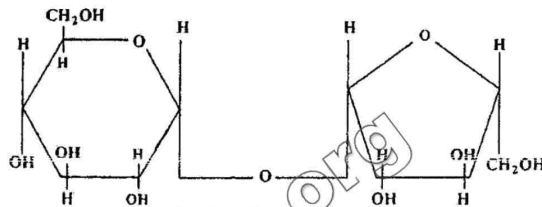


Roll No. of Candidate : \_\_\_\_\_

**BIOLOGY****Intermediate Part-I, Class 11<sup>th</sup> (1<sup>st</sup> A 324- IV) Paper : I Group – I****Time: 20 Minutes****OBJECTIVE****Code : 6467****Marks: 17**

**Note:** You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

1. 1 - Retroviruses have special enzyme which can convert a single stranded RNA to double stranded DNA , named as  
 (A) catalase (B) reverse transcriptase (C) sucrase (D) arginase
- 2 - The substance which inhibits blood clotting is  
 (A) heparin (B) histamine (C) fibrin (D) albumin
- 3 - What happens to Oxygen in respiratory electron transport chain?  
 (A) forms CO<sub>2</sub> (B) released as gas (C) forms NAD (D) reduced to H<sub>2</sub>O
- 4 - The causal organism of amoebic dysentery in human, is  
 (A) Paramecium (B) Amoeba (C) Tse-Tse fly (D) Entamoeba
- 5 - This diagram shows a Carbohydrate,



What is the name of bond which links the two subunits?

- (A) A Glycosidic bond (B) A Hydrogen bond (C) A Peptide bond (D) Ester linkage
- 6 - Diameter of bronchiole is about  
 (A) 1 mm (B) 2 mm (C) 3 mm (D) 4 mm
- 7 - Double fertilization is the characteristic of  
 (A) Angiosperms (B) Gymnosperms (C) Bryophytes (D) Ferns
- 8 - During fermentation, the amount of energy present within the chemical bonds of glucose which is converted to ATP, is  
 (A) 1% (B) 98% (C) 2% (D) 99%
- 9 - In normal human body, the percentage of plasma in blood is  
 (A) 90% (B) 45% (C) 10% (D) 55%
- 10 - New ribosomes are assembled in  
 (A) Nucleolus (B) Mitochondrion (C) Lysosomes (D) Golgi apparatus
- 11 - A group of similar cells that performs a specific function is called  
 (A) system (B) organelle (C) organ (D) tissue
- 12 - The phase of rapid growth in bacteria is called  
 (A) stationary phase (B) log phase (C) lag phase (D) death phase
- 13 - Which one of the following is the length of the giant squid?  
 (A) 10 meter (B) 50 meter (C) 200 meter (D) 15 meter
- 14 - The first part of small intestine is called  
 (A) jejunum (B) duodenum (C) ileum (D) colon
- 15 - In most of the sponges, outer layer of body wall is made up of  
 (A) Choanocytes (B) pinacocytes (C) erythrocytes (D) leucocytes
- 16 - Lovastatin is used for lowering  
 (A) blood salts (B) blood glucose (C) blood pressure (D) blood cholesterol
- 17 - The inorganic and detachable cofactor is called  
 (A) coenzyme (B) prosthetic group (C) activator (D) inhibitor

BIOLOGY

Intermediate Part-I, Class 11<sup>th</sup> (1<sup>st</sup> A 324)

Paper : I Group – I

Time: 2:40 Hours

SUBJECTIVE

Marks: 68

Note: Section-I is compulsory. Attempt any three (3) questions from Section-II.

SECTION – I**2. Write short answers to any EIGHT questions.**

(2 x 8 = 16)

- i - Write down the comparison between saturated and unsaturated fatty acids with example.
- ii - What is effect of enzyme concentration on the rate of reaction?
- iii - Why some enzymes are produced in inactive form? Give one example.
- iv - Define Induce Fit Model of enzyme and who proposed it?
- v - Compare obligate parasite with facultative parasite with example.
- vi - What are Mycorrhizae? Give their importance.
- vii - Give two comparisons of protostomia and deuterostomia with example.
- viii - Define Placenta, give its function.
- ix - How are Echinoderms related to chordates?
- x - What are prototherian mammals? Give an example.
- xi - Differentiate absorption and action spectrum.
- xii - Define Calvin Cycle. Where does it occur?

**3. Write short answers to any EIGHT questions.**

(2 x 8 = 16)

- i - Define biological method. What is biological problem?
- ii - How would you distinguish between biological control and bioremediation?
- iii - Who stated "Omnis cellula e cellula"? What does it mean?
- iv - Define congenital diseases? Give examples and their causes.
- v - Write down name of a parasitic amoeba. What disease does it cause?
- vi - What are red tides?
- vii - Why slime moulds are included in Kingdom protocista?
- viii - How Phytophthora infestans caused Irish potato famine?
- ix - What is the role of mitochondria in photorespiration?
- x - How scuba diver breaths pressurized air?
- xi - What is the difference between pulmonary and systemic circulation?
- xii - How blood helps in maintaining internal environment of body?

**4. Write short answers to any SIX questions.**

(2 x 6 = 12)

- i - Give any four symptoms of hepatitis.
- ii - Write down four postulates of "Germ Theory of Disease".
- iii - How does peristalsis differ from antiperistalsis?
- iv - Clarify the terms villi and microvilli.
- v - What are the symptoms of Nitrogen deficiency in plants?
- vi - Define double fertilization. Give its importance.
- vii - What are fronds? In which class of tracheophyte fronds are present?
- viii - Why Bambusa is economically important?
- ix - How are Bryophytes considered as amphibians of the plants?

SECTION – II

5. (a) What is Biological organization? Discuss population and community level organization. (4)
- (b) Describe mechanism of breathing in Man. (4)
6. (a) Describe the acylglycerols in detail. (4)
- (b) Draw a labelled graphic representation of life cycle of rhizopus (no description is needed). (4)
7. (a) List organelles which are single membrane bound, double membrane bound and lacking any membrane? Draw a labelled diagram of a section through Mitochondria. (4)
- (b) Discuss following disorders: (4)
  - (i) Food poisoning
  - (ii) Piles
8. (a) Define species. Discuss binomial nomenclature with biological classification of corn. (4)
- (b) Define blood. How red blood cells and white blood cells are developed from stem cells in bone marrow? (4)
9. (a) Discuss habitat, occurrence, structure and reproduction of Nostoc. (4)
- (b) Explain respiratory electron transport chain. (4)



Roll No. of Candidate : \_\_\_\_\_

**BIOLOGY****Intermediate Part-I, Class 11<sup>th</sup> (1<sup>st</sup>A 324- IV) Paper : I Group – II****Time: 20 Minutes****OBJECTIVE Code : 6468****Marks: 17**

**Note:** You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

1. 1 - The cyclosis and amoeboid movements are due to  
(A) microtubules (B) microfilaments ● (C) intermediate filaments (D) membrane
- 2 - The stunted growth and chlorosis occurs in plants due to deficiency of  
(A) Iron (B) Magnesium (C) Nitrogen ● (D) Zinc
- 3 - One complete heart beat lasts for  
(A) 1.0 sec (B) 0.8 sec ● (C) 0.5 sec (D) 0.2 sec
- 4 - Bacteria divide at exponential rate during  
(A) decline phase (B) lag phase (C) log phase ● (D) stationary phase
- 5 - The animal which has single circuit heart is  
(A) Monkey (B) Sparrow (C) Lizard (D) Trout ●
- 6 - The porphyrin ring of haemoglobin contains  
(A) Calcium (B) Iron ● (C) Potassium (D) Phosphorus
- 7 - The poisonous mushrooms are called  
(A) Agaricus (B) Morels (C) Truffles (D) Toad stools ●
- 8 - Round worms belong to phylum  
(A) annelida (B) arthropoda (C) mollusca (D) nematoda ●
- 9 - The maximum amount of air held by inflated lungs is  
(A) 5 liter ● (B) 4 liter (C) 4.5 liter (D) 3.5 liter
- 10 - The optimum pH for enterokinase is  
(A) 1.50 (B) 3.50 (C) 5.50 ● (D) 7.50
- 11 - A large regional community primarily determined by climate.  
(A) biome ● (B) biosphere (C) ecosystem (D) community
- 12 - Measles and Mumps are caused by a virus belonging to a group called  
(A) adenoviruses (B) paramyxovirus ● (C) poxvirus (D) poliovirus
- 13 - Loligo, Sepia and Octopus are examples of class  
(A) Bivalvia (B) Gastropoda (C) Cephalopoda ● (D) Oligochaeta
- 14 - Plastocyanin contains  
(A) Copper ● (B) Iron (C) Magnesium (D) Potassium
- 15 - The gametophyte of a Moss is  
(A) diploid (B) haploid ● (C) polyploid (D) tetraploid
- 16 - The sexual reproduction in most of ciliates takes place by  
(A) conjugation ● (B) binary fission (C) Oogamy (D) fertilization
- 17 - The normal amount of glucose in human body is  
(A) 0.6% (B) 0.8% (C) 0.06% (D) 0.08% ●

**BIOLOGY****Intermediate Part-I, Class 11<sup>th</sup> (1<sup>st</sup> A 324)****Paper I****Group – II****Time: 2:40 Hours****SUBJECTIVE****Marks: 68****Note: Section-I is compulsory. Attempt any THREE (3) questions from Section-II.****SECTION – I****2. Write short answers to any EIGHT questions.****(2 x 8 = 16)**

- i - What are polysaccharides? Write down the names of four examples.
- ii - What is optimum temperature?
- iii - State the theory of "Induce Fit Model".
- iv - Differentiate the irreversible and reversible inhibitors.
- v - Basidiomycetes are called club fungi. Why?
- vi - Give the biological names of Rusts and Smut.
- vii - Differentiate grade radiata and bilateria.
- viii - What is pseudocoelom? How it is different from coelom?
- ix - How host is disinfested from a parasite?
- x - Differentiate Urochordata and Cephalochordata.
- xi - What is the mechanism for ATP synthesis in cyclic and noncyclic photophosphorylation?
- xii - Why Calvin cycle is also called C<sub>3</sub> Pathway?

**3. Write short answers to any EIGHT questions.****(2 x 8 = 16)**

- i - Write down the organ level in plants.
- ii - Why it is important to control environmental pollution in Pakistan?
- iii - What will happen if a chromosome loses its centromere?
- iv - What are leucoplasts? Give their function.
- v - Write down any two characteristics of diatoms.
- vi - Give two main characters of Oomycetes?
- vii - How would you compare green algae with plants?
- viii - What are the symptoms of Malaria?
- ix - Why is Larynx also known as voice box?
- x - What is tuberculosis? Give its causative agents.
- xi - What is the contribution of Dixon in Ascent of sap?
- xii - Transpiration is considered as a necessary evil. How?

**4. Write short answers to any SIX questions.****(2 x 6 = 12)**

- i - Define binomial nomenclature, give its rules.
- ii - Give comparison between amphitrichous and peritrichous bacteria.
- iii - Define ovule and embryo sac.
- iv - Differentiate between the bryophytes and tracheophytes.
- v - Give two vegetative characters of family Solanaceae with example.
- vi - Compare Dicot with Monocot plants.
- vii - What is macrophagous feeding? Give an example.
- viii - Define digestion. Write down its types.
- ix - Write down the role of Gastrin.

**SECTION – II**

5. (a) Write down a note on biological organization at population and community level. (4)  
(b) In what ways is respiration in birds the most efficient and elaborate? (4)
6. (a) Why Carbon is considered to occupy the central position in skeleton of life? (4)  
(b) Write down the disease cycle of loose smut of wheat. (4)
7. (a) Write down in detail structure and functions of plasma membrane. (4)  
(b) Describe process of digestion in cockroach with the help of labelled diagram. (4)
8. (a) Write down the biological classification of Corn (zea mays). (4)  
(b) Explain pressure flow theory. (4)
9. (a) What are pleomorphic bacteria? Discuss different shapes of bacteria. (4)  
(b) What is glycolysis? Describe substrate level of phosphorylation in oxidative phase of glycolysis. (4)



## Gujranwala Board-2023

Roll No. of Candidate : \_\_\_\_\_

### BIOLOGY

**Intermediate Part-I, Class 11<sup>th</sup> (1<sup>st</sup>A 323- I)**

Paper : 1    Group – I

**Time: 20 Minutes**

**OBJECTIVE**

Code : 6461

**Marks: 17**

**Note:** You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.



1. 1 - Pasteurization is widely used for preservation of  
(A) food products    (B) meat products    (C) meat    (D) milk products
- 2 - The potential source of chemical energy for cellular respiration  
(A) C – N bonds    (B) C – O bonds    (C) C – H bonds    (D) C – C bonds
- 3 - The optimum pH of enterokinase is  
(A) 3.50    (B) 5.50    (C) 7.50    (D) 9.50
- 4 - The cyclosis and amoeboid movements are due to  
(A) microfilaments    (B) microtubules    (C) intermediate filaments    (D) all of these
- 5 - The capsomeres present in the capsid of Adenovirus are  
(A) 252    (B) 352    (C) 200    (D) 162
- 6 - Bacteria which can live in presence or absence of oxygen are called  
(A) aerobic    (B) facultative    (C) anaerobic    (D) microaerophilic
- 7 - Apicomplexans move by means of  
(A) cilia    (B) flagella    (C) flexing    (D) all of these
- 8 - Sexual reproduction is absent in  
(A) zygomycota    (B) ascomycota    (C) basidiomycota    (D) deuteromycota
- 9 - The gametophyte of mosses is  
(A) haploid    (B) diploid    (C) polyploid    (D) tetraploid
- 10 - Flame cells are the excretory structures in  
(A) segmented worm    (B) flat worms    (C) round worms    (D) insects
- 11 - Syrinx is organ of voice in  
(A) amphibians    (B) reptiles    (C) birds    (D) mammals
- 12 - The first action spectrum was obtained by T.W. Engelmann in  
(A) 1683 A.D.    (B) 1783 A.D.    (C) 1883 A.D.    (D) 1983 A.D.
- 13 - During respiratory chain, coenzyme 'Q' is oxidized by  
(A) cytochrome "b"    (B) cytochrome "c"    (C) cytochrome "a"    (D) cytochrome "a<sub>3</sub>"
- 14 - Deficiency of phosphorus causes stunted growth of  
(A) shoots    (B) roots    (C) leaf    (D) flowers
- 15 - Respiratory pigment present in muscle fibre is called  
(A) globin    (B) haemoglobin    (C) myoglobin    (D) haemocyanin
- 16 - Single circuit heart is found in  
(A) birds    (B) reptiles    (C) mammals    (D) fishes
- 17 - One complete heart beat lasts for  
(A) 0.8 sec    (B) 1.0 sec    (C) 0.5 sec    (D) 0.2 sec

219-(I)-1<sup>st</sup>A 323-29000

# Gujranwala Board-2023

**BIOLOGY**

**Intermediate Part-I, Class 11<sup>th</sup> (1<sup>st</sup> A 323)**

**Paper : I Group – I**

**Time: 2:40 Hours**

**SUBJECTIVE**

**Marks: 68**

**Note: Section-I is compulsory. Attempt any three (3) questions from Section-II.**



## SECTION – I

**2. Write short answers to any EIGHT questions.**

**(2 x 8 = 16)**

- i - How is carbon necessary for life?
- ii - Differentiate between apoenzyme and holoenzyme.
- iii - Explain effects of substrate at activity of an enzyme.
- iv - Why human beings die by eating of poisons or drugs?
- v - What is parasexuality?
- vi - Explain aflatoxins.
- vii - What is coelom?
- viii - What is the importance of nematocysts in coelenterates?
- ix - Differentiate between acrania and craniata.
- x - Distinguish between anamniotes and amniotes.
- xi - Write down the molecular formulae for chlorophyll (a) and chlorophyll (b).
- xii - How do cytochrome enzymes play role in energy production?

**3. Write short answers to any EIGHT questions.**

**(2 x 8 = 16)**

- i - Differentiate between parasitology and microbiology.
- ii - How some diseases of plants can be controlled by bacteria?
- iii - Differentiate chromoplast from leucoplast.
- iv - How the body cells are protected from invading organisms or foreign particles? Write down two mechanisms.
- v - What do you know about parasitic zooflagellates?
- vi - Write down a few lines on dinoflagellates.
- vii - How phytophthora infestans ruined Ireland?
- viii - How algae is different from plants? Write down two characters.
- ix - Differentiate microphyll from megaphyll.
- x - How family Poaceae is economically very important to us? Give two reasons.
- xi - What is facilitated diffusion?
- xii - What is role of Casparian strips in roots of plants?

**4. Write short answers to any SIX questions.**

**(2 x 6 = 12)**

- i - What are pocks?
- ii - Differentiate between A-trichous and peri-trichous bacteria.
- iii - Write down two functions of large intestine.
- iv - What are nematocyst?
- v - How intracellular digestion differs from extra cellular digestion?
- vi - Enlist organelles involved in photorespiration.
- vii - How inspiration occurs in man?
- viii - pH of blood influences the degree to which Oxygen binds to haemoglobin. Comment it.
- ix - What is tuberculosis?

## SECTION – II

5. (a) Describe the role of biology to control the diseases by preventive measures. (4)  
(b) Discuss the different types of immunity. (4)
6. (a) Define RNA, describe its various types. (4)  
(b) Write down characteristics of Basidiomycota. (4)
7. (a) Write down importance of bacteria. (4)  
(b) How leaf evolved in early vascular plants? (4)
8. (a) Give an account of glycolysis and sketch it. (4)  
(b) Describe the structure of Bacteriophage with diagram. (4)
9. (a) Write down a detailed note on functions of cell membrane. (4)  
(b) How digestion takes place in stomach? Explain it. (4)

**219-1<sup>st</sup> A 323-29000**



# Gujranwala Board-2023

Roll No. of Candidate : \_\_\_\_\_

## BIOLOGY

Intermediate Part-I, Class 11<sup>th</sup> (1<sup>st</sup>A 323- I) Paper : I Group – II

Time: 20 Minutes

OBJECTIVE Code : 6462

Marks: 17

**Note:** You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.



1. 1 - The study of ancestral history of organism is called  
(A) Genetics (B) Evolution (C) Paleontology (D) Ecology
- 2 - The term carbohydrate includes  
(A) starch (B) monosaccharides (C) oligosaccharides (D) all these
- 3 - The catalytic activity of an enzyme restricted to its small portion is called  
(A) passive site (B) regulation site (C) active site (D) allosteric site
- 4 - A cytoskeletal fiber responsible for cyclosis is called  
(A) microfilament (B) microtubule (C) centriole (D) intermediate filament
- 5 - Which step in lytic cycle follows penetration into the host cell?  
(A) maturation (B) DNA replication (C) production of lysosome (D) lysis
- 6 - Conjugation is facilitated by  
(A) pilli (B) capsule (C) slime (D) flagella
- 7 - Cell wall of Oomycetes contains mostly  
(A) pectin (B) chitin (C) cellulose (D) murein
- 8 - Reindeer moss is  
(A) algae (B) mold (C) lichen (D) algae
- 9 - Gametophyte generation is dominant in  
(A) ferns (B) angiosperms (C) gymnosperms (D) bryophytes
- 10 - Which of the following is not a class of pisces?  
(A) cyclostomata (B) aves (C) chondrichthyes (D) osteichthyes
- 11 - Dipnoi modified aquatic breathing system to meet the conditions of terrestrial life by developing  
(A) gills (B) lungs (C) swim bladder (D) skin
- 12 - AcetylCoA reacts with oxaloacetate during Kreb's cycle to form  
(A) pyruvate (B) citrate (C) ATP (D) NADH
- 13 - Glycolysis  
(A) produces no ATP (B) takes place in Mitochondria  
(C) reduces  $\text{NAD}^+$  (D) produces no pyruvic acid
- 14 - Digestion in hydra takes place within its  
(A) coelom (B) mouth (C) gastrovascular cavity (D) alimentary canal
- 15 - The respiratory system is most efficient in  
(A) birds (B) man (C) fish (D) snake
- 16 - The casparian strips are present in  
(A) cortex cells of root (B) phloem cells  
(C) endodermal cells of root (D) pericycle cells
- 17 - Plasma cells are  
(A) same as memory cells (B) B-cells that are actively secreting antibody  
(C) inactive T-cells (D) formed from blood plasma

220-(I)-1<sup>st</sup>A 323-29006

# Gujranwala Board-2023

**BIOLOGY**

**Intermediate Part-I, Class 11<sup>th</sup> (1<sup>st</sup>A 323)**

**Paper I**

**Group – II**

**Time: 2:40 Hours**

**SUBJECTIVE**

**Marks: 68**

**Note: Section-I is compulsory. Attempt any THREE (3) questions from Section-II.**



## SECTION – I

**2. Write short answers to any EIGHT questions.**

**(2 x 8 = 16)**

- i - Discuss DNA working through genes.
- ii - How cofactors help enzymes in their working?
- iii - Relate two subsites of active site with enzyme action.
- iv - Why enzymes become denatured at high temperature?
- v - What are mycorrhizae? Write its two types.
- vi - Compare ascospores with basidiospores.
- vii - Describe features of deuterostomes.
- viii - What is spiral cleavage?
- ix - Compare insects with crustaceans.
- x - What are features of reptiles?
- xi - Briefly discuss role of water in photosynthesis.
- xii - Write down a note on anaerobic respiration.

**3. Write short answers to any EIGHT questions.**

**(2 x 8 = 16)**

- i - What is the role of pasteurization in food preservation?
- ii - What measures you suggest for endangered species?
- iii - Briefly describe the basic components of a eukaryotic cell.
- iv - Why haploid number of chromosome is present in germ cells?
- v - Green algae is considered as ancestor of plants. How?
- vi - What do you know about beautiful symmetrical patterns in diatoms?
- vii - How mosquito cause malaria in human?
- viii - Compare fungus like protists with fungi.
- ix - How would you define kingdom Plantae?
- x - Name the classes of pteropsida.
- xi - Mention two functions of platelets.
- xii - What is cuticular transpiration?

**4. Write short answers to any SIX questions.**

**(2 x 6 = 12)**

- i - Differentiate between virulent and non-virulent phages.
- ii - Give postulates of germ theory of diseases.
- iii - What is antiperistalsis? Give its causes and effects.
- iv - Write down names and position of salivary glands in human.
- v - What is botulism? Give its causes and symptoms.
- vi - What is composition of inhaled and exhaled air?
- vii - How is the skin of earthworm kept moist for the exchange of respiratory gases?
- viii - Differentiate between cutaneous and pulmonary respiration in frog.
- ix - Why ventilation in water is more difficult than in air?

## SECTION – II

5. (a) How study of biology is useful to help mankind in food production and disease control? (4)  
(b) Explain the influx of  $K^+$  ion in opening and closing of stomata. (4)

6. (a) Write down a note on primary structure of proteins. (4)  
(b) What do you know about the land adaptations of fungi? (4)

7. (a) Write down a note on nutrition of bacteria. (4)  
(b) Describe adaptive characteristics of bryophytes for terrestrial environment. (4)

8. (a) Describe the biological classification of corn. (4)  
(b) In what way the electron transport chain involved in the production of energy? (4)

9. (a) Describe structure and function of lysosomes. (4)  
(b) Explain digestion in amoeba. (4)

**220-1<sup>st</sup>A 323-29000**



Roll No. of Candidate : \_\_\_\_\_

**BIOLOGY**

**(Intermediate Part-I, Class 11<sup>th</sup>) 322 - (IV)**

**Paper I (Group – I)**

**Time: 20 Minutes**

**OBJECTIVE - - - - Code : 6467**

**Marks: 17**

**Note:** You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question. Attempt as many questions as given in objective type question paper and leave others blank.



1. 1 - The example of parasitic plant is \_\_\_\_\_.  
 (A) puccinia (B) sun dew (C) cuscuta (D) pitcher plant
- 2 - The surplus food in plants is stored in \_\_\_\_\_.  
 (A) photosynthetic cells (B) collenchymatous cells  
 (C) parenchymatous cells (D) sclerenchymatous cells
- 3 - Which of the following group includes the largest number of species?  
 (A) chordates (B) arthropods (C) vertebrates (D) insects
- 4 - John Hogg in 1861 proposed kingdom \_\_\_\_\_ for microorganisms.  
 (A) monera (B) Protista (C) plantae (D) prokaryotae
- 5 - The 16 elements that occur in organisms are called \_\_\_\_\_.  
 (A) essential elements (B) bio-elements (C) common elements (D) important elements
- 6 - The bird's lungs have thin walled ducts called \_\_\_\_\_.  
 (A) alveoli (B) bronchi (C) peri-bronchi (D) parabronchi
- 7 - Fungi grow best in the habitat \_\_\_\_\_.  
 (A) dry (B) moist (C) hot (D) cold
- 8 - The genus which is not included in gymnosperms is called \_\_\_\_\_.  
 (A) pinus (B) cycas (C) crataegus (D) taxus
- 9 - Which of the following is produced by the reactions taken place in thylakoids?  
 (A)  $\text{CO}_2 + \text{H}_2\text{O}$  (B)  $\text{NADP}^+ + \text{ADP}$  (C)  $\text{ATP}, \text{NADPH}_2 + \text{CO}_2$  (D)  $\text{O}_2 + \text{ATP}$
- 10 - Certain electromagnetic rays below 300 nm are effective in killing \_\_\_\_\_.  
 (A) virus (B) algae (C) microorganisms (D) germs
- 11 - An enzyme and its substrate react with each other through a definite charge bearing structure.  
 (A) active site (B) binding site (C) catalytic site (D) reaction site
- 12 - Which of the following is not a part of human immune system?  
 (A) antibody (B) antigen (C) B-lymphocyte (D) T-lymphocyte
- 13 - The paired gill openings are developed in all chordates but non-functional in \_\_\_\_\_.  
 (A) rat (B) fish (C) frog (D) amphioxus
- 14 - The glucose forms a six cornered ring when dissolved in water is called \_\_\_\_\_.  
 (A) glucofuranose (B) ribofuranose (C) glucopyranose (D) ribopyranose
- 15 - Which of the following initiates the process of blood clotting?  
 (A) conversion of fibrinogen to fibrin (B) conversion of fibrin to fibrinogen  
 (C) exposure of blood to air (D) by platelets
- 16 - The bacteriophage replicates only in the \_\_\_\_\_.  
 (A) animal cell (B) plant cell (C) fungal cell (D) bacterial cell
- 17 - In which of the following the first molecule is reduced to second molecule?  
 (A) pyruvic acid to acetyl-CO-A (B) glucose to pyruvic acid  
 (C) glucose to lactic acid (D) glucose to  $\text{CO}_2$



**(SECTION – I)**

**2. Write short answers to any EIGHT questions.**

**(2 x 8 = 16)**

- i - Why are lipids important to living organisms?
- ii - Why are enzymes considered as integral part of ribosomes?
- iii - How does enzyme accelerate the rate of metabolic reaction?
- iv - Why is catalytic region of active site necessary to enzyme?
- v - Write down two differences between spores and conidia.
- vi - What is parasexuality?
- vii - What is the importance of hook worm from parasitic point of view?
- viii - Differentiate between amniotes and anamniotes. Give example.
- ix - Define metameric segmentation. In which phylum is it found?
- x - Give two basic characteristics of chordates.
- xi - Define bioenergetics. Does it obey the law of thermodynamics?
- xii - What are accessory pigments? Give their role.

**3. Write short answers to any EIGHT questions.**

**(2 x 8 = 16)**

- i - What is inductive method to formulate a hypothesis? Give an example.
- ii - Define biome and community.
- iii - Name any two structures / organelles which are common in plant cell, animal cell and prokaryotic cell.
- iv - Compare the cell wall of plant cell and a prokaryotic cell.
- v - Why diatoms are considered as major producer of an aquatic ecosystem?
- vi - Compare foraminiferans and actinopods.
- vii - Write down two characteristics of euglenoids.
- viii - Write down two characteristics of oomycetes.
- ix - What is prothallus? Give its characteristics.
- x - What is overtopping in evolution of megaphyll leaf?
- xi - What is electro cardio gram (ECG)?
- xii - Differentiate between open and close circulatory system.

**4. Write short answers to any SIX questions.**

**(2 x 6 = 12)**

- i - What are prions?
- ii - What are water blooms?
- iii - How constipation and diarrhea are caused?
- iv - How sundew shows its insectivorous activity?
- v - Define pyrosis.
- vi - What is myoglobin?
- vii - How air composition changes after breathing?
- viii - Why lungs collapse if gestation age is less than seven months?
- ix - In plants how respiration occurs in presence of light?

**(SECTION – II)**

**Note: Attempt any three (3) questions from Section II.**

5. (a) How is Biology important to control diseases in man? (4)  
(b) Describe lymphatic system. Also discuss its various functions. (4)
6. (a) Describe importance of water for living organisms. (4)  
(b) Write down the characteristics of ascomycetes and importance of yeasts. (4)
7. (a) For growth, maintenance and reproduction nutrients are necessary. How bacteria get them? (4)  
(b) Why sporophytes and gametophytes of plants alternate with each other? Give its significance. (4)
8. (a) What is hepatitis? Describe its different types. (4)  
(b) Write down the role of water in photosynthesis. (4)
9. (a) Discuss structure and functions of plasma membrane. (4)  
(b) Describe digestion in stomach of man. (4)



Roll No. of Candidate : \_\_\_\_\_

**BIOLOGY**

**(Intermediate Part-I, Class 11<sup>th</sup>) 322 - (II)**

**Paper I (Group – II)**

**Time: 20 Minutes**

**OBJECTIVE - - - - - Code : 6464**

**Marks: 17**

**Note:** You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question. Attempt as many questions as given in objective type question paper and leave others blank.



1. 1 - Blade, stipe and holdfast are parts of \_\_\_\_\_.  
 (A) polysiphonia (B) chlorella (C) laminaria (D) spirogyra
- 2 - \_\_\_\_\_ solvent does not dissolve chlorophyll.  
 (A) alcohol (B) benzene (C) water (D) carbon tetrachloride
- 3 - \_\_\_\_\_ is not a member of phylum Mollusca.  
 (A) slug (B) sea urchin (C) land snail (D) water snail
- 4 - The amount of CO<sub>2</sub> transported in the form of HCO<sub>3</sub><sup>-</sup> is \_\_\_\_\_.  
 (A) 60% (B) 70% (C) 50% (D) 80%
- 5 - \_\_\_\_\_ is not lipid.  
 (A) oil (B) wax (C) cholesterol (D) maltose
- 6 - The animal having intracellular digestion is \_\_\_\_\_.  
 (A) hydra (B) frog (C) fish (D) man
- 7 - How much nitrogenous compounds are present in honey dew?  
 (A) 0.5% (B) 1% (C) 2% (D) 3%
- 8 - Cell wall of archaeobacteria does not contain \_\_\_\_\_.  
 (A) cellulose (B) peptidoglycan (C) chitin (D) cutin
- 9 - The detachable organic co-factor of an enzyme is known as \_\_\_\_\_.  
 (A) activator (B) prosthetic group (C) co-enzyme (D) apoenzyme
- 10 - Blood clots are prevented by \_\_\_\_\_.  
 (A) alanine (B) glycine (C) histamine (D) heparin
- 11 - The number of ascospores in each ascus is \_\_\_\_\_.  
 (A) 2 (B) 4 (C) 6 (D) 8
- 12 - The diameter of peroxisome is approximately.  
 (A) 0.2 μm (B) 0.3 μm (C) 0.4 μm (D) 0.5 μm
- 13 - Mammals became dominant in \_\_\_\_\_.  
 (A) Proterozoic era (B) Palaeozoic era (C) Mesozoic era (D) Cenozoic era
- 14 - \_\_\_\_\_ is not a part of electron transport chain.  
 (A) plastoquinone (B) cytochromes (C) plastocyanin (D) acetyl CO-A
- 15 - Horsetail belongs to sub division \_\_\_\_\_.  
 (A) lycopsida (B) psilopsida (C) sphenopsida (D) pteropsida
- 16 - The sponge of fresh water is \_\_\_\_\_.  
 (A) spongilla (B) euplectella (C) sycon (D) leucoselenia
- 17 - \_\_\_\_\_ is an insect.  
 (A) silver fish (B) hag fish (C) cray fish (D) lampreys

**218-(II)-322-24000**

**Note: Section I is compulsory, Attempt any THREE (3) questions from Section II.**



**(SECTION – I)**

**2. Write short answers to any EIGHT questions.**

(2 x 8 = 16)

- i - Define that branch of Biology which deals with study of chemicals and give its significance.
- ii - How irreversible inhibitors inhibit the activity of enzyme?
- iii - How active site of an enzyme is formed?
- iv - How the lining of digestive tract is protected by the action of pepsin?
- v - How spores are different from conidia?
- vi - What is histoplasmosis? How is it caused?
- vii - Define metamorphosis. Give example.
- viii - How osculum is different from ostia?
- ix - What are the features of archaeopterys?
- x - Why exoskeleton of echinoderms may be called endoskeleton?
- xi - Define bioenergetics.
- xii - What is oxidative phosphorylation?

**3. Write short answers to any EIGHT questions.**

(2 x 8 = 16)

- i - Define population and state its attributes.
- ii - Differentiate between organ and organelle.
- iii - Enlist two self replicating organelles of the cell and mention their roles.
- iv - Why food is stored in underground parts of plants?
- v - How ciliates differ from other protozoans?
- vi - Why limestone deposits are formed from foraminiferans rather than actinopods?
- vii - What is African sleeping sickness?
- viii - Write down importance of algae.
- ix - Differentiate between homosporous and heterosporous.
- x - What is overtopping?
- xi - Differentiate between antigen and antibodies.
- xii - Define plasmolysis.

**4. Write short answers to any SIX questions.**

(2 x 6 = 12)

- i - What is hepatitis? How is it caused?
- ii - Differentiate between flagellum and flagellin.
- iii - What is hunger pang? Give its reason.
- iv - How hydra captures its prey?
- v - What is hemorrhoids? Give its treatment.
- vi - How does respiration take place through cork tissues?
- vii - In hot dry season, why the level of O<sub>2</sub> rises inside the leaf?
- viii - Why larynx is important during the act of swallowing?
- ix - Why myoglobin pigment is required by animals in addition to haemoglobin?

**(SECTION – II)**

**Note: Attempt any three (3) questions from Section II.**

5. (a) In what ways Biology helps us to save our deteriorating surrounding? (4)  
(b) Explain the structure of human heart with the help of diagram. (4)
6. (a) Explain primary and quaternary structure of proteins, each with one example. (4)  
(b) Fungi are well adapted to land. Give reasons. (4)
7. (a) How antibodies affect the health of humans? Give detail. (4)  
(b) Why microphylls are different from megaphylls? How evolution of leaf has taken place? (1+3)
8. (a) Describe life cycle of bacteriophage. (4)  
(b) Give an account on light independent reactions of photosynthesis. (4)
9. (a) Differentiate between prokaryotic and eukaryotic cells. (4)  
(b) Explain the digestion in cockroach. (4)



Roll No. of Candidate : \_\_\_\_\_

**BIOLOGY****(INTERMEDIATE PART - I) 321 - (IV) Paper – I Group - I****Time: 20 Minutes****OBJECTIVE - - - - - Code : 6467****Marks: 17**

**Note:** You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question. Attempt as many questions as given in objective type question paper and leave others blank.

1. 1 - Percentage of red pigment the haemoglobin in cytoplasm of red blood cells is \_\_\_\_\_.  
 (A) 95 (B) 90 (C) 85 (D) 80
- 2 - Plants open their stomata by actively pumping which ions, causing water to follow by osmosis.  
 (A) sodium ions (B) potassium ions (C) magnesium ions (D) iron
- 3 - Arterial blood contains carbon dioxide about \_\_\_\_\_.  
 (A) 50 ml / 100 ml (B) 52 ml / 100 ml (C) 54 ml / 100 ml (D) 60 ml / 100 ml
- 4 - Zymogenic cells of gastric glands secrete  
 (A) mucous (B) hydrochloric acid (C) pepsinogen (D) ptyalin
- 5 - During respiratory chain NADH is oxidized by  
 (A) cytochrome b (B) cytochrome c (C) cytochrome a (D) coenzyme Q
- 6 - Plastocyanin is a protein which contains \_\_\_\_\_.  
 (A) calcium (B) iron (C) copper (D) phosphorus
- 7 - Which of the following annelids is marine?  
 (A) stylaria (B) nereis (C) hirudo (D) pheretima
- 8 - The member of coelenterate commonly called Portuguese man of war is \_\_\_\_\_.  
 (A) obelia (B) hydra (C) physalia (D) aurelia
- 9 - The example of foliose lichens is \_\_\_\_\_.  
 (A) ramalina (B) bacidia (C) parmelia (D) lecanor
- 10 - Among gymnosperms taxus plant is commonly called as \_\_\_\_\_.  
 (A) sago-palm (B) pine (C) deodar (D) yew
- 11 - Which of the following belongs to red algae?  
 (A) chondrus (B) fucus (C) chlorella (D) ulva
- 12 - When flagella surround the whole cell of bacterium, such condition is called \_\_\_\_\_.  
 (A) atrichous (B) lophotrichous (C) amphitrichous (D) peritrichous
- 13 - Which of the following viral disease is caused by DNA virus?  
 (A) herpes simplex (B) influenza (C) mumps (D) polio
- 14 - Number of chromosomes in a diploid cell of potato is \_\_\_\_\_.  
 (A) 46 (B) 48 (C) 26 (D) 14
- 15 - If non-protein part of an enzyme is loosely attached to the protein part, it is known as \_\_\_\_\_.  
 (A) activator (B) prosthetic group (C) co-enzyme (D) Apo enzyme
- 16 - The percentage of water in human bone cells is \_\_\_\_\_.  
 (A) 10 (B) 20 (C) 30 (D) 85
- 17 - Study of distribution of animals in nature is called \_\_\_\_\_.  
 (A) Ecology (B) Environmental Biology (C) Zoogeography (D) Social Biology

**220-(IV)-321-23000**

**Note:** Section I is compulsory. Attempt any THREE (3) questions from Section II.

**(SECTION – I)****2. Write short answers to any EIGHT questions.****(2 x 8 = 16)**

- i - Differentiate between anabolism and catabolism.
- ii - What do you know about "Induced Fit Model" of enzyme action?
- iii - Define active site and also give its two regions.
- iv - How enzyme-substrate complex is formed?
- v - What is nuclear mitosis?
- vi - Describe some antibiotics obtained from fungi.
- vii - Differentiate between radial and biradial symmetry.
- viii - Give four parasitic adaptations in Platyhelminthes.
- ix - Write down the characteristics of amphibians.
- x - What are running birds? Give examples.
- xi - What do you know about compensation point?
- xii - Give accessory photosynthetic pigments.

**3. Write short answers to any EIGHT questions.****(2 x 8 = 16)**

- i - What are bio-pesticides? Give example.
- ii - Define integrated disease management.
- iii - Differentiate between phagocytosis and pinocytosis.
- iv - What are choanoflagellates? Why they are of special interest?
- v - How algae differ from plants?
- vi - Define thallus.
- vii - How green algae and plants form a monophyletic lineage?
- viii - Why bryophytes are called amphibians of plants?
- ix - Differentiate between microphyll and megaphyll.
- x - Write down something about the Irish potato famine.
- xi - How pyruvic acid is activated?
- xii - Why calvin cycle is called as C<sub>3</sub>-Pathway?

**4. Write short answers to any SIX questions.****(2 x 6 = 12)**

- i - Write down about five kingdom classification system proposed by Margulis and Schwartz.
- ii - How conjugation occurs in bacteria?
- iii - Differentiate between cardiac and pyloric sphincter.
- iv - Define digestion. Give its types.
- v - How trapping and digestion of insects occurs in venus-fly trap?
- vi - Define trachea.
- vii - How inspiration occurs in human?
- viii - Write down about the concentration of carbon dioxide in arterial and venous blood.
- ix - What is tuberculosis?

**(SECTION – II)**

5. (a) Write down a note on "protection and conservation of environment". (4)
- (b) Write down about "Cohesion Tension Theory" of ascent of sap. (4)
6. (a) Explain the primary and secondary structure of proteins. (4)
- (b) Write down a note on sac-fungi. (4)
7. (a) Describe flagella and their functions. (4)
- (b) Write down a note on life cycle of angiospermic plant. (4)
8. (a) Write down a note on AIDS. (4)
- (b) Draw and label calvin cycle. (Description is not required) (4)
9. (a) Write down a note on mitochondria. (4)
- (b) How absorption of food takes place in small intestine? (4)



Roll No. of Candidate : \_\_\_\_\_

**BIOLOGY****(INTERMEDIATE PART - I) 321 - (IV) Paper – I Group-II****Time: 20 Minutes****OBJECTIVE - - - - Code : 6468****Marks: 17**

**Note:** You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question. Attempt as many questions as given in objective type question paper and leave others blank.

1. It is estimated that in normal persons blood cells or cell like bodies constitute by volume of blood.  
(A) 55% (B) 50% (C) 45% (D) 40%
2. The average life span of red blood cells in human is about \_\_\_\_\_ month/months.  
(A) one (B) two (C) three (D) four
3. Venous blood contains carbon dioxide about \_\_\_\_\_.  
(A) 50 ml / 100 ml (B) 60 ml / 100 ml (C) 54 ml / 100 ml (D) 64 ml / 100 ml
4. In stomach hydrochloric acid is secreted in concentrate form. For the pepsin to act on protein pH is adjusted ranging from \_\_\_\_\_.  
(A) 1 – 2 (B) 2 – 3 (C) 3 – 4 (D) 4 – 5
5. During glycolysis 1 – 3 Bisphosphoglycerate gives one phosphate to ADP to convert into ATP and becomes \_\_\_\_\_.  
(A) 3-phosphoglycerate (B) 2-phosphoglycerate (C) phosphoenol pyruvate (D) phosphoglycerate
6. Alcoholic and lactic acid fermentations yield small amount of energy present within the chemical bonds of glucose which is converted into ATP. It is only about \_\_\_\_\_.  
(A) 2 (B) 5 (C) 10 (D) 20
7. Which of the following annelids is marine?  
(A) stylaria (B) nereis (C) hirudo (D) pheretima
8. Among vertebrates sting rays are \_\_\_\_\_.  
(A) reptiles (B) amphibians (C) fishes (D) mammals
9. Imperfect fungi belong to phylum.  
(A) zygomycota (B) ascomycota (C) deuteromycota (D) basidiomycota
10. Among gymnosperms cedar plant is commonly called \_\_\_\_\_.  
(A) deodar (B) hemlock (C) sago-palm (D) pine
11. Which one of the following belongs to green algae?  
(A) euglena (B) acetabularia (C) polysiphonia (D) fucus
12. Which one of the following is an example of spiral shaped bacteria?  
(A) escherichia coli (B) bacillus subtilis (C) pseudomonas (D) hyphomicrobium
13. Which one of the following viral disease is not caused by RNA virus?  
(A) small pox (B) influenza (C) poliomyelitis (D) mumps
14. Which one of the following cellular organelles is called power house of the cell?  
(A) chloroplast (B) mitochondria (C) golgibodies (D) lysosomes
15. The enzymes involved in cellular respiration are found in \_\_\_\_\_.  
(A) chloroplast (B) ribosomes (C) mitochondria (D) golgibodies
16. Types of amino acids found to occur in cells and tissues is about \_\_\_\_\_.  
(A) 150 (B) 140 (C) 155 (D) 170
17. The branch of biology which deals with the use of living organisms, systems or processes in manufacturing and service industry is called \_\_\_\_\_.  
(A) biotechnology (B) human biology (C) molecular biology (D) social biology



**Note:** Section I is compulsory. Attempt any THREE (3) questions from Section II.



**(SECTION – I)**

**2. Write short answers to any EIGHT questions.**

**(2 x 8 = 16)**

- i - Define a peptide bond and how it is formed?
- ii - Differentiate between apoenzyme and holoenzyme.
- iii - What is a co-factor? Give its significance.
- iv - Give four characteristics of enzymes.
- v - How fungi differ from animals?
- vi - Write down a short note on omnivorous fungi.
- vii - Write down two differences between protostomes and deuterostomes along with examples.
- viii - Give asexual reproduction in sponges.
- ix - What are polyps and medusae?
- x - Give four characteristics of bony fishes.
- xi - How dark reaction can be summarized in an equation?
- xii - Differentiate between chlorophyll-a and chlorophyll-b.

**3. Write short answers to any EIGHT questions.**

**(2 x 8 = 16)**

- i - Differentiate between fresh water and marine water biology.
- ii - What is theory? Write down properties of a good theory.
- iii - What is primary wall? Give its chemical composition.
- iv - Differentiate between chromoplast and leucoplast.
- v - Define thallus.
- vi - Give two characteristics of Euglenoids.
- vii - Mention structural features of red algae.
- viii - Write down four importance of algae.
- ix - Name floral leaves of a flower along with their functions.
- x - What is double fertilization?
- xi - Define hypertension and its cause.
- xii - Write down two functions of lymphatic system.

**4. Write short answers to any SIX questions.**

**(2 x 6 = 12)**

- i - Write down any four characteristic features of viruses.
- ii - Write down about spiral shaped bacteria. Give all its three forms.
- iii - How trapping and digestion of insects occur in sundew?
- iv - What is dyspepsia?
- v - Define saprophytic nutrition.
- vi - How expiration occurs in human?
- vii - What is lung cancer?
- viii - How pH affects the capacity of haemoglobin to combine with oxygen?
- ix - Give composition of breathed air in man.

**(SECTION – II)**

5. (a) Write down a note on “protection and conservation of environment”. (4)  
 (b) Enlist different functions that blood performs in human body. (4)
6. (a) Write down a note on nucleic acids. (4)  
 (b) Describe in detail basidiomycota. (4)
7. (a) Discuss control of bacteria by physical and chemical methods. (4)  
 (b) Write down a note on evolution of leaf. (4)
8. (a) Describe life cycle of bacteriophage. (4)  
 (b) Write down a note on photosystems. (4)
9. (a) Describe the structure and function of mitochondria. (4)  
 (b) Write down food absorption in small intestine of man. (4)



## Gujranwala Board-2019

Id. of Candidate: \_\_\_\_\_

gy (New Scheme)  
20 Minutes

**(INTERMEDIATE PART-I) 319-(I)**  
**OBJECTIVE**  
**Code: 6461**

**Paper: I**  
**Marks: 17**

You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question. Attempt as many questions as given in objective type question paper and leave other blank.

1. A large regional community primarily determined by climate is:  
A) biome                      B) biosphere                      C) species                      D) population
2. Human tissue contains about 20% water in:  
A) brain cells                      B) bone cells                      C) kidney                      D) skin cells
3. Emil Fischer proposed a lock and key model in:  
A) 1990                      B) 1880                      C) 1800                      D) 1890
4. The soluble part of the cytoplasm is called:  
A) stroma                      B) gel                      C) cytosol                      D) matrix
5. About 25 minutes after initial infections approximate number of new bacteriophages formed is:  
A) 100                      B) 200                      C) 2000                      D) 500
6. Cell wall of gram positive bacteria are stained:  
A) pink                      B) red                      C) green                      D) purple
7. Amoebae moves by forming specialized cytoplasmic projection called:  
A) cilia                      B) pseudopodia                      C) flagella                      D) tube feet
8. As a result of meiosis, the number of ascospores produced in each ascus is:  
A) 06                      B) 07                      C) 08                      D) 05
9. Double fertilization is the characteristic feature of:  
A) angiosperm                      B) gymnosperm                      C) bryophytes                      D) anthocerosida
10. All "flatworms" belong to phylum:  
A) annelida                      B) platyhelminthes                      C) arthropoda                      D) nematoda
11. Ancylostoma duodenale is commonly known as:  
A) earthworm                      B) pin worm                      C) tape worm                      D) hook worm
12. Each mesophyll cell has about:  
A) 80 chloroplast                      B) 200 chloroplast                      C) 20 – 100 chloroplast                      D) 500 chloroplast
13. Pyruvic acid is produced as a result of:  
A) kreb's cycle                      B) glycolysis                      C) respiratory chain                      D) photophosphorylation
14. Length of the duodenum is:  
A) 20 – 25 cm                      B) 20 – 25 meters                      C) 20 – 25 mm                      D) 20 – 25 Km
15. The number of pairs of spiracles in abdominal segments of cockroach are:  
A) 02                      B) 12                      C) 08                      D) 10
16. The phenomenon in which loss of liquid water through water secreting glands takes place is:  
A) imbibition                      B) guttation                      C) ascent of sap                      D) bleeding
17. The mammalian red blood cells are:  
A) biconvex                      B) convex                      C) concave                      D) biconcave

222-(I)-319-39000

**(SECTION - I)**

**Write short answers to any EIGHT questions.**



**(2 × 8 = 16)**

- i. Sketch ribofuranose and glucopyranose.
- ii. Differentiate between "apoenzyme" and "holoenzyme".
- iii. What is induced fit model? Who proposed it?
- iv. What are reversible and irreversible inhibitors?
- v. Define nuclear mitosis. In which kingdom it is found?
- vi. Define parasexuality.
- vii. Differentiate between "radial cleavage" and "spiral cleavage".
- viii. How insects are beneficial to man?
- ix. Write a short note on ecdysis or moulting.
- x. What are anamniotes and amniotes?
- xi. Define photosynthesis. Give its summary equation.
- xii. What are alcoholic fermentation and lactic acid fermentation?

**Write short answers to any EIGHT questions.**

**(2 × 8 = 16)**

- i. What is hydroponic culture technique?
- ii. What is biological control?
- iii. Give postulates of cell theory.
- iv. What is meant by polysome?
- v. Give an example of water molds, why it is notorious?
- vi. How Algae differ from plants?
- vii. What are red tides?
- viii. Give importance of foraminiferans.
- ix. What are sori?
- x. What is phylogenetic system of classification?
- xi. Define imbibition.
- xii. What are blue babies?

**Write short answers to any SIX questions.**

**(2 × 6 = 12)**

- i. Give biological classification of corn.
- ii. Differentiate between "microbicidal effect" and "microbistatic effect".
- iii. List processes involved in holozoic nutrition.
- iv. What are macrophagous feeders? Give example.
- v. Write a short note on pyrosis or heart burn.
- vi. How significant parabronchi are in respiration of birds?
- vii. What is mechanism of inhalation of air in man?
- viii. Give % age of oxygen and carbon dioxide in inhaled and exhaled air.
- ix. Write a short note on emphysema.

**(SECTION - II)**

- |   |     |
|---|-----|
| (a) What is cloning? Explain procedures of cloning.   | 4   |
| (b) Explain pressure flow theory.   | 4   |
| (a) Write note on primary and secondary structure of proteins.                                | 4   |
| (b) Give economic gains due to fungi.   | 4   |
| (a) Discuss economic importance of cyanobacteria.   | 4   |
| (b) Discuss life cycle of Maiden-hairfern.  | 4   |
| (a) Define Hepatitis. Describe its various types.   | 4   |
| (b) Describe respiratory electron transport chain.  | 4   |
| (a) What are plastids? Describe main types.   | 1+3 |
| (b) How insectivorous plants meet their demands of organic compounds? Describe three methods. | 1+3 |



**NOTE:** You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question. Attempt as many questions as given in objective type question paper and leave others blank.

- 1 - Pseudocoelom is characteristic feature of phylum  
(A) nematoda (B) echinodermata (C) mollusca (D) annelida
- 2 - Histoplasmosis is a  
(A) heart disease (B) kidney disease (C) lungs disease (D) liver disease
- 3 - Conjugation in bacteria is promoted by  
(A) flagella (B) pili (C) cilia (D) gametes
- 4 - Casparian strips are present in  
(A) epidermis (B) endodermis (C) cortex (D) pericycle
- 5 - Most abundant carbohydrate in nature is  
(A) starch (B) glycogen (C) cellulose (D) agar
- 6 - One complete heart cycle lasts for about  
(A) 0.2 sec (B) 0.5 sec (C) 0.8 sec (D) 1.0 sec
- 7 - In earthworm exchange of gases mainly takes place through  
(A) gills (B) lungs (C) skin (D) ostia
- 8 - Number of chloroplasts in each mesophyll cell is about  
(A) 70 - 100 (B) 10 - 200 (C) 20 - 100 (D) 20 - 200
- 9 - Which of the following is a motile coelenterate?  
(A) hydra (B) obelia colony (C) jelly fish (D) corals
- 10 - Study of social behaviour of human is called  
(A) anatomy (B) social biology (C) paleontology (D) physiology
- 11 - Poisons like cyanides, antibiotics and some drugs are examples of  
(A) enzymes (B) co-enzymes (C) inhibitors (D) cofactors
- 12 - Orders include related  
(A) families (B) genera (C) species (D) classes
- 13 - Entamoeba histolytica causes amoebic  
(A) cholera (B) fever (C) dysentery (D) migraine
- 14 - Group of ribosomes attached to mRNA molecule is  
(A) lysosome (B) polysome (C) endosome (D) peroxisome
- 15 - In hydra ectodermal cells get food from endodermal cells by  
(A) osmosis (B) diffusion (C) active transport (D) facilitated diffusion
- 16 - pH gradient drives the formation of ATP across membrane in the process called  
(A) respiration (B) chemiosmosis (C) calvin cycle (D) conduction
- 17 - Double fertilization is a characteristic feature of  
(A) gymnosperms (B) angiosperms (C) bryophytes (D) ferns

Note: Section I is compulsory. Attempt any three (3) questions from Section II.

**(SECTION – I)**

2. Write short answers to any EIGHT questions.

(2 x 8 = 16)

- i - What are bioelements?
- ii - Define molecular biology.
- iii - What is binomial nomenclature?
- iv - Give lock and key model of enzyme.
- v - What is the role of enzyme concentration on the rate of enzyme action?
- vi - Define competitive inhibitors.
- vii - Define metamorphosis and nymph.
- viii - What is haemocyanin?
- ix - Give two beneficial roles of mollusca.
- x - What are tetrapoda?
- xi - What are hyphae and mycelium?
- xii - Differentiate between conidia and conidiophore.

3. Write short answers to any EIGHT questions.

(2 x 8 = 16)

- i - What are plasmids?
- ii - What are zooflagellates? Give one example.
- iii - Define thallus.
- iv - Why euglenoids have special evolutionary significance?
- v - Why diatoms are important in aquatic food chains?
- vi - Define kingdom plantae.
- vii - What is homosporous? Give one example.
- viii - What is a porphyrin ring of a chlorophyll molecule?
- ix - What are cytochromes?
- x - What is a nutrient?
- xi - What is pyrolysis?
- xii - Define villi.

4. Write short answers to any SIX questions.

(2 x 6 = 12)

- i - Differentiate between microtubules and microfilaments.
- ii - What are Golgi apparatus? Give its functions.
- iii - Define monosaccharides with examples.
- iv - What are blood platelets? Give their main function.
- v - Where the human's heart is located in the body? Give names of layers that surround the heart.
- vi - What are Guard cells? Give their functions.
- vii - What do you mean by pulmonary respiration and cutaneous respiration?
- viii - What are the symptoms of emphysema?
- ix - What are parabronchi?