

**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.

**QUESTION NO. 1**

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| 1  | The study of fossils is called<br>(A) Histology (B) Genetics (C) Palaeontology (D) Morphology  |
| 2  | Haemoglobin molecule exhibits which structural organization<br>(A) Primary structure (B) Secondary structure (C) Tertiary structure (D) Quaternary structure |
| 3  | Enzymes important in photosynthesis are found in<br>(A) Chloroplast (B) Mitochondria (C) Nucleus (D) Vacuole   |
| 4  | Cyclosis and amoeboid movements are because of<br>(A) Microtubules (B) Microfilaments (C) Intermediate filaments (D) None of these                           |
| 5  | Amoeba belongs to kingdom<br>(A) Protista (B) Plantae (C) Animalia (D) Fungi   |
| 6  | A bacterium without any flagellum is called<br>(A) Peritrichous (B) Lophotrichous (C) Atrichous (D) Monotrichous   |
| 7  | Based on molecular data Euglenoids are thought to be closely related to<br>(A) Brown algae (B) Green algae (C) Diatoms (D) Zooflagellates                    |
| 8  | Unicellular fungi which is non hyphal is<br>(A) Yeast (B) Mushroom (C) Alternaria (D) Penicillium  |
| 9  | How many years before first complete seed appeared ?<br>(A) 350 million year ago (B) 365 million year ago (C) 300 million year ago (D) 370 million year ago  |
| 10 | A free living flatworm with ciliated outer surface is<br>(A) Round worm (B) Pin worm (C) Planaria (D) Coral  |
| 11 | The insects that move in large number and cause damage to standing crops is<br>(A) Fleas (B) Bugs (C) Grasshopper (D) Locusts                                |
| 12 | Yellow to orange colour pigments present in chloroplast are<br>(A) Carotenoids (B) Xanthophylls (C) Carotenes (D) Chlorophyll b                              |
| 13 | Glycolysis takes place in<br>(A) Cytosol (B) Mitochondria (C) Nucleus (D) Vacuole  |
| 14 | Carbohydrate digesting enzyme amylopsin digest starch into<br>(A) Lactose (B) Sucrose (C) Maltose (D) Fructose   |
| 15 | Iron containing protein pigment present in muscle fibre is<br>(A) Haemoglobin (B) Myoglobin (C) Haemocyanin (D) Phycobilin                                   |
| 16 | Which type of white blood cell stays 10 to 20 hours in blood then become macrophages ?<br>(A) Monocyte (B) Neutrophil (C) Basophil (D) Eosinophil            |
| 17 | The heart of cockroach has how many chambers ?<br>(A) 11 (B) 12 (C) 13 (D) 14  |

**QUESTION NO. 2 Write short answers of any Eight (8) parts of the following** **16**

- (1) Differentiate between anabolic and catabolic reaction
- (2) Define cofactor and write down its roles
- (3) Define Induced Fit Model of enzyme catalysis and who proposed it ?
- (4) Define inhibitors and give two examples
- (5) Differentiate between endo and ectomycorrhizae
- (6) Define ergotism
- (7) Write down two characteristics of chordata
- (8) What are gemmules ?
- (9) Write down two adaptations for parasitic mode of life in Platyhelminthes
- (10) What is radula and in which phylum it is present ?
- (11) Differentiate between chlorophyll a and chlorophyll b by their molecular formula
- (12) What is alcoholic fermentation ?

**QUESTION NO. 3 Write short answers of any Eight (8) parts of the following** **16**

- (1) Define deductive reasoning with example
- (2) What is Pasteurization ?
- (3) Differentiate between Phagocytosis and Pinocytosis
- (4) What is Cytosol ?
- (5) What are choanoflagellates ?
- (6) What is meant by pellicle ?
- (7) What are Euglenoids ?
- (8) Give importance of Algae
- (9) Define double fertilization
- (10) Write down any two differences between monocot and dicot
- (11) Define pressure flow theory
- (12) What is cell mediated response ?

**QUESTION NO. 4 Write short answers of any Six (6) parts of the following** **12**

- (1) What is Herpes simplex ?
- (2) What are misuse of antibiotic ? Give example
- (3) What are the causes of Jaundice and Gall-stones in man ?
- (4) Write the composition of saliva in man
- (5) Write Parasitic Nutrition in plants
- (6) What is the composition of inhaled and exhaled air , in breathing
- (7) Define carcinoma. Give its causes
- (8) Why the larynx is called Voice-Box ?
- (9) Write Mechanism of inspiration in man

**SECTION-II**

**Note: Attempt any Three questions from this section**

**8 x 3 = 24**

- Q.5 (A) Describe biological method to solve a biological problem  
(B) Describe Cohesion Tension theory for transport of water
- Q.6 (A) Describe the primary and secondary structure of protein  
(B) Write a note on economic losses due to fungi
- Q.7 (A) Describe various physical and chemical methods to control bacteria  
(B) Discuss at least four steps for the evolution of seed habit
- Q.8 (A) Give labelled sketch of infection cycle of HIV  
(B) Describe non-cyclic photophosphorylation
- Q.9 (A) Write a complete note on lysosome. Explain its phagocytic role with the help of diagram  
(B) Discuss the absorption of food in small intestine

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**QUESTION NO. 1**

- |    |  |
|----|--|
| 1  | Excretory organs present in Annelids are<br>(A) Nephridia (B) Flame cell (C) Malpighian tubules (D) Kidney   |
| 2  | The cartilaginous fishes have scales<br>(A) Cycloid (B) Ganoid (C) Placoid (D) Ctenoid   |
| 3  | Formula of lactic acid is<br>(A) $C_3H_6O_3$ (B) $C_3H_4O_3$ (C) $C_3H_5O_3$ (D) $C_3H_5OH$  |
| 4  | Which human organ is protected by carotenoids ?<br>(A) Skin (B) Liver (C) Eye (D) Brain  |
| 5  | pH of fresh saliva is<br>(A) 6 (B) 7 (C) 8 (D) 9   |
| 6  | Diameter of bronchiole is<br>(A) 1 mm (B) 1 cm (C) 1 dm (D) 1 m  |
| 7  | Guttation occurs in plants through<br>(A) Lenticels (B) Hydathode (C) Cuticle (D) Stomata  |
| 8  | Lymph vessels empty in<br>(A) Arteries (B) Arteriole (C) Capillaries (D) Vein  |
| 9  | The study of tissues is called<br>(A) Morphology (B) Anatomy (C) Physiology (D) Histology  |
| 10 | Lipid molecule store double amount of energy as compared to same amount of carbohydrate due to high proportion of<br>(A) C - N bond (B) C - H bond (C) C - O bond (D) C - C bond |
| 11 | Reversible inhibitors form weak linkage with<br>(A) Substrate (B) Product (C) Enzyme (D) Reactant  |
| 12 | The number of pores in nuclear membrane of erythrocyte is<br>(A) 03 or 04 (B) 02 or 03 (C) 05 or 06 (D) 30,000   |
| 13 | Small pox is caused by<br>(A) Bacteria (B) Virus (C) Protozoan (D) Fungi   |
| 14 | The smallest bacteria is<br>(A) Mycoplasma (B) E. Coli (C) Pseudomonas (D) Clostridium   |
| 15 | The vector in sleeping sickness disease is<br>(A) House fly (B) Tsetse fly (C) Fruit fly (D) Butter fly  |
| 16 | The example of soil dwelling carnivorous fungus is<br>(A) Pleurotus (B) Penicillium (C) Arthrotrys (D) Armillaria  |
| 17 | Bryophytes are generally believed to have evolved from<br>(A) Brown algae (B) Red algae (C) Golden algae (D) Green algae   |

**QUESTION NO. 2 Write short answers of any Eight (8) parts of the following 16**

- (1) Differentiate between nucleotide and nucleoside
- (2) Differentiate between prosthetic group and coenzyme
- (3) Define Lock and Key model of catalysis and who proposed it ?
- (4) What are non competitive inhibitors ?
- (5) Differentiate between asci and ascocarps
- (6) What is histoplasmosis ?
- (7) Differentiate between polyps and medusae
- (8) Define metamorphosis
- (9) Enlist two beneficial insects
- (10) What is syrinx and where it is situated ?
- (11) Enlist stages of cellular respiration
- (12) What are photosystems ?

**QUESTION NO. 3 Write short answers of any Eight (8) parts of the following 16**

- (1) How does theory differ from law ?
- (2) What is hydroponic culture technique ?
- (3) Write down chemical composition of secondary wall
- (4) What is the significance of vacuole in plants ?
- (5) How Algae differ from plants ?
- (6) Define zooflagellates
- (7) What is conjugation ?
- (8) What is the significance of *Physarum polycephalum* ?
- (9) Differentiate between microphyll and megaphyll leaf
- (10) Define Ovule and Integument
- (11) What is symplast pathway ?
- (12) What are blue babies ?

**QUESTION NO. 4 Write short answers of any Six (6) parts of the following 12**

- (1) What is lysogenic cycle of phage ?
- (2) Name four phases of Bacterial growth
- (3) Enlist enzymes secreted by jejunum
- (4) What do you know about disease Dyspepsia ?
- (5) Write some features of rectum
- (6) What is the capacity of Haemoglobin to pick and lose O<sub>2</sub> – during breathing ?
- (7) What is tuberculosis ? Give its causes
- (8) Write disadvantages of Gas-exchange in water
- (9) Name the properties of Respiratory Surfaces in animals

**SECTION-II**

**Note: Attempt any Three questions from this section**

**8 x 3 = 24**

- Q.5 (A) Define any eight branches of biology  
(B) Describe pressure flow theory of phloem transport
- Q.6 (A) Write a note on carbohydrates  
(B) What are various methods of asexual reproduction met within fungi ?
- Q.7 (A) What are the uses and misuses of antibiotics ?  
(B) Write a detailed note on class Gymnospermae
- Q.8 (A) Explain replication of Bacteriophage  
(B) Draw labelled sketch of Calvin cycle
- Q.9 (A) Define plastids. Discuss structure and function of chloroplast  
(B) Discuss characteristic processes involved in holozoic nutrition