BIOLOGY HSSC–I

Inclusive Scheme of Studies 2024 (1200 Marks)

SECTION – A (Marks 17)

Time allowed: 25 Minutes

Candidate Sign. _____

Invigilator Sign. _____

Answer Sheet No. _____

Signature should not cross this line

Version No.				
3	0	0	6	1

ROLL NUMBER						

Deleting/overwriting is not allowed.
Do not use lead pencil.

Fill the relevant bubble against each question according to curriculum:

	Question	A	B	C	D	A	B	C	D
1.	Which organelle is responsible for modifying and packaging proteins?	Ribosome	Golgi apparatus	Nucleus	Lysosome	○	○	○	○
2.	Cellulose is mainly found in:	Animal cells	Fungal cell walls	Plant cell walls	Bacterial capsules	○	○	○	○
3.	During anaerobic respiration in human muscles, pyruvate is converted into:	Ethanol	Carbon dioxide	Lactic acid	Glucose	○	○	○	○
4.	The minimum energy required to start a chemical reaction is called:	Potential energy	Activation energy	Kinetic energy	Heat energy	○	○	○	○
5.	Viruses are classified structurally based on:	Size only	Shape and nucleic acid type	Colour	Habitat	○	○	○	○
6.	Which vitamin is commonly produced by intestinal bacteria?	Vitamin A	Vitamin C	Vitamin K	Vitamin D	○	○	○	○
7.	Which plant traps insects using sticky leaves?	Nepenthes	Saltwort	Sunflower	Pine	○	○	○	○
8.	A triglyceride molecule is formed by:	One fatty acid and one glycerol	Two fatty acids and one phosphate	Three fatty acids and one glycerol	Amino acids and glycerol	○	○	○	○
9.	Mycorrhiza is an association between:	Bacteria and roots	Algae and fungi	Plants and insects	Fungi and plant roots	○	○	○	○
10.	Holozoic nutrition is found in:	Plants	Fungi	Bacteria	Animals	○	○	○	○
11.	Example of vascular plant:	Fern	Algae	Moss	Fungi	○	○	○	○
12.	Which phylum includes animals with jointed appendages?	Arthropoda	Annelida	Mollusca	Echinoder-mata	○	○	○	○
13.	Polygenic inheritance results in:	Single trait expression	Continuous variation	Dominant traits only	Mutation only	○	○	○	○
14.	Epistasis modifies:	DNA	Genetrix ratio	Phenotypic ratio	Protein	○	○	○	○
15.	Menstrual cycle is controlled by:	Enzymes	Vitamins	Minerals	Hormones	○	○	○	○
16.	Molecular evidence of evolution is obtained from:	DNA analysis	Embryology	Anatomy	Fossils	○	○	○	○
17.	Griffith and Hershey-Chase experiments proved that:	Proteins are hereditary material	DNA is hereditary material	RNA is genetic material	Lipids carry genes	○	○	○	○

BIOLOGY HSSC–I

Inclusive Scheme of Studies 2024 (1200 Marks)

me allowed: 2:35 Hours **Total Marks Sections B and C: 63**

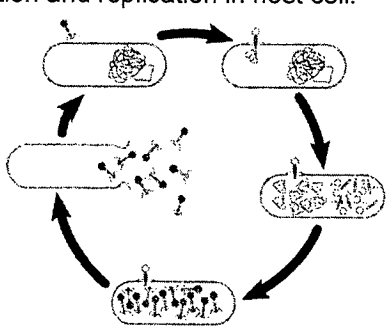
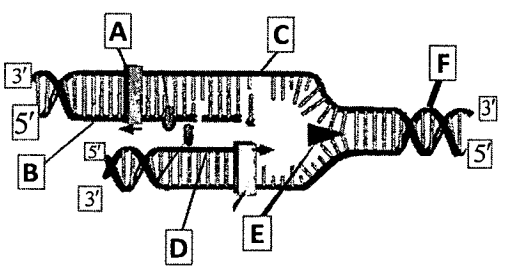
SECTION – B (Marks 39)

Q. 2 Answers the following parts briefly. **(13 x 3 = 39)**

(i)	Differentiate between smooth and rough endoplasmic reticulum (any three points).	1x3	OR	State any three general characteristics of Whisk Ferns.	1x3
)	Classify enzymes on the basis of the substrates they act upon, giving any three examples.	1x3	OR	Outline steps of preparatory phase of glycolysis.	03
(iii)	Describe any three general characteristics of sponges.	1x3	OR	State three conclusions of Griffith control experiments.	1x3
(v)	Describe three effects of amino acid sequence change in haemoglobin.	03	OR	Enlist any six stages of HIV life cycle.	03
)	Briefly explain three types of plant movements.	1x3	OR	Compare photosynthetic bacteria and chemosynthetic bacteria. (Three points)	1x3
(vi)	Give three characteristics of bryophytes.	1x3	OR	Briefly explain three physical methods to control bacteria.	1x3
ii)	What is meant by minimum temperature? How it affects enzymatic action?	1+2	OR	Draw and briefly explain three events of Endosymbiotic theory.	1x3
(viii)	Explain three ways of nitrogen fixation.	1x3	OR	Enlist three advantages of endospore formation.	1x3
(ix)	Name three Hormones of male reproductive system and write role of each Hormone.	1x3	OR	State three events of menstrual phase of menstrual cycle.	1x3
)	Explain through a cross that incomplete dominance is a deviation from Mendal's law of segregation.	03	OR	Describe three steps of Polypeptide elongation during protein synthesis.	1x3
i)	State three characteristics which are common in all chordates.	1x3	OR	Name and explain any three diseases caused by fungi in humans.	1x3
(xii)	Briefly elaborate three drawbacks of Larmarckism.	1x3	OR	Describe three characteristics of angiosperms, that make them successful land plants.	03
iii)	Differentiate between convergent and divergent evolution. (Three points)	1x3	OR	State three roles of ATP-Synthetase during chemiosmosis.	1x3

SECTION – C (Marks 24)

ttempt the following questions.

Q.3	Identify the cycle of Bacteriophage and explain its infection and replication in host cell. 	1+3 +2	OR	Identify parts A – F in DNA replication process and briefly explain each part. 	3+3
.4	Explain the double helical structure of DNA as proposed by Watson and Crick. Also draw diagram.	4+2	OR	Explain kinds and general stages of succession.	3+3
.5	Describe the structure and functions of mitochondria. Also draw suitable figure of mitochondria.	2+2 +2	OR	Describe the mechanism involved in opening and closing of stomata by K+ion influx / efflux theory.	06
.6	Draw events of non-cyclic photophosphorylation and explain absorption of light by PS-II and chemiosmotic synthesis of ATP during light reaction.	2+2 +2	OR	**a.** Explain genetics of hemophilia with reference to pattern of inheritance. **b.** Can two normal parents have a hemophilic child? Work out the probability.	3+3