

Roll No.

Answer Sheet No. _____

Sig. of Candidate. _____

Sig. of Invigilator. _____

BIOLOGY HSSC-I
SECTION – A (Marks 17)

National Book Foundation

Time allowed: 25 Minutes**NOTE: Section-A is compulsory. All parts of this section are to be answered on the question paper itself. It 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 Circle the correct option i.e. A / B / C / D. Each part carries one mark.**
- (i) Which of the following components of immune system are also called CD4 cells:
A. Memory B cells B. Suppressor T cells
C. Helper T cells D. Memory T cells
 - (ii) In a eukaryotic cell, the perinuclear space is continuous with the lumen of:
A. Vacuole B. Golgi complex
C. Endoplasmic reticulum D. Chromosomes
 - (iii) Which of the following is the molecular formula of galactose:
A. $C_5H_{10}O_5$ B. $C_{12}H_{24}O_{12}$ C. $C_{12}H_{22}O_{11}$ D. $C_6H_{12}O_6$
 - (iv) In a particular DNA molecule, the ratio between total purines and total pyrimidines is:
A. 1:1:1:1 B. 1:1 C. 1:2 D. 2:1
 - (v) The histidine decarboxylase enzyme, which catalyses the conversion of histidine to carbon dioxide and histamine, belongs to which of the following class of enzymes?
A. Lyases B. Oxidoreductases C. Transferases D. Hydrolases
 - (vi) During photosynthesis in chloroplast, O_2 is produced from _____ via a series of reactions associated with:
A. CO_2 ; both photosystems and the Calvin cycle
B. CO_2 ; photosystem-II
C. H_2O ; photosystem-II
D. CO_2 ; the Calvin cycle
 - (vii) All of the following are the inputs of Kreb's cycle except:
A. 2 FAD^+ B. 2 Acetyl groups
C. 2 ATP D. 6 NAD^+
 - (viii) Human Immunodeficiency Virus belongs to which of the following group of Baltimore Classification System?
A. Group-VII B. Group-IV C. Group-V D. Group-VI
 - (ix) All of the following features are related to the bacterial flagella except:
A. A filament composed of 9 doublets of microtubules
B. Flagellin protein
C. A basal body that produces rotatory motion
D. A hook between basal body and filament
 - (x) Which of the following organisms is a plant like protist?
A. *Trypanosoma* B. *Physarum*
C. *Phytophthora infestans* D. *Volvox*
 - (xi) The plants of sub division Psilopsida are commonly known as:
A. Seed producing plants B. Club Mosses
C. Whisk ferns D. Horsetails
 - (xii) Which of the following features represents the Deuterostomes?
A. Schizocoelom B. Radial and indeterminate cleavage
C. Blastopore develops into mouth D. Coelom forms by the splitting of mesoderm
 - (xiii) Which of the following is the osmoregulatory adaptation of hydrophytes?
A. succulent leaves B. large surface area of leaves
C. stomata are on lower epidermis D. thick cuticle
 - (xiv) Which of the following cells secrete gastrin hormone?
A. Gastric endocrine cells B. Goblet cells
C. Parietal cells D. Principal or chief cells
 - (xv) Which of the following is a phospholipid found in bile juice:
A. Lecithin B. Sodium glycocholate
C. Sodium taurocholate D. Bilirubin
 - (xvi) The heart valves are formed by a fold of the _____, making double layer with connective tissue in between.
A. Pericardium B. Epicardium C. Myocardium D. Endocardium
 - (xvii) The "T" peak of a typical ECG represents which of the following event:
A. Ventricular repolarization B. Atrial depolarization
C. Atrial repolarization D. Ventricular depolarization

For Examiner's use only:

Total Marks:

17

Marks Obtained:



BIOLOGY HSSC-I

National Book Foundation

Time allowed: 2:35 Hours

Total Marks Sections B and C: 68

NOTE: Answer any fourteen parts from Section 'B' and any two questions from Section 'C' 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 42)

- Q. 2** Answer any FOURTEEN parts. The answer to each part should not exceed 3 to 4 lines. (14 x 3 = 42)
- (i) a) What is chemical composition of microfilament? (01)
 - b) Explain briefly the structure and function of chromosome. (02)
 - (ii) Give one example of each trioses, pentoses and hexoses. Also write at least one function of each example. (03)
 - (iii) Differentiate between starch and glycogen. (03)
 - (iv) Explain the effect of substrate concentration on the rate of enzymatic reaction. (03)
 - (v) Write down the molecular formulae of chlorophyll-a and chlorophyll-b also suggest the wavelengths of light which are absorbed by them. (03)
 - (vi) a) Draw the reaction in which O_2 is combined with ribulose biphosphate during photorespiration. (01)
 - b) What is substrate level phosphorylation also give an example from cellular respiration. (02)
 - (vii) Give cause, symptoms and treatment of Hepatitis-C. (03)
 - (viii) Give any three differences between Gram+ve and Gram-ve cell wall. (03)
 - (ix) Enlist any three human diseases caused by fungi also name their causative agents. (03)
 - (x) Give any three differences between monocots and dicots. (03)
 - (xi) What are economic benefits which are obtained from insects? Give any three examples. (03)
 - (xii) a) What are day neutral plants? Give an example. (0.5+0.5)
 - b) What are commercial applications of ethene? (02)
 - (xiii) Give any three adaptations in plants to cope with the high temperature. (03)
 - (xiv) Enlist any three proteases and explain their role in human digestive system. (03)
 - (xv) a) Name the sphincters that control the entry and exit of food in small intestine. (01)
 - b) Define the terms: 1) Glycogenolysis 2) Gluconeogenesis. (01+0)
 - (xvi) Highlight any three differences between arteries and veins. (0)
 - (xvii) What is conducting system of heart? Name the components of this system? (01+0)
 - (xviii) How does temperature response of the body become harmful for pathogens? Suggest any three ways. (0)
 - (xix) Name any three antibiotics and their sources which are obtained from fungi. (0)

SECTION - C (Marks 26)

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

- Q. 3**
- a. Explain the structure of cilia and flagella. (0)
 - b. Describe and draw the pathway of Kreb's cycle. (0)
- Q. 4**
- a. Describe lifecycle of a flowering plant. (1)
 - b. Compare the animals of three sub classes of Mammals. (0)
- Q. 5**
- a. Describe the role of Pancreas in human digestive system. (0)
 - b. Describe the structure of human heart. (0)

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Answer Sheet No. _____

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BIOLOGY HSSC-I

SECTION – A (Marks 17)

Punjab Text Book Board
Old / Revised Syllabus

Time allowed: 25 Minutes

NOTE: Section–A is compulsory. All parts of this section are to be answered on the question paper itself. It 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 Circle the correct option i.e. A / B / C / D. Each part carries one mark.

- (i) Lymph more closely resemble with:
A. Interstitial Fluid B. Blood C. Urine D. Plasma
- (ii) A large regional community determined by climate is a:
A. Ecosystem B. Population C. Biome D. Community
- (iii) The protein which causes movement of chromosomes during anaphase is:
A. Microtubules B. Tubulin C. Myosin D. Actin
- (iv) The optimum pH of Enterokinase is:
A. 7.50 B. 1.50 C. 3.50 D. 5.50
- (v) Phospholipids are derivatives of:
A. Phosphatidic Acid B. Glycerol
C. Fatty Acid D. Phosphoric Acids
- (vi) In many animal cells, the cell membrane helps to take in materials by infolding, in the form of vacuoles, this type of intake is termed as:
A. Endocytosis B. Phagocytosis C. Pinocytosis D. Osmosis
- (vii) Louise Pasteur was one of the pioneer microbiologists. His main achievements are the developments of vaccines for diseases:
A. Smallpox–Fowl cholera–Rabies B. Anthrax–Cholera–Malaria
C. Smallpox–Chickenpox–Anthrax D. Anthrax–Fowl cholera–Rabies
- (viii) Influenza virus is a:
A. Enveloped RNA virus B. DNA virus
C. RNA virus D. Enveloped DNA virus
- (ix) The major locomotory structures in Bacteria are:
A. Cilia B. Flagella C. Fimbriae D. Pili
- (x) The cell wall in Oomycetes is chemically composed of:
A. Lignin B. Chitin C. Cellulose D. Protein
- (xi) There is a rasping tongue like structure in Molluscs called:
A. Morula B. Radula C. Blastula D. Gastrula
- (xii) The plant body of Horsetails is composed of large number of joints. The plants of this group are also called:
A. Bryophytes B. Spermatophytes C. Arthropytes D. Arthropods
- (xiii) Which of the following animals is ancestor of mammals:
A. Allosaurs B. Dinosaurs C. Archaeopteryx D. Cotylosaurs
- (xiv) Which metal atom is present in chlorophyll molecules:
A. Potassium B. Copper C. Iron D. Magnesium
- (xv) Which of the following cell secretes hydrochloric acid:
A. Oxyntic cells B. Mucus cells C. Zymogen cells D. Epithelial cells
- (xvi) Respiratory system is most efficient in:
A. Snake B. Man C. Bird D. Fish
- (xvii) Casparian strips are present in:
A. Cells of Phloem B. Cortex cell of Root
C. Endodermis cells of Root D. Cells of Pericycle

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17

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Punjab Text Book Board
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SECTION – B (Marks 42)

Q. 2 Answer any FOURTEEN parts. The answer to each part should not exceed 3 to 4 lines. (14 x 3 = 42)

- (i) Define the following terms:
 - a) Molecular Biology
 - b) Biotechnology
 - c) Microbiology
- (ii) a) Write down general formula of an Amino Acid.
b) What is the name of bond formed between two Amino Acids?
- (iii) a) What are conjugated molecules?
b) Write down two examples of conjugated molecules.
- (iv) Differentiate between lock and key and Induce Fit Model of Enzyme.
- (v) What is cytoskeleton? Write down functions of cytoskeleton.
- (vi) Write down scientific names of the following organisms:
 - a) Rose Plant
 - b) Potato
 - c) Man
- (vii) Draw a diagram to show Replication of a Bacteriophage.
- (viii) Define the following terms;
 - a) Plasmids
 - b) Nucleoid
 - c) Mesosomes
- (ix) Describe two characteristics of each of the followings:
 - a) Actinopods
 - b) Foraminiferans
- (x) Differentiate between the following spores of Fungi:
 - a) Zygosporangia
 - b) Ascospores
 - c) Basidiospores
- (xi) Explain the structure of Sporangium in Maiden-hair Fern.
- (xii) What is double Fertilization?
- (xiii) Differentiate between Spiral and Radial Cleavage.
- (xiv) Define the following:
 - a) Absorption Spectrum
 - b) Action Spectrum
- (xv) What is the difference between Filter Feeders and Fluid Feeders?
- (xvi) What is the role of Human Liver in digestion?
- (xvii) Describe the properties of respiratory surfaces.
- (xviii) Differentiate between Bleeding and Imbibition.
- (xix) What is artificial pace maker? And what is its role?

SECTION – C (Marks 26)

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

- Q. 3**
- a. Describe the Mechanism of Inspiration and Expiration in Man. Also draw a diagram to show this process. 04+04
 - b. Explain the role of respiratory pigments. 05
- Q. 4**
- a. Discuss the salient features of Phylum Porifera. 07
 - b. Differentiate between Protostomes and Deutrostomes. 03+03
- Q. 5**
- a. Explain life cycle of an Angiospermic plant and draw a diagram to show different structures. 06+03
 - b. What is the significance of Alternation of Generation. 04