

(Academic Sessions 2015 – 2017 & 2016 – 2018)

CHEMISTRY

Q.PAPER – II (Objective Type)

218-(INTER PART – II)

Time Allowed : 20 Minutes

GROUP – I

Maximum Marks : 17

PAPER CODE = 8483www.pakcity.org

Note : Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

1-1	The anhydride of $HClO_4$ is :			
	(A) ClO_3	(B) ClO_2	(C) Cl_2O_5	(D) Cl_2O_7
2	During nitration of benzene, the active nitrating agent is :			
	(A) NO_3	(B) NO_2^+	(C) NO_2^-	(D) HNO_3
3	Which one of these polymers is a synthetic polymer :			
	(A) Animal fat	(B) Starch	(C) Cellulose	(D) Polyester
4	The main pollutant of leather tanneries in the waste water is due to the salts of :			
	(A) Lead	(B) Chromium (VI)	(C) Copper	(D) Chromium (III)
5	Keeping in view the size of atoms, which order is the correct one :			
	(A) $Mg > Sr$	(B) $Ba > Mg$	(C) $Lu > Ce$	(D) $Cl > I$
6	Formalin is :			
	(A) 10% solution of formaldehyde in water	(B) 20% solution of formaldehyde in water	(C) 40% solution of formaldehyde in water	(D) 60% solution of formaldehyde in water
7	Tincal is a mineral of :			
	(A) Al	(B) B	(C) Si	(D) C
8	Which enzyme is not involved in fermentation of starch :			
	(A) Diastase	(B) Zymase	(C) Urease	(D) Maltase
9	Peroxyacetyl nitrate (PAN) is an irritant to human beings and it affects :			
	(A) Eyes	(B) Ears	(C) Stomach	(D) Nose
10	Which set of hybrid orbitals has planer triangular shape :			
	(A) dSp^2	(B) Sp^3	(C) Sp^2	(D) Sp
11	Which one of the following is not an alkali metal :			
	(A) Fr	(B) Cs	(C) Rb	(D) Ra
12	Preparation of vegetable ghee involves :			
	(A) Halogenation	(B) Hydrogenation	(C) Hydroxylation	(D) Dehydrogenation
13	Co-ordination number of pt in $[ptCl(NO_2)(NH_3)_4]$ is :			
	(A) 2	(B) 4	(C) 1	(D) 6
14	For which mechanism, the first step involved is the same :			
	(A) E_1 and E_2	(B) E_2 and S_N2	(C) S_N1 and E_2	(D) E_1 and S_N1
15	Which catalyst is used in contact process for preparing H_2SO_4 :			
	(A) Fe_2O_3	(B) V_2O_5	(C) SO_3	(D) Ag_2O
16	Which of the following is not a fatty acid :			
	(A) Propanoic acid	(B) Acetic acid	(C) Phthalic acid	(D) Butanoic acid
17	Micro-nutrients are required in quantity ranging from :			
	(A) 4 – 40 g	(B) 6 – 200 g	(C) 6 – 200 kg	(D) 4 – 40 kg

Roll No _____

(To be filled in by the candidate)

(Academic Sessions 2015 – 2017 & 2016 – 2018)

CHEMISTRY

PAPER – II (Essay Type)

218-(INTER PART – II)

GROUP – I

Time Allowed : 2.40 hours

Maximum Marks : 68

www.pakcity.org**SECTION – I****2. Write short answers to any EIGHT (8) questions :**

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- (i) Why diamond is a non-conductor and graphite is fairly a good conductor?
- (ii) The hydration energy of the ions are in the order, justify it : $Al^{+3} > Mg^{+2} > Na^{+1}$
- (iii) Why lime water turns milky with CO_2 but becomes/ ^{clear} with excess of CO_2 .
- (iv) Give any four uses of " Al " .
- (v) What happens when ortho boric acid reacts with : (i) $NaOH$ (ii) Ethyl alcohol
- (vi) What is vitreous silica, give its two uses?
- (vii) NO_2 is a strong oxidizing agent, prove with the help of two reactions.
- (viii) Give two reactions of H_2SO_4 which show its oxidizing behaviour.
- (ix) Give four dissimilarities of oxygen and sulphur.
- (x) What is BOD?
- (xi) What is the role of chlorofluorocarbons in destroying ozone?
- (xii) Explain cis-trans isomerism, give one example.

3. Write short answers to any EIGHT (8) questions :

16

- (i) Define ligand with an example.
- (ii) What is the percentage (%) of carbon in different types of steel?
- (iii) Why alkanes are less reactive organic compounds?
- (iv) Convert : (a) Acetylene \rightarrow Benzene (b) Vinyl acetylene \rightarrow Chloroprene
- (v) What is meant by nitration of benzene? Write its reaction.
- (vi) What do you mean by leaving group? Give an example.
- (vii) What is denaturing of alcohol?
- (viii) How Lucas test is used to distinguish between primary, secondary and tertiary alcohol?
- (ix) Write any four uses of acetaldehyde.
- (x) How iodoform test can be used to distinguish methyl ketones from other ketones?
- (xi) What is the difference between essential and non-essential amino acids?
- (xii) How acetic acid reacts with : (a) PCl_3 (b) $SOCl_2$

4. Write short answers to any SIX (6) questions :www.pakcity.org

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- (i) What is denaturation of proteins?
- (ii) What are thermosetting polymers?
- (iii) What is acid number?
- (iv) What is clinker formation?
- (v) Name two woody and two non-woody raw materials.
- (vi) Give significance of potash fertilizer.

(2)

4. (vii) Write down the reactions of chlorine with cold and hot NaOH.

(viii) Write two uses of each helium and argon.

(ix) Why iodine has metallic luster?

SECTION – II

Note : Attempt any THREE questions.

5. (a) How do you justify the position of hydrogen at the top of IA and VIIA groups of periodic table? 4

(b) Describe the manufacturing of Na metal by Down's cell, give advantages of this process. 4

6. (a) Explain the following properties of transition elements : 4

(i) Colour (ii) Chelate formation.

(b) Explain the process of incineration of industrial waste. 4

7. (a) Define cracking and give its types. 4

(b) Write down the classification of aromatic hydrocarbons giving one example each. 4

8. (a) How is ethane prepared by Kolbe's electrolytic method? Write its mechanism. 4

(b) Write two methods of preparation of phenol. 4

9. (a) Give the four points of difference between S_N1 and S_N2 reactions. 4

(b) What type of aldehydes give Cannizzaro's reaction? Give its mechanism. 4

Note : Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

1-1	Which is the weakest oxidizing agent : www.pakcity.org			
	(A) Br_2	(B) Cl_2	(C) F_2	(D) I_2
2	Which one of the following species is an electron releasing : $\begin{array}{c} O \\ \\ -C-R \end{array}$			
	(A) $-CHO$	(B) $-C-R$	(C) $-OH$	(D) $-COOH$
3	Which one of the following nitrogenous base is not present in RNA : (A) Thiamine (B) Cytosine (C) Adenine (D) Uracil			
4	Fungicides are used to : (A) Control the growth of fungus (B) Kill insects (C) Kill plants (D) Kill herbs			
5	Which one of the following oxides is more acidic : (A) MnO (B) Mn_2O_3 (C) MnO_2 (D) Mn_2O_7			
6	Which one of the following compounds will not give iodoform test : (A) Ethanol (B) Acetaldehyde (C) Butanone (D) 3-Pentanone			
7	Bauxite is an ore of : (A) B (B) Al (C) Mg (D) Ca			
8	Which one of the following compounds is more acidic : (A) H_5C_6OH (B) H_2O (C) H_5C_2OH (D) H_3CCOOH			
9	In purification of potable water the coagulant used is : (A) Nickel sulphate (B) Alum (C) Copper sulphate (D) Barium sulphate			
10	For a ketone having molecular formula $C_5H_{10}O$, the number of possible metamers are : (A) 2 (B) 3 (C) 4 (D) 5			
11	Formula of sodium beryllate is : (A) $Na_2B_4O_7$ (B) Na_2BeO_2 (C) $BeONa$ (D) $Na_2B_4O_7 \cdot 10H_2O$			
12	Addition of water to acetylene takes place in presence of : (A) Ni (B) $HgSO_4 / H_2SO_4$ (C) $ZnCl_2$ (D) Cu			
13	Which one of the following is a non-typical transition element : (A) Cr (B) Mn (C) Cd (D) Fe			
14	When ethyl magnesium bromide reacts with HCHO followed by acid hydrolysis, the product formed is : (A) Ethanol (B) 1 – Propanol (C) Ethanoic acid (D) 2 – Propanol			
15	The lowest ionization energy is possessed by : (A) P (B) N (C) Sb (D) As			
16	The solution of which acid is used for seasoning of food : (A) Formic acid (B) Acetic acid (C) Benzoic acid (D) Butanoic acid			
17	Ammonium nitrate fertilizer is not used for which crop : (A) Cotton (B) Wheat (C) Sugar cane (D) Paddy rice			

SECTION – I**2. Write short answers to any EIGHT (8) questions :**

16

- (i) Why is the oxidation state of noble gases usually zero?
- (ii) Why does the ionization energy decrease down the group and increase along the period?
- (iii) Why is the aqueous solution of Na_2CO_3 alkaline in nature?
- (iv) Write two reactions of preparation of borax.
- (v) What is chemical garden?
- (vi) Define semiconductors. Write its two properties.
- (vii) Write two reactions of preparation of nitrous acid.
- (viii) What is the action of heat on orthophosphoric acid? Write chemical equation also.
- (ix) Write four physical properties of sulphuric acid.
- (x) Name the four components of environment.
- (xi) What is meant by dissolved oxygen (DO) to check the quality of water?
- (xii) Write the destructive distillation of coal.

3. Write short answers to any EIGHT (8) questions :

16

- (i) $KMnO_4$ acts as oxidizing agent, show with two examples.
- (ii) What are chelates? Give one example.
- (iii) What is the statement of Markownikov's rule? Also give example.
- (iv) What happens when vic-dihalide is treated with Zn-dust?
- (v) What happens when benzene is burnt in free supply of air? Write equation.
- (vi) Describe the best method for preparation of alkyl halides.
- (vii) How phenol can be converted into benzene?
- (viii) How does phenol react with bromine water?
- (ix) What are aldehydes and ketones, give example?
- (x) How formaldehyde is prepared on large scale?
- (xi) How carboxylic acid can be obtained from alkene?
- (xii) Why does mostly carboxylic acid exist as dimers?

4. Write short answers to any SIX (6) questions :

12

- (i) Why is cement named as Portland cement?
- (ii) Write about digestion process for preparation of pulp.
- (iii) Define DAP. Write reaction for its preparation.
- (iv) What is difference between fat and oil?
- (v) Write note on condensation polymer.
- (vi) Define iodine number and acid number.

4. (vii) How NaOH reacts with Cl_2 in hot and cold state? 4

(viii) What is iodized salt? Write its function. 4

(ix) Give reason oxidation power of halogens increases $\text{F}_2 > \text{Cl}_2 > \text{Br}_2 > \text{I}_2$ 4

SECTION – II

Note : Attempt any THREE questions.

5. (a) Define ionization energy. Give its units. Discuss the effects of three factors on the ionization energy values of elements. 4

(b) Explain the peculiar behaviour of beryllium. 4

6. (a) Describe the manufacture of wrought iron from cast iron. 4

(b) Describe the natural and human sources of nitrogen oxides and sulphur oxides. 4

7. (a) Differentiate between homocyclic and heterocyclic compounds with two examples each. 4

(b) Write down two reactions in which benzene behaves as saturated hydrocarbon and two reactions in which benzene behaves as unsaturated hydrocarbon. 4

8. (a) What are rules for naming alkynes? Explain with suitable examples. 4

(b) Write down Dow's method for preparing phenol. What is action of following on phenol : 4

(i) Bromine water. (ii) HNO_3 at different temperatures. 4

9. (a) How will you bring about the following conversions from an alkyl halide : 4

(i) Diethyl ether (ii) Ethyl thioalcohol (iii) Ethyl acetate (iv) Nitroethane 4

(b) What type of aldehydes give Cannizzaro's reaction? Give its reaction mechanism. 4