



# BIOLOGY HSSC-I

## SECTION - A (Marks 17)

19

Punjab Text Book Board

Time allowed: 25 Minutes

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Note: Section - A is compulsory. All parts of this section are to be answered on the separately provided OMR Answer Sheet which should be completed in the first 25 minutes and handed over to the Centre Superintendent. Deleting/overwriting is not allowed. Do not use lead pencil.

Q. 1 Choose the correct answer A / B / C / D by filling the relevant bubble for each question on the OMR Answer Sheet according to the instructions given there. Each part carries one mark.

- 1) Invertebrates like earthworms and snails in the soil with plants, trees and birds in the garden together constitute:  
A. Community      B. Ecosystem      C. Population      D. Biome
- 2) Which of the following reactions results in the conversion of amino acids into proteins?  
A. Deamination      B. Condensation      C. Hydrolysis      D. Phosphorylation
- 3) An essential feature of a competitive inhibitor is its ability to:  
A. Activate coenzyme      B. Modify a substrate  
C. Combine with prosthetic group      D. Occupy an active site
- 4) A certain poison disrupts the Cytoskeleton of cells. Which of the following functions would be affected most directly by this drug?  
A. Cell division      B. Cellular respiration  
C. Protein synthesis      D. Digestion with lysosomes
- 5) A fully formed infectious viral particle is called:  
A. Viroid      B. Virusoid      C. Virion      D. Capsid
- 6) The main difference between Gram +ve and Gram -ve bacteria lies in their:  
A. Cell wall      B. Cell membrane      C. Cytoplasm      D. Flagella
- 7) Which of the following is a parasitic Protozoan?  
A. Trypanosoma      B. Vorticella      C. Euglena      D. Radiolarian
- 8) Which of the following structures are associated with asexual reproduction in Fungi?  
A. Ascospores      B. Conidia      C. Basidiospores      D. Zygospores
- 9) \_\_\_\_\_ is an animal with metameric segmentation.  
A. Housefly      B. Planaria      C. Roundworm      D. Earthworm
- 10) What are seed producing plants called?  
A. Bryophytes      B. Pteridophytes      C. Spermatophytes      D. Arthropytes
- 11) Which of the following is not a part of Human Alimentary Canal?  
A. Pancreas      B. Oral Cavity      C. Oesophagus      D. Colon
- 12) The products of Light Dependent Reactions are:  
A. NADP and H<sub>2</sub>O      B. NADPH and ATP  
C. NADPH<sub>2</sub>      D. NADPH<sub>2</sub> and ATP
- 13) In normal circumstances i.e. at rest, humans breath:  
A. 16 to 20 times per min      B. 30 to 40 times per min  
C. 10 to 15 times per min      D. 25 to 35 times per min
- 14) Which of the following organelle always contain DNA?  
A. Centrioles      B. Lysosomes      C. Golgi Apparatus      D. Mitochondria
- 15) What is the benefit of Double Fertilization?  
A. Genetic recombination      B. Production of embryo  
C. Food storage      D. Production of one kind of spores
- 16) What is Systolic blood pressure?  
A. The maximum blood pressure in the arteries  
B. The blood pressure in the left ventricle at the end of a contraction  
C. The maximum blood pressure in the right ventricle  
D. The blood pressure in the arteries when the heart is contracting
- 17) B-Cells differentiate to form:  
A. Plasma cells      B. Effector cells  
C. Memory cells      D. Stem cells



# BIOLOGY HSEC-I

Punjab Text Book Board

20

Time allowed: 2:35 Hours

Total Marks Sections B, C and D: 68

NOTE: The Questions of sections B, C and D are to be answered on the separately provided answer book. Use supplementary answer sheet i.e. Sheet-B if required. Write your answers neatly and legibly.

## SECTION – B (Marks 21)

( Chapters 1 – 8 )

Q. 2 Answer any SEVEN parts from the following. All parts carry equal marks. (7 x 3 = 21)

- (i) Define the following terms:
  - a) Bioremediation
  - b) Transgenic plants
  - c) Organelles
- (ii) A person was suffering from Tay Sach's disease. What would have been the causes and symptoms observed by the doctor in the diagnosis of the disease?
- (iii) Differentiate between monosaccharides and polysaccharides.
- (iv) How is the Active site of an enzyme formed? What is it made of?
- (v) Draw the structure of HIV.
- (vi) What is the importance of Plasmids?
- (vii) Enlist the features of Foraminiferans.
- (viii) Name the different fruiting bodies and the types of spores they produce in Fungi.
- (ix) What type of a compound Glycylalanine is? Illustrate its formation.
- (x) Outline the role of Golgi Complex in the formation of cell secretions.

## SECTION – C (Marks 21)

( Chapters 9 – 14 )

Q. 3 Answer any SEVEN parts from the following. All parts carry equal marks. (7 x 3 = 21)

- (i) What is the significance of Alternation of Generation in plants?
- (ii) Differentiate between:
  - a) Protostomes and Deuterostomes
  - b) Chondrichthyes and Osteichthyes
- (iii) Mention the role of each of the following in driving the process of photosynthesis.
  - a) Photosystems
  - b) Accessory pigments
  - c) RUBP
- (iv) How do following obtain nutrition?
  - a) Filter feeders
  - b) Macrophagous feeders
- (v) Give an account of respiration in Hydra.
- (vi) How is the process of Transpiration important to plants?
- (vii) Discuss the link between Thrombus and Hypertension.
- (viii) Why is Spleen called a lymphoid organ?
- (ix) Give the common names of the following animals:
  - a) Enterobius vermicularis
  - b) Fasciola
  - c) Asterias
- (x) How do Villi improve the efficiency of Ileum?

## SECTION – D (Marks 26)

Note: Attempt any TWO questions. All questions carry equal marks. (2 x 13 = 26)

- Q. 4
  - a. Discuss the role of pancreas and liver in digestion. (4+4)
  - b. Enlist any five functions of blood. (5)
- Q. 5
  - a. Describe selective permeability of plasma membrane. What other functions does it perform? (5+2)
  - b. Draw and describe the life cycle of conjugating fungi. (2+4)
- Q. 6
  - a. Describe the steps of glycolysis in detail. Also draw its schematic diagram. (6+3)
  - b. What are enzyme inhibitors? Name and explain their types. (2+2)





# BIOLOGY HSSC-I

National Book Foundation

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Time allowed: 2:35 Hours

Total Marks Sections B, C and D: 68

NOTE: The Questions of sections B, C and D are to be answered on the separately provided answer book. Use supplementary answer sheet i.e. Sheet-B if required. Write your answers neatly and legibly.

## SECTION – B (Marks 21)

( Chapters 1 – 7 )

Q. 2 Answer any SEVEN parts from the following. All parts carry equal marks. ( 7 x 3 = 21)

- (i) What are Leucoplasts? How can they be classified?
- (ii) Define the following terms
  - a) Epimers
  - b) Stereoisomers
  - c) Fischer Projection
- (iii) Draw the structure of the following:
  - a) Steroid nucleus
  - b) Isoprene units
  - c) D-Mannose
- (iv) In living system large amount of heat energy cannot be used as energy of activation. Why?
- (v) Draw the structure of Chlorophyll.
- (vi) How does oxidation of Pyruvate occur during aerobic respiration?
- (vii) What is meant by Diakaryotic hyphae? How is it formed?
- (viii) How are viruses classified on the basis of genome?
- (ix) Give at least two differences among Conjugation, Transduction and Transformation.
- (x) Name three antibiotics and their sources that are obtained from fungi?

## SECTION – C (Marks 21)

( Chapters 8 – 13 )

Q. 3 Answer any SEVEN parts from the following. All parts carry equal marks. ( 7 x 3 = 21)

- (i) State any three land adaptations of Bryophytes.
- (ii) Write any three general characteristics of class Osteichthyes?
- (iii) Define water potential. How water potential can be broken down into its individual components? Mention equation only.
- (iv) How chemical digestion occurs in oral cavity.
- (v) Define Apical dominance. Give one example.
- (vi) What is the role of Lacteals present in the Villi?
- (vii) What is hepatic Portal system?
- (viii) Write the steps involved in the Inflammatory Response?
- (ix) How does Apical meristem differ from lateral Meristem? Write down any three differences.
- (x) Write any three differences between coelomate and Pseudocoelomate.

## SECTION – D (Marks 26)

Note: Attempt any TWO questions. All questions carry equal marks. ( 2 x 13 = 26)

- Q. 4 a. Define photoperiodism. Write the mechanism of photoperiodism. 2+8
- b. Write any three characteristics of Prototheria? 03
- Q. 5 a. How is amino acid sequence significant in proteins? 05
- b. Write the mechanism of photorespiration. 03
- c. What are the opportunistic diseases? 05
- Q. 6 a. Draw and explain the life cycle of mosses? 4+2
- b. What is the role of stomach in digestion? 07