17

Version No.			
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ROLL NUMBER					

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 اوّل لازمی ہے۔ اس کے جوابات اسی صفحہ پر دے کر نگرانِ مرکز کے حوالے کریں۔ کاٹ کر دوبارہ لکھنے کی اجازت نہیں ہے۔ لیڈ پنسل کا استعمال ممنوع ہے۔

Answer Sheet No. _____

ہر سوال کے سامنے دیے گئے، کریکولم کے مطابق درست دائرہ کو پُر 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.	The bicuspid and tricuspid valves of the heart close during:	Ventricular Diastole	Ventricular Systole	Atrial Systole	Atrial Diastole	○	○	○	○
2.	The component of second line of defense in the following is:	Natural killer cell	Cytotoxic lymphocyte cell	Helper T lymphocyte cell	B lymphocyte cell	○	○	○	○
3.	Which of the following acts as cell identity markers or name tags just like the sign board of shops?	Nucleoproteins	Nucleic Acid	Lipoproteins	Glycolipids	○	○	○	○
4.	$CH_3-O-\overset{O}{\overset{\|\|}{C}}-CH_3$, this molecule is an example of:	Aldehyde	Ketone	Ester	Ether	○	○	○	○
5.	Human liver cells are specialized for the detoxification process, because they have abundant number of:	Peroxisome	Lysosome	Ribosome	Glyoxisome	○	○	○	○
6.	Which of the following ratio is **incorrect** explanation of Chargaff's rule?	T:A=1	C:T=1	A:T=1	G:C=1	○	○	○	○
7.	They catalyze the breakdown of specific covalent bonds and removal of groups without hydrolysis.	Lyases	Ligases	Transferases	Hydrolases	○	○	○	○
8.	The **correct pathway** of electron flow during non-cyclic photophosphorylation is:	Cytochrome Complex → PQ → PC → PS-I	PS-I → Fd → Cytochrome Complex → PC	PQ → Cytochrome Complex → PC → PS-I	PC → PS-I → Fd → Cytochrome Complex	○	○	○	○
9.	Which Hepatitis spreads due to poor sanitation and hygiene?	Hepatitis C	Hepatitis D	Hepatitis A	Hepatitis B	○	○	○	○

III

	Question	A	B	C	D	A	B	C	D
10.	The non-nucleated thick walled cell found in the trichome of Nostoc, associated with nitrogen fixation is called:	Haustoria	Sarcinae	Nematocyst	Heterocyst	○	○	○	○
11.	Algae differs from plants in which respect?	Algae have multicellular sex organ and zygote is well protected	Algae have unicellular sex organ and their zygote is not protected	Algae have multicellular sex organ but no embryo is formed	Algae have unicellular sex organ but zygote is well protected	○	○	○	○
12.	The property of dicot plants in the following is:	Fibrous root system	Trimerous calyx and corolla in flower	Wood forming ability	Leaves with parallel veination	○	○	○	○
13.	The locomotory organ parapodia and setae are present on the body of:	Annellids	Echinoderms	Nematods	Mullusks	○	○	○	○
14.	Which one of the following **DOES NOT** pertain to deuterostomes?	Enterocoelom	Echinoderms	Radial Cleavage	Blastopore-Mouth	○	○	○	○
15.	What happen to a cell when it is placed in a hypotonic solution?	Cell shrinks due to exosmosis	Cell gets flaccid	Cell gets turgid	Cell gets plasmolysed	○	○	○	○
16.	All of the following are secondary meristems **EXCEPT**:	Vascular Cambium	Apical Meristem	Intercalary Meristem	Cork Cambium	○	○	○	○
17.	These cells are associated with lowering of pH in the stomach.	Zymogen Cells	Chief Cells	Goblet Cells	Parietal Cells	○	○	○	○

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BIOLOGY HSSC–I

Time allowed: 2:35 Hours **Total Marks Sections B and C: 68**

NOTE: Answer any fourteen parts forms Section 'B' and attempt any two questions from Section 'C' on the separately provided answer book. Write your answers neatly and legibly.

SECTION – B (Marks 42)

Q. 2 Attempt any FOURTEEN parts from the following. All parts carry equal marks. (14 x 3 = 42)

(i) Why are lysosomes called autophagosomes?

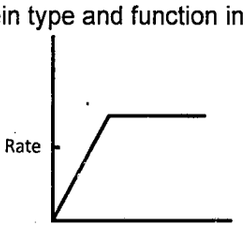
(ii) Differentiate microtubules and intermediate filaments in term of diameter, protein type and function in the cell.

(iii) Stereoisomers are isomers that differ in their H and OH group orientation.

a. What are enantiomers?

b. Draw the structure of D and L-glucoses

(iv) Explain the given graph.



Q.No.2 (iv)

(v) Give any three carbohydrate digesting enzymes with their substrate and product.

(vi) Write down any three differences between cyclic and non-cyclic photophosphorylation.

(vii) Classify viruses on the basis of their genome.

(viii) How slime layer and capsule increase the disease causing ability of bacteria?

(ix) Normal bacterial flora in human body is a blessing. Explain briefly.

(x) Why plants and green algae are considered monophyletic?

(xi) Summarize the evolution of many veined leaf in plants.

(xii) Give any three differences between cartilaginous and bony fishes.

(xiii) State the adaptation in plants to cope with high temperature stress.

(xiv) (a) What is ascent of sap?

(b) Enlist the forces that are responsible for ascent of sap in plants.

(xv) Basidiomycota is a class in Fungi:

(a) Why is Basidiomycota called club fungi?

(b) Write any two differences between Basidiomycota and Ascomycota.

(xvi) Demonstrate the swallowing reflex in human.

(xvii) What major functions are performed by large intestine?

(xviii) Draw the pulmonary circuit circulation.

(xix) Outline the events of inflammatory responses in case a pin has broken the skin.

(xx) State the natural and artificial active immunity.

SECTION – C (Marks 26)

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

Q. 3 a. Describe the structural components and roles of lymphatic system in human.

b. How is six carbon sugar converted into two molecules of 3-C compounds? Explain. Also draw diagram.

Q. 4 a. How is organic food translocated in vascular plants? Explain. Also draw diagram.

b. Write down the general characteristics and different sub-classes of Mammalia.

Q. 5 a. Explain the life cycle of flowering plant showing its Diploid and Haploid stages. Also draw diagram.

b. Justify the significance of amino acid sequence in proteins, taking the example of sickle cell anaemia.