

Biology

Paper I (Objective Type)

Time Allowed: 20 Minutes

Group-I

Maximum Marks: 17

NOTE: You have four choice 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 circle. Cutting or filling two or more circles will result in zero mark in that question. Attempt as many questions as given in objective type questions papers and leave others blank. No credit will be awarded in case. BUBBLE are not filled. Do not solve questions on this sheet of OBJECTIVE PAPER.

1. **The animal with exceptionally large brain is:**
 (A) Star fish (B) Octopus (C) Snail (D) Sepia
2. **Tentacles is a characteristic of:**
 (A) Hydra (B) Snail (C) Amoeba (D) Euglena
3. **The resolution of human naked eye is:**
 (A) 1.0 mm (B) 0.3 mm (C) 0.6 mm (D) 0.7 mm
4. **Spiracle are found in:**
 (A) Fish (B) Cockroach (C) Leech (D) Earthworm
5. **Lovastain is used for lowering blood:**
 (A) Pressure (B) Cholestrol (C) Glucose (D) Salts
6. **Single circuit circulation is found:**
 (A) Man (B) Cat (C) Fish (D) Bird
7. **Bacteria without any flagella are:**
 (A) Monotrichus (B) Atrichus (C) Lophotrichus (D) Amphitrichus
8. **The most abundant carbohydrate is:**
 (A) Starch (B) Cellulose (C) Glucose (D) Maltose
9. **The hypothesis that plants split water as a source of hydrogen was given by:**
 (A) Van Niel (B) Kreb (C) Calvin (D) Pasteur
10. **Photosynthetic prokaryotes lack:**
 (A) Ribosomes (B) Cytoplasm (C) Chloroplasts (D) Cell membrane
11. **Tomato belongs to family:**
 (A) Rocsaceae (B) Poaceae (C) Solanaceae (D) Fabaceae
12. **Induce fit model was proposed by:**
 (A) Jenner (B) Pasteur (C) Koshland (D) Emil Fischer
13. **A unicellular, non motile green alga is:**
 (A) Volvox (B) Ulva (C) Chlorella (D) Kelps
14. **Binomial nomenclature system was given by:**
 (A) Pasteur (B) De Deuve (C) Lamark (D) Linnaeus
15. **Sea anemone belongs to phylum:**
 (A) Coelenterata (B) Arthropoda (C) Echinodermata (D) Annelida
16. **Antiserum is a serum containing:**
 (A) Hormones (B) Antigen (C) Enzyme (D) Atibodies
17. **In human body amount of oxygen is:**
 (A) 50% (B) 65% (C) 70% (D) 40%

1.	B	2.	A	3.	A	4.	B	5.	B	6.	C
7.	B	8.	B	9.	A	10.	C	11.	C	12.	C
13.	C	14.	D	15.	A	16.	D	17.	B		

NOTE:- Write same question number and its part number on answer book, as given in the question paper.

SECTION-I**2. Attempt any eight parts.****8 × 2 = 16**

- i. Show peptide bond between two amino acids.
- ii. Define apoenzyme and prosthetic group.
- iii. Differentiate between competitive and non-competitive inhibitors.
- iv. Differentiate between pepsin and pepsinogen.
- v. What are conidia and spores?
- vi. Differentiate between plasmogamy and karyogamy.
- vii. Differentiate between parazoa and eumetazoa.
- viii. What is archaeopteryx? Give its two characters.
- ix. Give two examples of sponges.
- x. Differentiate between polyps and medusae.
- xi. Define photosynthesis. Write its equation.
- xii. Differentiate between antenna complex and reaction centre.

3. Attempt any eight parts.**8 × 2 = 16**

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|---|---|
| (i) Differentiate between inductive and deductive reasoning. | (vii) Write down two characteristics of apicomplexans. |
| (ii) Define phyletic lineage. | (viii) What do you know about giant amoeba? |
| (iii) Give chemical composition of primary and secondary cell wall. | (ix) Differentiate between bryophytes and tracheophytes. |
| (iv) What are microfilaments? Give their functions. | (x) Define double fertilization. |
| (v) How ciliates differ from other protozoans? | (xi) Differentiate between plasmolysis and deplasmolysis. |
| (vi) What are choanoflagellates? | (xii) What are blue babies? |

4. Attempt any six parts.**6 × 2 = 12**

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|--|---|
| (i) What are prions? | (v) How trypsinogen is activated? |
| (ii) Differentiate between tetrad and sarcina. | (vi) What are spiracles? |
| (iii) Define dyspepsia and also mention its characteristics. | (vii) Enlist types of respiration in frog. |
| (iv) Differentiate between appendix and appendicitis. | (viii) What is respiratory distress syndrome? |
| | (ix) What changes occur in diving reflex? |

SECTION-II

NOTE: - Attempt any three questions.

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|---|---|
| 5. (a) Discuss Biology in the serving of mankind in field of disease control. | 4 |
| (b) Soil water moves and reaches to xylem tissues by various pathways, explain. | 4 |
| 6. (a) Explain polysaccharides with examples. | 4 |
| (b) Describe digestion in hydra. | 4 |
| 7. (a) Explain the structure and functions of lysosomes. | 4 |
| (b) Write a note on Calvin Cycle. | 4 |
| 8. (a) Explain lytic cycle of bacteriophage. | 4 |
| (b) Write a note on lycopsida. | 4 |
| 9. (a) Discuss the use and misuse of antibiotics. | 4 |
| (b) Describe different methods of asexual reproduction found in fungi. | 4 |

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- 1-1 **Organelle of symbiotic origin is :**
(A) Mitochondria (B) Vacule (C) Ribosome (D) Golgi body
2. **Thylakoid membranes are involved in ATP synthesis by :**
(A) Glycolysis (B) Dark reaction (C) Chemiosmosis (D) Photo lysis
3. **Germ theory of disease was formulated by :**
(A) Robert Koch (B) Louis Pasteur (C) Edward Jenner (D) Christian Gram
4. **Ancylostoma duodenale is commonly known as :**
(A) Flat worm (B) Tap worm (C) Hookworm (D) Fluke
5. **A group of similar cells that performs a specific function is called :**
(A) Organ (B) Tissue (C) Organelle (D) Organ system
6. **Mosses belong to the subdivision :**
(A) Hepaticopsida (B) Bryopsida (C) Anthoceropsida (D) Ascomycota
7. **In male human beings the amount of red blood cells per cubic millimeter is :**
(A) 5-5 ½ million (B) 4-4 ½ million (C) 6-6 ½ million (D) 3-3 ½ million
8. **The partly digested food in cockroach is temporarily stored in :**
(A) Crop (B) Gizzard (C) Rectum (D) Stomach
9. **Change in water potential of a system due to the presence of solute molecules is called :**
(A) Pressure potential (B) Solute potential
(C) Matric potential (D) Gravitational potential
10. **The specific heat of vaporization of water is :**
(A) 574 Kcal / kg (B) 374 Kcal/kg (C) 474 Kcal / kg (D) 674 Kcal / kg
11. **Rhizopus belongs to the phylum :**
(A) Ascomycota (B) Basidiomycota (C) Zygomycota (D) Deuteromycota
12. **In the lungs of birds tiny thin walled ducts for constant ventilation are called :**
(A) Gill rakers (B) Parabronchi (C) Larynx (D) Pharynx
13. **In phylum coelenterata special cells cnidocytes give rise to :**
(A) Polyps (B) Nematocysts (C) Gastrozooids (D) Gemmules
14. **Energy poor inorganic oxidized compounds are reduced to energy rich carbohydrates during :**
(A) Respiration (B) Photosynthesis (C) Development (D) Growth
15. **The percentage of lipids in plasma membrane is :**
(A) 60- 80 % (B) 30-60% (C) 20-40% (D) 10-20%
16. **The feeding stage of a slime mold is called :**
(A) Thallus (B) Hyphae (C) Mycelium (B) Plasmodium
17. **The vitamins are essential raw materials for the synthesis of :**
(A) Coenzymes (B) Activators (C) Holoenzymes (D) Apoenzymes

1.	A	2.	C	3.	A	4.	C	5.	B	6.	B
7.	A	8.	A	9.	B	10.	A	11.	C	12.	B
(13.	B	14.	B	15.	C	16.	D	17.	A		

NOTE:- Write same question number and its part number on answer book, as given in the question paper.**SECTION-I****2. Attempt any eight parts.****16**

- (i) What F.Sanger concluded about insulin?
- (ii) Differentiate between prosthetic group and co-enzyme.
- (iii) What do you mean by induce fit model of enzyme action?
- (iv) Write down the effect of high temperature on an enzyme.
- (v) What is histoplasmosis? How does its infection spread?
- (vi) Differentiate between septate and non-septate hyphae.
- (vii) What is metameric segmentation? In which phylum is it present?
- (viii) Differentiate between radial and bilateral symmetry.
- (ix) What is metamorphosis?
- (x) Give three basic characteristics of chordates.
- (xi) Give the function of spectrophotometer.
- (xii) Define glycolysis. Where does it take place?

3. Attempt any eight parts.**16**

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|---|---|
| (i) Define bioelements. Give two examples. | (vi) How algae differ from plants? |
| (ii) Differentiate between deductive and inductive reasoning. | (vii) What is giant amoeba? |
| (iii) Define fluid mosaic model of cell membrane. | (viii) Write down two characteristics of dinoflagellates. |
| (iv) Write down the two functions of golgi complex. | (ix) Define cercinate venation. |
| (v) What is chlorella? Give its importance. | (x) Define ovule and embryo sac. |
| | (xi) What is humoral immune response? |
| | (xii) Differentiate between thrombus and embolus. |

4. Attempt any six parts.**12**

- (i) Define binomial nomenclature. Give an example.
- (ii) Differentiate between lophotrichous and amphitrichous.
- (iii) How diarrhea and constipation are caused?
- (iv) Differentiate between ingestion and egestion.
- (v) How air is better respiratory medium than water?
- (vi) What is asthma? Give its causes.
- (vii) Describe the CO₂ concentration in artery and venous blood of man.
- (viii) What is heart burn or pyrosis?
- (ix) State myoglobin and its functions.

SECTION-II**NOTE: - Attempt any three questions.**

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|---|---|
| 5. (a) Write a comprehensive note on functions of blood. | 4 |
| (b) What is cloning? Discuss its methods and application. | 4 |
| 6. (a) Discuss Watson and Crick model of DNA. | 4 |
| (b) Discuss the process of nutrition in insectivorous plants. | 4 |
| 7. (a) What are lysosomes? Give their functions. | 4 |
| (b) Draw and label Z-scheme/non-cyclic phosphorylation. | 4 |
| 8. (a) What is hepatitis? Give its symptoms and discuss its three common types. | 4 |
| (b) Describe life cycle of adiantum. | 4 |
| 9. (a) Describe nutrition in bacteria. | 4 |
| (b) Give economic gains of fungi. | 4 |