



BIOLOGY SSC-I

Inclusive Scheme of Studies 2024 (1200 Marks)

SECTION – A (Marks 12)

Time allowed: 20 Minutes

Candidate Sign. _____

Supervisor Sign. _____

Answer Sheet No. _____

Version No.				
1	0	0	6	1

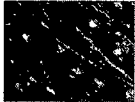
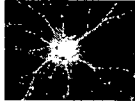
0	●	●	0	0
●	1	1	1	●
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	●	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

ROLL NUMBER						

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

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. Climate change research involves biology, meteorology and geology mainly to:	Reduce efficiency	Avoid experiments	Integrate different expertise	Create conflict	☐	☐	☐	☐
2. The forelimbs of human, whale, and bat provide evidence of evolution because they are:	Analogous organs	Vestigial organs	Modified organs	Homologous organs	☐	☐	☐	☐
3. If guanine is present on one strand of DNA, the base present on the complementary strand:	Adenine	Thymine	Uracil	Cytosine	☐	☐	☐	☐
4. Which condition is essential for organisms to be placed in the same species?	Can interbreed artificially	Have similar habitat	Produce fertile offspring	Produce identical offspring	☐	☐	☐	☐
5. During which phase of the cell cycle does DNA replication occur?	G ₁	G ₂	M	S	☐	☐	☐	☐
6. The smooth movement and mixing of food in the stomach is due to:	Muscular tissue	Connective tissue	Nervous tissue	Epithelial tissue	☐	☐	☐	☐
7. Mainly enzymes are made up of:	Lipids	Proteins	Nucleic acids	Carbohydrates	☐	☐	☐	☐
8. Plants obtain mineral nutrients from soil mainly through:	Root hair	Xylem cells	Parenchyma cells	Phloem cells	☐	☐	☐	☐
9. Transpiration rate decreases in high humidity because:	Air pressure rises	Stomata close	Air is saturated	Leaf area decreases	☐	☐	☐	☐
10. Which of the following processes involves cloning?	Grafting	Tissue culture	Parthenogenesis	Budding	☐	☐	☐	☐
11. After double fertilization the triploid nucleus develops into:	Endosperm	Ovule	Embryo	Seed coat	☐	☐	☐	☐
12. Which cell is responsible for transport of oxygen in animals?	 Muscle cell	 Red Blood cell	 Nerve cell	 Guard cell	☐	☐	☐	☐



BIOLOGY SSC-I

Inclusive Scheme of Studies 2024 (1200 Marks)

42

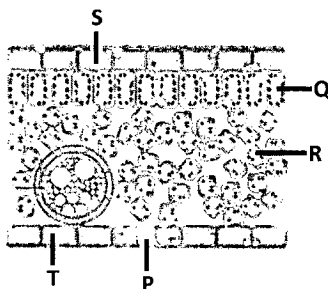
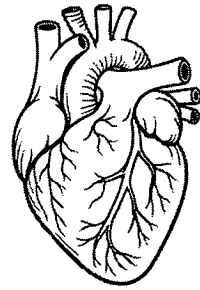
Time allowed: 2:40 Hours

Total Marks Sections B and C: 48

SECTION – B (Marks 30)

Q.2 Attempt the following parts.

(10 x 3 =30)

(i)	How are different types of RNA involved in converting Hereditary information into functional proteins?	1x3	OR	Write two differences between saturated and unsaturated fatty acids. Also describe the basic structure of a lipid molecule briefly.	2+1
(ii)	Briefly explain speciation.	03	OR	Briefly explain Biotechnology and Biophysics. Give one example of each.	1.5 +1.5
(iii)	Why are starch and cellulose classified as polysaccharides? Write any two characteristics of polysaccharides.	1+2	OR	How do runners in plants help in vegetative propagation?	03
(iv)	How does temperature affect rate of transpiration?	03	OR	Name any three macronutrients required by plants along with their use in plants.	1x3
(v)	Name the domain which includes organisms without a true nucleus. Also write two characteristics of this domain.	1+2	OR	Briefly explain the role of epithelial and connective tissues in stomach.	03
(vi)	How does comparative anatomy provide support as an evidence of evolution?	03	OR	What is meant by family, genus and class. According to taxonomic ranking	1x3
(vii)	Muscle cells contain many mitochondria. How this structural feature is advantageous for their function? Justify.	03	OR	Gardeners prefer grafting to rapidly improve fruit quality. Why is this method considered as artificial propagation? Explain briefly.	03
(viii)	How does a non-competitive inhibitor affect enzyme activity?	03	OR	How does mitosis play a role in asexual reproduction and cell replacement?	1.5 +1.5
(ix)	Briefly describe Histology, Genetics and Pharmacology.	1x3	OR	Write any three differences between meiosis and mitosis.	1x3
(x)	Cross-section of a leaf is given. Identify: a. What is the role of part labelled as P? b. Differentiate between the function of Q and R. c. Label the parts S and T. 	1x3	OR	Identify the level of organization in given diagram and enlist any four examples of that level of organization. 	1+2

SECTION – C (Marks 18)

Note: Attempt the following questions.

(3x6=18)

Q.3	Sketch and label Lysosome, Vacuole and Centriole. Also write one role of each in the cell.	2+2 +2	OR	How does Meiosis I reduce the number of chromosomes to half? (Explain the stages of Meiosis I) Also draw the diagrams of Meiosis I.	4+2
Q.4	Differentiate between types of anaerobic respiration. Highlight the significance of anaerobic respiration as well.	4+2	OR	Explain development of male gametophyte in plants. Briefly explain the parts of a seed. Also draw the lifecycle of a plant.	2+2 +2
Q.5	How is the scientific method used to solve a biological problem? Explain all steps in correct sequence with brief explanation of each involved in scientific method.	06	OR	Describe the types of cofactors of enzymes. How enzymes affect energy of activation? Explain. Draw graph as well.	3+3