Roll No. | | | | | | | Answer Sheet No._____

Sig. of Candidate._____ Sig. of Invigilator._____

BIOLOGY HSSC–I

SECTION – A (Marks 17)

Time allowed: 25 Minutes

Punjab Text Book Board
Old / Revised Syllabus

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) The rate of transpiration decreases when:
A. Intensity of light is strong B. Relative humidity of air is high
C. Wind velocity is high D. Temperature is increased

(ii) In case of a snake bite when you treat a person by Antivenom serum which type of immunity is provided by this action?
A. Humoral immune response B. Passive immunity
C. Active immunity D. Naturally induced immunity

(iii) Select the one which is **NOT** an example of polysaccharide.
A. Pectin B. Glucose C. Glycogen D. Cellulose

(iv) Which period is **NOT** included in the Palaeozoic era?
A. Permian B. Silurian C. Carboniferous D. Cretaceous

(v) If there is a protein molecule of about 2,000 amino acids how many nucleotides are present in the mRNA specific for this protein?
A. 3,000 B. 4,000 C. 2,000 D. 6,000

(vi) Which of the following statements is incorrect about enzymes?
A. Enzymes are sensitive to change in temperature
B. Enzymes are fibrous proteins
C. All enzymes are not solely made up of proteins
D. Enzymes are specific in nature

(vii) Indicate the one which is called serum Hepatitis:
A. Hepatitis C B. Hepatitis D C. Hepatitis A D. Hepatitis B

(viii) Choose the one which is **NOT** a function of smooth endoplasmic Reticulum:
A. Detoxification of drugs B. Transmission of impulse
C. Metabolism of lipids D. Production of glycolipids

(ix) All are the characteristics of plasmid except:
A. It is double stranded DNA molecule B. It is essential for metabolism
C. It is self-replicating D. It contains drug resistant genes

(x) Indicate the one which is a zooflagellate?
A. *Plasmodium* B. *Stentor* C. *Vorticella* D. *Trypanosoma*

(xi) Phycoerythrin and chlorophyll a is present in phylum:
A. Rhodophyta B. Phaeophyta C. Chrysophyta D. Pyrrophyta

(xii) Which plant is used against snake bite?
A. *Atropa belladona* B. *Arachis hypogea*
C. *Clitoria ternatea* D. *Glycyrrihiza glabra*

(xiii) Which one is **NOT** a bryophyte?
A. Funaria B. Selaginella C. Marchantia D. Polytrichum

(xiv) Which of the following is **NOT** a characteristic of class cyclostomata?
A. Suctorial mouth B. 6 – 14 pairs of gills
C. Body is long eel-like D. Skeleton is bony

(xv) In the respiratory electron transport chain the last cytochrome to accept electron is:
A. Cytochrome a_3 B. Cytochrome c C. Cytochrome b D. Cytochrome a

(xvi) In the digestive system of a cockroach partly digested food is stored in:
A. Gizzard B. Hepatic caecum C. Mesenteron D. Crop

(xvii) Which pair is incorrectly matched?
A. Tuberculosis – Contagious disease B. Emphysema – Alveoli with increase surface area
C. Asthma – Allergic reaction D. Smoking – Lung cancer

For Examiner's use only:

Total Marks: 17

Marks Obtained:

BIOLOGY HSSC–I

Punjab Text Book Board
Old / Revised Syllabus

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. Biome b. Prion c. Polysome

(ii) a. Draw structure of a triacyl glycerol.
b. How is tertiary structure of protein formed?

(iii) How are congenital diseases related to lysosomal enzymes? Briefly explain.

(iv) State the functions of following with respect to a bacterial cell:
a. Slime b. Mesosomes c. Pili

(v) What is meant by Mycorrhizae? Explain its types briefly.

(vi) a. How are the ciliates different from other protozoans?
b. Describe the structure of feeding stage of a slime mold.

(vii) Describe techniques which are applied to control microorganisms physically.

(viii) Complete the table for the three types of Hepatitis given below:

Characteristic	HAV	HAB	HAC
Mode of transmission			
Genome of virus			

(ix) What are reversible inhibitors? Describe their types briefly.

(x) a. What do you mean by parasexuallity?
b. What are the characteristics of Dinoflagellates?

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) Write down characteristics of Class Hirudinea.

(ii) Summarize economic importance of phylum Mollusca.

(iii) Write down the biological names of:
a. Amaltas b. Red pepper c. Pin worm

(iv) Differentiate between Chlorophyll a and Chlorophyll b.

(v) How does a hydra capture its prey? How is food digested in its body?

(vi) Describe any two factors which affect capacity of haemoglobin to combine with oxygen?

(vii) Relate starch sugar hypothesis to the opening closing of stomata.

(viii) Enlist any three functions of the lymphatic system.

(ix) Differentiate between Alcoholic and lactic acid fermentation.

(x) Describe how a sporophyte of a horn wort is much advanced than other bryophytes?

SECTION – D (Marks 26)

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

Q. 4 a. How is carbondioxide transported in the body? **05**

b. Explain life cycle of Adiantum. **08**

Q. 5 a. Draw infection Cycle of HIV. **07**

b. Describe Cyclic Phosphorylation with the help of a diagram. **06**

Q. 6 a. Explain role of stomach in the digestion of food. **08**

b. Give an account of animal diseases caused by fungi. **05**

Roll No. | | | | | | |

Answer Sheet No._____

Sig. of Candidate._____

Sig. of Invigilator._____

BIOLOGY HSSC–I

SECTION – A (Marks 17)

Time allowed: 25 Minutes

Punjab Text Book Board
Old / Revised Syllabus

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) Monocytes stay in blood for about _____ hours.
A. 10 – 30 B. 10 – 12 C. 10 – 20 D. 10 – 15

(ii) Mg makes about _____ % of the total mass of a human being.
A. 0.15 B. 0.05 C. 0.17 D. 0.10

(iii) Hair of a human being are made up of protein:
A. Keratin B. Actin C. Fibrin D. Tubulin

(iv) Which one is **NOT** an inhibitor?
A. Antimetabolites B. Cyanide C. Antibiotics D. Antigens

(v) Indicate which statement is **NOT** related to HIV?
A. Single stranded DNA in genome B. Helper T. Lymphocyte
C. Reverse transcriptase D. Single stranded RNA in genome

(vi) Select the mismatched pair.
A. Centriole – Formation of cilia B. Lysosomes – Extracellular digestion
C. Secondary cell wall – Cutin D. Microtubules – Internal cell motion

(vii) The arrangement of cocci in grape like cluster is known as:
A. Staphylococcus B. Tetrad C. Streptococcus D. Sarcina

(viii) Radiolarians belong to the group of protozoa called:
A. Foraminiferans B. Zooflagellates C. Apicomplexans D. Actinopods

(ix) All are the characteristics of class crustacea except:
A. Absence of Antennae B. Presence of cephalothorax
C. Presence of gills for respiration D. Presence of Carapace for exoskeleton

(x) Fungi can tolerate a range of pH form:
A. 3 – 6 B. 2 – 6 C. 2 – 9 D. 3 – 9

(xi) Select the mismatched pair.
A. Penicillium – antibiotic B. Aspergillus – Soyasauce
C. Neurospora – Genetic research D. Lovastatin – Inhibit fungal growth

(xii) Which characteristic is **NOT** related to phylum Mollusca?
A. Rasping tongue radula B. Triploblastic coelomates
C. Bilaterally symmetrical D. Excretory organ flame cells

(xiii) Each mesophyll cell has about _____ chloroplasts.
A. 30 – 100 B. 20 – 50 C. 30 – 50 D. 20 – 100

(xiv) Which enzyme converts proteins into amino acids?
A. Trypsin B. Pepsin
C. Aminopeptidase D. Erypsin

(xv) Botanical name of oats is:
A. *Hordeum vulgare* B. *Zea mays* C. *Avena sativa* D. *Oryza sativa*

(xvi) Which one is incorrect for inspiration?
A. Increase in space of the chest cavity B. Ribcage move upwards
C. Muscles of diaphragm relax D. Diaphragm becomes less dome shaped

(xvii) Choose the one which is **NOT** maintaining flow of lymph.
A. Breathing movement B. Activity of skeletal muscles
C. Movement of viscera D. Contraction of heart

For Examiner's use only:

Total Marks: 17

Marks Obtained:

BIOLOGY HSSC–I

Punjab Text Book Board
Old / Revised Syllabus

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 following terms:
a. Cytosol b. Coenzyme c. Anticeptics

(ii) "Water is an excellent solvent" Justify this statement by your answer.

(iii) a. Briefly describe composition and function of stroma.
b. In which types of seeds glyoxysomes are present. What is their function?

(iv) How cyanobacteria resemble eukaryotes in relation to photosynthesis?

(v) What is penicillium? Give an account of asexual reproduction in it.

(vi) a. What is the chemical composition of cell wall in Diatoms? What is a special feature about their cell wall?
b. Briefly describe a symbiotic zooflagellate.

(vii) Complete the table with reference to bacteria:

Characteristic	Gram-Positive	Gram-Negative
Chemical makeup of cell wall		

(viii) What are the two basic ways to formulate a hypothesis? Briefly describe.

(ix) a. What would happen if enzyme concentration is kept constant and amount of substrate is increased?
b. Into how many regions active site of an enzyme is divided and what are their functions?

(x) Describe characteristics of a virus.

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) Write down biological names of:
a. Tape worm b. Corn d. Hook worm

(ii) Describe any three differences between proterostomes and Deuterostomes.

(iii) Define polymorphism. In which phylum it exists? Give example of organism showing this phenomena.

(iv) Write a briefly account of chemiosmosis.

(v) a. Define compensation point.
b. How would you distinguish between Absorption spectrum and Action spectrum?

(vi) What is the composition and function of saliva?

(vii) What are the factors which help in exchanging gases across alveoli?

(viii) How would you compare a thrombus and an embolus? Give reasons for thrombus formation.

(ix) Explain briefly the structure of gametophyte of Adiantum.

(x) Classify various proteins in plasma of blood and also write down their functions.

SECTION – D (Marks 26)

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

Q. 4 a. What is a Megaphyllous leaf? Describe the evolution of a Megaphyllous leaf. **07**

b. What are the general characteristics of polysaccharides? Explain any two examples. **06**

Q. 5 a. Explain life Cycte of a Bacteriophage. **08**

b. Draw Z-Scheme of light reaction. **05**

Q. 6 a. Explain process of Digestion in cockroach. **08**

b. What is lymph? Describe various functions performed by lymphatic system. **05**

Roll No. | | | | | | | Answer Sheet No._____

Sig. of Candidate._____ Sig. of Invigilator._____

BIOLOGY HSSC–I

SECTION – A (Marks 17)

Time allowed: 25 Minutes National Book Foundation **Version Number** 1 7 0 1

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) The suppressor T cells release Cytokines that inhibit the activity of:
A. T and B Cells B. Helper T Cell C. Macrophages D. Natural Killer Cells

(ii) Trypsinogen is secreted by pancreas. Trypsinogen is converted into its active form, trypsin in the Duodenum in the presence of:
A. Gastrin B. Secretin C. Enterokinase D. *HCl*

(iii) The _____ are exclusively marine animals.
A. Coelentrates B. Echinodermates
C. Platyhelminthes D. Mulluscans

(iv) The low level of _____ in the leaf favours the opening of stomata.
A. Carbondioxide B. Glucose C. Water D. Oxygen

(v) One of the important features of Pteropsida is:
A. Heterospory B. Club Shaped Strobili
C. Presence of Rhizoids D. Circinate Vernation

(vi) _____ is the procedure that separates molecules on the basis of their size, shape, molecular weight and surface charge.
A. Centrifugation B. Electrophoresis
C. Chromatography D. Spectrophotometry

(vii) Which of the following is **NOT** true about Cellulose?
A. It is an polymer of glucose B. It is an abundant carbohydrate
C. It is an important food source for animals D. It is highly branched Polysaccharide

(viii) In the life cycle of HIV, penetration of virus into host cell is followed by:
A. Reverse transcription B. Replication
C. Biosynthesis D. Breakdown

(ix) All **EXCEPT** _____ is not associated with Protostomes.
A. Spiral cleavage B. Schizocoelome
C. Blastopore develop into anus D. Annelids

(x) _____ cells of stomach secrete hydrochloric acid.
A. Goblet Cells B. Chief cells
C. Zymogen Cells D. Parietal cells

(xi) The largest multicellular algae, Kelps belongs to:
A. Brown algae B. Red algae
C. Dinoflagellates D. Green algae

(xii) _____ is the example of facultative bacteria.
A. Pseudomonas B. E.Coli
C. Comphylobactor D. Spirochaeta

(xiii) Within the liver, blood is passed through a series of dilated capillaries called:
A. Sinusoids B. Sinus venosus
C. Sinus Channels D. Vena Cava

(xiv) _____ organelle is more active in the germinating seeds, the enzymes of which convert stored fats into carbohydrates.
A. Leucoplast B. Lysosomes C. Golgi bodies D. Glyoxisomes

(xv) _____ is **NOT** the property of enzymes.
A. Proteinecious molecules
B. Non-Specificity to substrate
C. Sensitive to pH and Temperature variation
D. Decrease activation energy

(xvi) The precursor molecule to initiate Krebs Cycle is:
A. Pyrovate B. Acetyle Co-A C. Malate D. Citrate

(xvii) _____ is a fibrous protein.
A. Collagen B. Haemoglobin C. Enzyme D. Insulin

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) The oxidative activity of RUBISCO enzyme is affected by temperature. Briefly describe.

(ii) Give similarities and differences between Chloroplast and Mitochondria.

(iii) Write down three functions of Proteins.

(iv) How can the transmission of HIV be prevented?

(v) Draw the structures of Aldo and Keto Triose Sugar.

(vi) Write one function of each (a) Rough Endoplasmic reticulum (b) Golgi Bodies (c) Lysosomes

(vii) What is endospore? When and why is it formed in a bacterium?

(viii) Give common features of Bryophytes.

(ix) How do Xerophytes maintain their osmoregulation?

(x) State the digestion of food in oral cavity?

(xi) What are the advantages of Fever?

(xii) Draw the label Diagram of Antibody.

(xiii) What are the risks associated with atherosclerosis?

(xiv) Differentiate between primary and secondary growth in Plants.

(xv) What do you know about Pulmonary circuit?

(xvi) Name the two types of Zoids in Cnidarian with their functions.

(xvii) How does the substrate concentration affect the rate of enzyme action?

(xviii) Enlist three functions of large intestine.

(xix) What is bacterial conjugation? Give its importance for a Bacterium.

SECTION – C (Marks 26)

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

Q. 3 a. Give the detail mechanism and Schematic representation of Calvin cycle. **07**

b. Describe different classes of Enzymes. **06**

Q. 4 a. How do the digestion and absorption of food occur in small intestine? **07**

b. Describe the evolution of seed in plants. **06**

Q. 5 a. Write the characteristics of Ascomycota. **06**

b. Give a detail note on Human Lymphatic System. **07**