



BIOLOGY HSSC-I

SECTION – A (Marks 17)

Time allowed: 25 Minutes

Section – A is compulsory. All parts of this section are to be answered on this page and handed over to the Centre Superintendent. Deleting/overwriting is not allowed.

Do not use lead pencil.

حصہ اول لازمی ہے۔ اس کے جوابات اسی صفحہ پر دے کر نام مرکز کے حوالے کر دیے جائیں گے۔
کلمے کی اہمیت نہیں ہے۔ لیسے فیل، اسٹمال منوع ہے۔

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Version No.				
3	0	0	6	2

ROLL NUMBER					

0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
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9	9	9	9	9

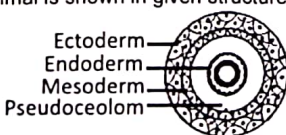
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3	3	3	3	3	3
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5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
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9	9	9	9	9	9

Answer Sheet No. _____

ہر سوال کے سامنے دیے گئے، کریکولم کے مطابق درست دائرہ کو پر کریں۔ Invigilator Sign. _____

Fill the relevant bubble against each question according to curriculum:

Candidate Sign. _____

Question	A	B	C	D	A	B	C	D
1. Select the wrong pair with respect to inflorescence:	Dianthus – Cymose Inflorescence	Amaltas – Compound Cymose	Brassica – Racemose	Rice – Compound Spike	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. The technique by which the components of a mixture are separated on the basis of surface charges is:	Micro dissection	Electrophoresis	Cell fractionation	Chromatography	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. In which seed is glyoxysome found?	Sunflower	Wheat	Gram	Pea	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Which is "FALSE" about fibrous protein?	Helical structure	Insoluble in aqueous medium	Elastic in nature	Can be crystallized	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. The rate of enzyme catalyzed reaction for every 10°C rise in temperature:	Is tripled	Is doubled	Is halved	Remains unchanged	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Which metabolite is common to respiration mediated break down of fats, carbohydrates and proteins?	Lactate	Fructose 1–6 diphosphate	Glucose 1–6 phosphate	Acetyl co-A	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Select the virus having polyhedral capsid:	Adenovirus	Influenza	Bacteriophage	Tobacco mosaic virus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. The causative agent for producing ear rot in wheat is:	Rhizobium	Coryne bacterium	Azotobacter	Zanthomanas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Which one is a parasitic zooflagellate?	Plasmodium	Entamoeba	Paramecium	Trypanosoma	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. A seedless vascular plant with branching rhizome, aerial stem less than 30 cm and mesophyll leaves with a strand of vascular tissue is:	Sphenopsida	Psilopsida	Lycopsida	Pteropsida	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Deuterostome condition and indeterminate radial cleavage are characteristics of:	Chordate and Echinodermata	Chordate and Arthropods	Arthropoda and Annelida	Annelida and Mollusca	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Which animal is shown in given structure? 	Jelly fish	Liver fluke	Ascaris	Neries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Side branches and lateral buds are produced through the action of:	Intercalary meristem	Apical meristem	Cork cambium	Vascular cambium	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. All are related to liver EXCEPT:	Formation of prothrombin	Synthesis of fatty acid	Deamination of amino acid	Hydrolysis of glucose	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Artificial pace maker is grafted to the patient at the site of:	A.V node	A.V bundle	Purkinji fiber	S.A node	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Natural killer cells are class of large granular lymphocyte that recognize and kill especially:	Bacteria	Viruses	Cancerous cells	Fungi	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Identify the approximate effect on plant exhibited by "Auxin" hormone:	Stomatal opening	Seed dormancy	Parthenocarp	Fruit ripening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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BIOLOGY HSSC-I

Time allowed: 2:35 Hours


Total Marks Sections B and C: 68

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SECTION – B (Marks 42)

Q. 2 Answers the following parts briefly.

(14 x 3 = 42)

(i)	Which structure within the cell is involved in getting rid of old organelles? Discuss the process briefly.	03	OR	How a bacteriophage develops a host guest relationship with its host? How can this relationship be terminated? State the condition which leads to this termination.	03												
(ii)	Name the inhibitors of succinate dehydrogenase and cytochrome oxidase. Also mention the type of inhibition.	03	OR	Illustrate the formation of Triacyl Glycride.	03												
(iii)	Mention the unifying features of archaea with respect to: (a) Composition of cell wall (b) Composition of cell membrane	03	OR	How fungal hyphae make a relationship with plant roots? Name such relationship with explanation of its structure.	03												
(iv)	Given is a biochemical pathway involved in synthesis of an amino acid 'x' in a cell: $A \xrightarrow{E_1} B \xrightarrow{E_2} C \xrightarrow{E_3} D \xrightarrow{E_4} E \xrightarrow{E_5} x$ Product x is amino acid. Name and explain the mechanism which regulates the amount of amino acid 'x' synthesized in the cell.	03	OR	Justify the statement related to gram negative and gram positive bacteria: (a) Gram negative bacteria are more resistant to antibiotics (b) Gram positive bacteria retain primary stain	03												
(v)	Briefly describe the generic recombination of a bacterium with the helps of 3 rd party.	03	OR	State the significance of development of pollen tube in the evolution of seed habit.	03												
(vi)	How some plants of tropical climate adopt to deal with the problem of photo-respiration? Explain briefly.	03	OR	Briefly discuss the structure of gametophyte of fern.	03												
(vii)	What happens to molecules of G3P in Calvin cycle? Briefly discuss.	03	OR	Complete the table with respect to different viruses: <table><tr><th></th><th>Virus name</th><th>Structure</th><th>Function</th></tr><tr><td>a</td><td></td><td>Gp – 120</td><td></td></tr><tr><td>b</td><td></td><td>Lysozyme</td><td></td></tr></table>		Virus name	Structure	Function	a		Gp – 120		b		Lysozyme		03
	Virus name	Structure	Function														
a		Gp – 120															
b		Lysozyme															
(viii)	Identify the group names and write one function of each: <table><tr><td>I</td><td>Sea weeds</td></tr><tr><td>II</td><td>Kelps</td></tr></table>	I	Sea weeds	II	Kelps	03	OR	Clover leaf structure of tRNA is given: (a) Recognize A, B and C. (b) Write the significance of 'B'. 	03								
I	Sea weeds																
II	Kelps																
(ix)	Complete the table with respect to characteristics of given phyla: <table><tr><th></th><th>Characteristics</th><th>Annelida</th><th>Arthropoda</th></tr><tr><td>a</td><td>Respiration</td><td></td><td></td></tr><tr><td>b</td><td>Circulatory system</td><td></td><td></td></tr></table>		Characteristics	Annelida	Arthropoda	a	Respiration			b	Circulatory system			03	OR	Pancreatic juice contains two important enzyme precursors. Enlist their names. How are they activated?	03
	Characteristics	Annelida	Arthropoda														
a	Respiration																
b	Circulatory system																
(x)	Enlist the adaptations in plants to cope with high temperature.	03	OR	Trace the path of blood through hepatic portal system.	03												
(xi)	(a) Why phloem tube is also called sieve tube? (b) Why phloem has Companion cells but xylem has no companion cell? Justify.	03	OR	Give one difference between: (a) Artery and vein. (b) Natural active immunity and artificial active immunity.	03												
(xii)	How can fever be useful during illness?	03	OR	Give any three general characteristics of reptiles.	03												
(xiii)	How are the macrophage involved in activation of T-cells? How T-cells play important role in cell mediated immunity?	03	OR	How is water involved in protecting the living organisms against sudden thermal changes? Describe briefly.	03												
(xiv)	Describe the movement of water through roots in terms of symplast path way.	03	OR	Complete the table with respect to different diseases: <table><tr><th></th><th>Disease</th><th>Cause</th><th>treatment</th></tr><tr><td>a</td><td></td><td>HBV</td><td></td></tr><tr><td>b</td><td>Pulmonary tuberculosis</td><td></td><td></td></tr></table>		Disease	Cause	treatment	a		HBV		b	Pulmonary tuberculosis			03
	Disease	Cause	treatment														
a		HBV															
b	Pulmonary tuberculosis																

SECTION – C (Marks 26)

Attempt the following questions.

Q.3	Write down the general characteristics of cartilaginous fish.	06	OR	Explain in detail the evolution of leaf. Draw diagram as well.	06
Q.4	Describe the types, structure, composition and function of cytoskeleton. (Diagrams not required).	07	OR	How does the complete oxidation of acetyl Co-A will take place in mitochondria? Explain. Draw diagram as well.	07
Q.5	Describe the process of food digestion in Duodenum, Jejunum and Ileum.	06	OR	Describe the structure of lymphatic vessels. Also discuss their roles in human body.	06
Q.6	Describe in detail the forces involved with the upward movement of water and minerals from roots to leaves.	07	OR	Discuss the structure of cellulose and chitin. Draw diagram as well.	07