



# Federal Board HSSC-I Examination

## Biology Model Question Paper

(Curriculum 2022-2023)

### 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.**

ROLL NUMBER					

Version No.			

0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9

Candidate Sign. \_\_\_\_\_

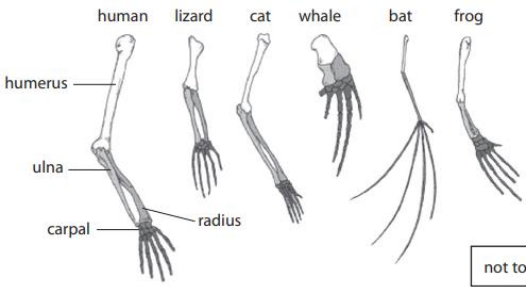
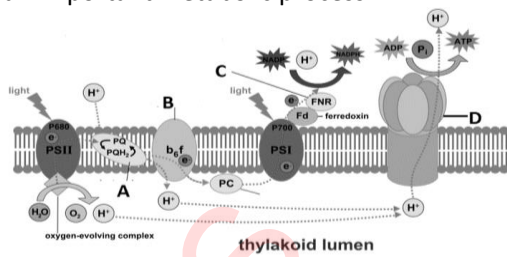
Invigilator Sign. \_\_\_\_\_

**Q1. Fill the relevant bubble against each question according to curriculum. Each part carries one mark.**

S #	Question	(A)	(B)	(C)	(D)	(A)	(B)	(C)	(D)																									
(i)	A certain poison disrupts the cytoskeleton of cell. Which of the following functions would be affected most probably by the poison?	Digestion within lysosomes	Protein synthesis	Cell division	Cellular respiration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>																									
(ii)	Identify hetero polysaccharide from the following:	Chitin	Glycogen	Pectin	Cellulose	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>																									
(iii)	Glycolysis is a process that:	Produces ATP and NADH	Produces ATP only	Is not a net producer of energy rich molecules	Consumes as much ATPs as is produced	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>																									
(iv)	What will happen to reaction if activation energy is decreased?	Rate of reaction decreases	Rate of reaction increases	No effect on the rate of reaction	Reaction is reversed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>																									
(v)	One of the following viruses have complex capsid:	Influenza virus	Adenovirus	Bacteriophage	Tobacco mosaic virus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>																									
(vi)	We have 1 billion bacteria per square centimetre of our skin. Why we have so many bacteria on our skin?	To produce acne, eczema and pimples on the skin	To limit the growth of pathogens by colonization resistance	To provide essential minerals and nutrients to the body	To help in decomposition after the death of a person	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>																									
(vii)	Sundew is a/an:	Mutualistic plant	Parasitic plant	Carnivorous plant	Autotrophic plant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>																									
(viii)	Identify the column given in table that contains correct substances related to acylglycerols?	<table border="1" style="width: 100%; text-align: center;"> <tr> <th>Substances</th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> <tr> <td>Amino acid</td> <td>✓</td> <td>x</td> <td>x</td> <td>x</td> </tr> <tr> <td>Glucose</td> <td>x</td> <td>x</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>Fatty acid</td> <td>x</td> <td>✓</td> <td>x</td> <td>x</td> </tr> <tr> <td>Glycerol</td> <td>x</td> <td>✓</td> <td>x</td> <td>x</td> </tr> </table>				Substances	A	B	C	D	Amino acid	✓	x	x	x	Glucose	x	x	✓	✓	Fatty acid	x	✓	x	x	Glycerol	x	✓	x	x	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Substances	A	B	C	D																														
Amino acid	✓	x	x	x																														
Glucose	x	x	✓	✓																														
Fatty acid	x	✓	x	x																														
Glycerol	x	✓	x	x																														
(ix)	Trees with mycorrhizal association grow:	Slower than other trees	Better than other trees	Small roots and leaves	Only in favourable conditions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>																									

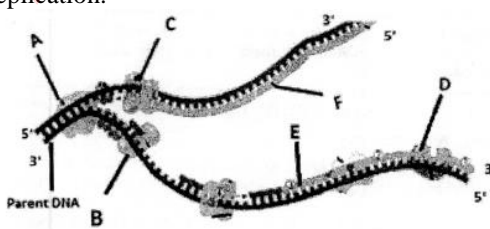
(x)	The function of saprotrophs in an ecosystem is to:	Provide oxygen to producers	Return nutrients to the environment	Increase complexity of food chain	Decrease competition among consumers	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
(xi)	Which of the following is not common to all divisions of vascular plants?	Development of seeds	Alternation of generations	Xylem and phloem	Dominance of diploid generation	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
(xii)	All organ systems are less developed in parasitic flat worms EXCEPT:	Circulatory system	Digestive system	Reproductive system	Respiratory system	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
(xiii)	Traits which exhibit continuous phenotypic variation are typically determined by this inheritance form:	Incomplete dominance	Polygenic inheritance	Multiple-allele inheritance	Sex-linked inheritance	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
(xiv)	When two golden <i>Labrador retriever</i> cross with each other, they produce golden offsprings:	Zero %	25%	50%	100%	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
(xv)	Ovulation is stimulated by the sharp increase of which of the following hormone?	SH	Estrogen	LH	Progesterone	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
(xvi)	All organisms share the same genetic code. This commonality is evidence that:	Evolution is occurring now	Convergent evolution has occurred	All organisms are descended from common ancestor	Evolution occurs gradually	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
(xvii)	If you want to label amino acids but not DNA, which of the following radioactive isotopes would you use?	$^{18}\text{F}$	$^{35}\text{S}$	$^{14}\text{C}$	$^{32}\text{P}$	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>



				from prokaryote and give salient points of that theory.	
(xii)	State Lamarck's assumptions for the explanation of evolution.	3	OR	Give three unique features of angiosperms and their benefits.	3
(xiii)	Diagram shows the fore limb of different vertebrates. Evolutionists believe that all these vertebrates evolved from one common origin. Describe the evolutionary evidence that support this belief. 	3	OR	In the following diagram a segment of thylakoid membrane is depicted showing an important metabolic process. 	1+2
(xiv)	All chordates go through few similar stages in life. Summarize any three of them.	3	OR	Kingdom Protista is considered a polyphyletic group. Give reasons.	3

**Section – C (Marks 26)**

**Note:** Attempt all questions. Marks of each question are given along with each question.

Q.3	What is plasma membrane? Explain in detail fluid mosaic model of plasma membrane.	7	OR	The given figure shows the process of DNA replication. 	2+5
Q.4	The two strands of DNA are not identical but are complementary. Give reasons. Also explain the double helical structure of DNA molecule.	2+5	OR	Differentiate between xerarch and hydrarch succession. Explain the xerarch succession.	2+5
Q.5	How opening and closing of stomata is controlled?	3+3	OR	How do bacteriophages reproduce? Explain lytic and lysogenic cycle in detail.	3+3
Q.6	How X- linked recessive characters are inherited in humans? Explain with an example.	2+4	OR	What are the events that capture light and convert it into chemical energy during light dependent non-cyclic reactions?	6