KIIT Deemed to be University
Online Mid Semester Examination (Spring Semester-2021)

Subject Name & Code: BIOLOGY (LS1001) **Applicable to Courses:**

Full Marks=20 **Time:1 Hour**

SECTION-A(Answer All Questions. All questions carry 2 Marks)

Time:20 Minutes **(5×2=10 Marks)**

Question No	Question Type(MCQ/SAT)	Question	CO Mapping
Q.No:1(a)	SAT	"Bacteria are considered as necessary evil". Justify the statement. **Ans:** both good and bad features (1 mark + 1 mark)	CO1
	SAT	What is the role of stem cell in gene therapy? **Ans:** Stem cells are harvested from the patient, and a modified virus is used to insert a healthy version of the nonfunctional gene.	CO5
	SAT	Brief the role of skin in homeostatic regulation. **Ans:** Skin functions in homeostasis include protection, regulation of body temperature, sensory reception, water balance, synthesis of vitamins and hormones, and absorption of materials.	CO3
	SAT	Name a branched chain carbohydrate and its storage organ in animal. **Ans:** Glycogen, Liver & Muscles	CO2
Q.No:1(b)	SAT	Explain the Deoxy sugar name of nucleic acid? **Ans:** The term "deoxy" refers to the fact that there is no oxygen attached to the 2' carbon atom.	CO2
	SAT	Explain the importance of hydrogen bonding in living organisms. **Ans:** Hydrogen bonding is responsible for (i) holding DNA together, (ii) protein folding.	CO1

	SAT	What are telomeres and why are they important? **Ans:** Definition (1 mark) & 2 functions (0.5+0.5 mark)	**CO2**
	SAT	What are steroids and how are they different from triglycerides? **Ans:** Steroids definition (1 mark) & 1 difference (1 mark)	**CO2**
Q.No:1(c)	**SAT**	How are members of kingdom Monera different from those in Animalia? **Ans:**Any 2 differences	**CO1**
	SAT	Why are viruses considered as bad microbes? **Ans:** as they can cause diseases	**CO1**
	SAT	Why are lysosomes known as 'suicidal bags of the cell'? **Ans:** because they contain lytic enzymes capable of digesting cells and unwanted materials.	**CO1**
	SAT	What is a telocentric chromosome? **Ans:** Chromosome whose centromere is located at one end and has therefore only one arm.	**CO2**
Q.No:1(d)	**SAT**	What is importance of S-phase during mitosis? **Ans:** DNA replication	**CO2**
	SAT	Write two properties of genetic code? **Ans:** Any 2 properties and their meaning	**CO3**
	SAT	Brief mRNA editing process. **Ans:** explain splicing and where splicing occurs (1+1 mark)	**CO3**
	SAT	What does N and C terminal determine in a polypeptide chain? **Ans:** free amino group and free carboxyl group ; start and stop of polypeptide chain	**CO2**
Q.No:1(e)	**SAT**	What role do control centre and effector play in homeostatic regulation? **Ans:** 1 function of each (1+1 mark)	**CO3**

	SAT	What is the importance of cell differentiation in a multicellular organism? **Ans:** Necessary for embryological development, cell renewal and organism's response to injury	**CO2**
	SAT	What are organelles? Name a membrane bound and one membrane less organelle. **Ans:** Definition (1 mark) ; Membrane bound & Membrane less (0.5 + 0.5 mark)	**CO1**
	SAT	Why is ATP considered as the connecting link between anabolism and catabolism? **Ans:** Explain catabolism fuels anabolism	**CO1**

SECTION-B (Answer Any One Question. Each Question carries 10 Marks)

Time: 30 Minutes **(1×10=10 Marks)**

Question No	Question	CO Mapping
Q.No:2	What is biodiversity and why is it important? Elaborate the different threats to biodiversity. **Ans:** Definition (1 mark) + Importance (3 marks) + Threats (6 marks)	**CO2**
Q.No:3	Define homeostasis. How is it connected to the nervous and the endocrine system? **Ans:** Definition (2 marks) + Extrinsic homeostasis with detailed example (8 marks)	**CO4**
Q.No:4	Explain the different stages of translation with help of a schematic diagram. State 2 major differences between transcription and translation. **Ans:** Different stages of translation (4.5 marks) + Diagram (3.5 marks) + Difference (2 marks)	**CO3**
Q.No:5	Draw a neat labeled (10 labels) diagram of an Animal cell. Mention any four differences between prokaryotes and eukaryotes. **Ans:** Diagram with labels (6 marks) + Any 4 difference (4 marks)	**CO1**
Q.No:6	Classify stem cells based on their ability to differentiate and regenerate. Explain any three applications of stem cells.	**CO5**

	Ans: Classification on basis of potency (4 marks) + Brief of 3 applications (6 marks)	

Controller of Examinations