|-------------|-------|

686) The Strongest acid in halogen acid is solution is .

|       |        |        |   |
|-------|--------|--------|---|
| a) HF | b) HCl | c) HBr | <input checked="" type="checkbox"/> d) HI |
|-------|--------|--------|---|

687) Which one is an unsaturated carboxylic acid ?

|                   |  |                  |                |
|-------------------|--|------------------|----------------|
| a) Propanoic acid | <input checked="" type="checkbox"/> b) Oxalic acid | c) Succinic acid | d) Maleic acid |
|-------------------|--|------------------|----------------|

688) Vinyl acetylene combines with HCl to form

|                  |  |            |                      |
|------------------|--|------------|----------------------|
| a) Polyacetylene | <input checked="" type="checkbox"/> b) Chloroprene | c) Benzene | d) Divinyl acetylene |
|------------------|--|------------|----------------------|

689) Fungicides are the pesticides which.

|                                 |                 |                |   |
|---------------------------------|-----------------|----------------|---|
| a) Control the growth of fungus | b) Kill insects | c) Kill plants | <input checked="" type="checkbox"/> d) Kill herbs |
|---------------------------------|-----------------|----------------|---|

690) How many resonance structures of benzene are known .

|      |      |  |      |
|------|------|--|------|
| a) 3 | b) 4 | <input checked="" type="checkbox"/> c) 5 | d) 6 |
|------|------|--|------|

691) Which of the following shows phosphorescence ?

|             |            |  |          |
|-------------|------------|--|----------|
| a) Yellow P | b) Black P | <input checked="" type="checkbox"/> c) White P | d) Red P |
|-------------|------------|--|----------|

692) Which of the following elements is not present abundantly in earth's crust ?



|            |              |            |           |
|------------|--------------|------------|-----------|
| a) Silicon | b) Aluminium | ✓c) Sodium | d) Oxygen |
|------------|--------------|------------|-----------|

693) Chlorine heptaoxide ( $\text{Cl}_2\text{O}_7$ ) reacts with water to form:

|                      |                     |                 |                        |
|----------------------|---------------------|-----------------|------------------------|
| a) Hypochlorous acid | ✓b) Perchloric acid | c) Chloric acid | d) Chlorine and oxygen |
|----------------------|---------------------|-----------------|------------------------|

694) A polymer is a large molecule built up by the repetition of small and simple chemical units known as.

|              |           |              |            |
|--------------|-----------|--------------|------------|
| ✓a) Monomers | b) Dimers | c) Tetramers | d) Trimers |
|--------------|-----------|--------------|------------|

695) In t-butyl alcohol, the tertiary carbon is bonded to.

|                         |                       |                       |                       |
|-------------------------|-----------------------|-----------------------|-----------------------|
| a) Three hydrogen atoms | b) Two hydrogen atoms | c) One hydrogen atoms | ✓d) No hydrogen atoms |
|-------------------------|-----------------------|-----------------------|-----------------------|

696) In group V-A elements the most electronegative element is.

|       |      |       |       |
|-------|------|-------|-------|
| ✓a) N | b) P | c) Sb | d) Bi |
|-------|------|-------|-------|

697) The weakest oxyacid of Cl is .

|                   |                    |                    |                    |
|-------------------|--------------------|--------------------|--------------------|
| ✓a) $\text{HClO}$ | b) $\text{HClO}_2$ | c) $\text{HClO}_3$ | d) $\text{HClO}_4$ |
|-------------------|--------------------|--------------------|--------------------|

698) Which one of the following is intermediate hydride ?

|                 |                            |                   |                             |
|-----------------|----------------------------|-------------------|-----------------------------|
| a) $\text{LiH}$ | b) $\text{Mn}_2\text{O}_3$ | c) $\text{MnO}_2$ | ✓d) $\text{Mn}_2\text{O}_7$ |
|-----------------|----------------------------|-------------------|-----------------------------|

699) Formula of chloroform is.

|                           |                   |                             |                     |
|---------------------------|-------------------|-----------------------------|---------------------|
| a) $\text{CH}_3\text{Cl}$ | b) $\text{CCl}_4$ | c) $\text{CH}_2\text{Cl}_2$ | ✓d) $\text{CHCl}_3$ |
|---------------------------|-------------------|-----------------------------|---------------------|

700) Ethyne when passed into the solution of cuprous chloride and  $\text{NH}_4\text{Cl}$ , it gives .

|                   |                  |                     |            |
|-------------------|------------------|---------------------|------------|
| a) Methyl nitrile | b) Acrylonitrile | ✓c) Vinyl Acetylene | d) Benzene |
|-------------------|------------------|---------------------|------------|

701) Amylacetate has the flavor of .

|            |            |           |            |
|------------|------------|-----------|------------|
| a) Apricot | ✓b) Banana | c) Orange | d) Jasmine |
|------------|------------|-----------|------------|

702) In purification of potable water the coagulant used is

|                    |                    |                    |          |
|--------------------|--------------------|--------------------|----------|
| a) Nickel sulphate | b) Copper sulphate | c) Barium sulphate | ✓d) Alum |
|--------------------|--------------------|--------------------|----------|

703) Which of these polymers is a synthetic polymer?

|               |           |              |               |
|---------------|-----------|--------------|---------------|
| a) Animal fat | b) Starch | c) Cellulose | ✓d) Polyester |
|---------------|-----------|--------------|---------------|

704) Which of the following is mono-saccharide.

|              |            |           |              |
|--------------|------------|-----------|--------------|
| ✓a) Fructose | b) Sucrose | c) Starch | d) Cellulose |
|--------------|------------|-----------|--------------|

705) The compound which have double or triple bond are called .

|                          |                              |               |                  |
|--------------------------|------------------------------|---------------|------------------|
| a) Saturated hydrocarbon | ✓b) Unsaturated hydrocarbons | c) Both A & B | d) None of these |
|--------------------------|------------------------------|---------------|------------------|

706) Which compound is insoluble in water?

|                   |                  |             |                |
|-------------------|------------------|-------------|----------------|
| a) Methyl alcohol | b) Ethyl alcohol | ✓c) Benzene | d) Acetic acid |
|-------------------|------------------|-------------|----------------|

707) Formaldehyde gives metaformaldehyde on

|              |                 |                |                    |
|--------------|-----------------|----------------|--------------------|
| a) Oxidation | b) Condensation | c) Cyclization | ✓d) Polymerization |
|--------------|-----------------|----------------|--------------------|



708) Which of the following groups is an ortho and para directing in disubstitution benzene ?

|                   |                            |  |                   |
|-------------------|----------------------------|--|-------------------|
| a) $-\text{COOH}$ | b) $-\text{N}^+\text{R}_3$ | <input checked="" type="checkbox"/> c) $\text{NH}_2$ | d) $-\text{NO}_2$ |
|-------------------|----------------------------|--|-------------------|

709) Linear shape is associated with which set of hybrid orbitals?

|                  |  |                  |                   |
|------------------|--|------------------|-------------------|
| a) $\text{sp}^2$ | <input checked="" type="checkbox"/> b) $\text{sp}$ | c) $\text{sp}^3$ | d) $\text{dsp}^2$ |
|------------------|--|------------------|-------------------|

710) Which is used in the leather industry ?

|                     |  |               |                |
|---------------------|--|---------------|----------------|
| a) Tetra boric acid | <input checked="" type="checkbox"/> b) Borax | c) Boric acid | d) Boric oxide |
|---------------------|--|---------------|----------------|

711) Which one of the following elements is not present in all proteins?

|           |             |             |  |
|-----------|-------------|-------------|--|
| a) Carbon | b) Hydrogen | c) Nitrogen | <input checked="" type="checkbox"/> d) Sulphur |
|-----------|-------------|-------------|--|

712) \_\_\_\_\_ are organic compound which contain hydrogen and carbon.

|            |              |  |                  |
|------------|--------------|--|------------------|
| a) Sulphur | b) Aliphatic | <input checked="" type="checkbox"/> c) Hydrocarbon | d) None of these |
|------------|--------------|--|------------------|

713) What is % age of calcium phosphate in bone ash ?

|       |       |   |       |
|-------|-------|---|-------|
| a) 20 | b) 40 | <input checked="" type="checkbox"/> c) 80 | d) 60 |
|-------|-------|---|-------|

714) Which allotropic form of phosphorus is very reactive & poisonous ?

|        |          |           |  |
|--------|----------|-----------|--|
| a) Red | b) Black | c) Violet | <input checked="" type="checkbox"/> d) White |
|--------|----------|-----------|--|

715) Which compound shows hydrogen bonding

|                           |                                    |                                       |  |
|---------------------------|------------------------------------|---------------------------------------|--|
| a) $\text{C}_2\text{H}_6$ | b) $\text{C}_2\text{H}_5\text{Cl}$ | c) $\text{CH}_3-\text{O}-\text{CH}_3$ | <input checked="" type="checkbox"/> d) $\text{C}_2\text{H}_5\text{OH}$ |
|---------------------------|------------------------------------|---------------------------------------|--|

716) Which metal is used in the Thermite process because of its reactivity.

|         |           |   |         |
|---------|-----------|---|---------|
| a) Iron | b) Copper | <input checked="" type="checkbox"/> c) Aluminum | d) Zinc |
|---------|-----------|---|---------|

717) How many sigma electrons present in ethylene ?

|      |      |      |   |
|------|------|------|---|
| a) 2 | b) 5 | c) 8 | <input checked="" type="checkbox"/> d) 10 |
|------|------|------|---|

718) Which of the following when reacted with ozone produces methanal ?

|            |   |           |           |
|------------|---|-----------|-----------|
| a) Methane | <input checked="" type="checkbox"/> b) Ethane | c) Ethene | d) Ethyne |
|------------|---|-----------|-----------|

719) Which compound is the most reactive one:

|            |   |           |           |
|------------|---|-----------|-----------|
| a) Benzene | <input checked="" type="checkbox"/> b) Ethene | c) Ethane | d) Ethyne |
|------------|---|-----------|-----------|

720) Which one of the following is a water soluble vitamin?

|           |               |            |  |
|-----------|---------------|------------|--|
| a) Niacin | b) Riboflavin | c) Trypsin | <input checked="" type="checkbox"/> d) Ascorbic acid |
|-----------|---------------|------------|--|

721) The general formula of alkane is

|                              |                                |                                |  |
|------------------------------|--------------------------------|--------------------------------|--|
| a) $\text{C}_n\text{H}_{2n}$ | b) $\text{C}_n\text{H}_{2n-2}$ | c) $\text{C}_n\text{H}_{2n+1}$ | <input checked="" type="checkbox"/> d) $\text{C}_n\text{H}_{2n+2}$ |
|------------------------------|--------------------------------|--------------------------------|--|

722) Vinegar is dilute solution of Acetic Acid .

|            |   |              |              |
|------------|---|--------------|--------------|
| a) 1 - 5 % | <input checked="" type="checkbox"/> b) 4 - 10 % | c) 10 - 15 % | d) 10 - 20 % |
|------------|---|--------------|--------------|

723) Breaking down of large molecule by heating at high temperature and pressure is called \_\_\_\_\_ cracking .

|  |              |          |                  |
|--|--------------|----------|------------------|
| <input checked="" type="checkbox"/> a) Thermal | b) Catalytic | c) Steam | d) None of these |
|--|--------------|----------|------------------|



724) Organic compounds containing  $\text{-CN}$  group are called .

|             |             |             |              |
|-------------|-------------|-------------|--------------|
| a) Cyanides | b) Nitrites | c) Nitrates | ✓d) Nitriles |
|-------------|-------------|-------------|--------------|

725) The Oxide of Boron is .

|            |          |               |          |
|------------|----------|---------------|----------|
| ✓a) Acidic | b) Basic | c) Amphoteric | d) Ionic |
|------------|----------|---------------|----------|

726) The aliphatic monocarboxylic acids are commonly called .

|                  |           |                 |             |
|------------------|-----------|-----------------|-------------|
| a) Carbohydrates | b) Lipids | ✓c) Fatty acids | d) Acetates |
|------------------|-----------|-----------------|-------------|

727) The chemist who synthesized urea from ammonium cyanate was:

|              |          |            |              |
|--------------|----------|------------|--------------|
| a) Berzelius | b) Kolbe | ✓c) Wholer | d) Lavoisier |
|--------------|----------|------------|--------------|

728) For which mechanisms, the first step involved is the same

|              |                                  |                                  |                                   |
|--------------|----------------------------------|----------------------------------|-----------------------------------|
| a) E1 and E2 | b) E2 and $\text{S}_{\text{N}}2$ | c) $\text{S}_{\text{N}}1$ and E2 | ✓d) E1 and $\text{S}_{\text{N}}1$ |
|--------------|----------------------------------|----------------------------------|-----------------------------------|

729) Phosphorus helps the growth of

|         |          |         |          |
|---------|----------|---------|----------|
| a) Root | b) Leave | c) Stem | ✓d) Seed |
|---------|----------|---------|----------|

730) Formaldehyde reacts with Grignard's reagent to produce .

|                      |                       |                      |            |
|----------------------|-----------------------|----------------------|------------|
| ✓a) Primary alcohols | b) Secondary alcohols | c) Tertiary alcohols | d) Sterols |
|----------------------|-----------------------|----------------------|------------|

731) What is coordination number of Fe in  $\text{K}_4[\text{Fe}(\text{CN})_6]$

|      |       |      |      |
|------|-------|------|------|
| a) 4 | ✓b) 6 | c) 2 | d) 3 |
|------|-------|------|------|

732) B differ from IIIA group elements because of

|                                 |                         |                                    |                  |
|---------------------------------|-------------------------|------------------------------------|------------------|
| a) Absence of inert pair effect | b) Absence of d-orbital | c) It's high charge and small size | ✓d) All of these |
|---------------------------------|-------------------------|------------------------------------|------------------|

733) Ethanol can be converted into ethanoic acid by.

|                  |              |               |                 |
|------------------|--------------|---------------|-----------------|
| a) Hydrogenation | b) Hydration | ✓c) Oxidation | d) Fermentation |
|------------------|--------------|---------------|-----------------|

734) Which liquid is called wood spirit ?

|                               |                                       |                             |   |
|-------------------------------|---------------------------------------|-----------------------------|---|
| ✓a) $\text{CH}_3 - \text{OH}$ | b) $\text{C}_2\text{H}_5 - \text{OH}$ | c) $\text{CH}_3\text{COOH}$ | d) $\text{CH}_3 - \text{O} - \text{CH}_3$ |
|-------------------------------|---------------------------------------|-----------------------------|---|

735) Mild steel contains carbon percentage.

|                 |                |                |                |
|-----------------|----------------|----------------|----------------|
| ✓a) 0.1 - 0.2 % | b) 0.3 - 0.7 % | c) 0.7 - 1.5 % | d) 1.6 - 2.0 % |
|-----------------|----------------|----------------|----------------|

736) Which element of group VIA shows the only two covalency ?

|      |       |       |       |
|------|-------|-------|-------|
| a) S | ✓b) O | c) Se | d) Te |
|------|-------|-------|-------|

737) Good fertilizer must be soluble in .

|           |            |          |                  |
|-----------|------------|----------|------------------|
| ✓a) Water | b) Alcohol | c) Ether | d) None of these |
|-----------|------------|----------|------------------|

738) Mark the correct statement .