INDIAN SCHOOL AL WADI AL KABIR

UNIT TEST (2024-25)

CLASS: XI **Sub: BIOLOGY (044)** **MAX.MARKS: 30**

DATE: 06-06-2024 **SET II** **TIME: 1 HOUR**

General Instructions:

(i) All questions are compulsory.
(ii) The question paper has five sections and 14 questions. All questions are compulsory.
(iii) Section–A has 6 questions of 1 mark each; Section–B has 3 questions of 2 marks each; Section– C has 3 questions of 3 marks each; Section– D has 1 case-based question of 4 marks and Section–E has 1 question of 5 marks.
(iv) There is no overall choice. However, internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions.
(v) Wherever necessary, neat and properly labeled diagrams should be drawn.

SECTION – A		
Q. No.	**QUESTION**	**Marks**
1	New cells are generated from (a) bacterial fermentation. (b) regeneration of old cells. (c) pre-existing cells. (d) cell metabolism.	1
2	The interphase is divided into ____phases. (a) 3 (b) 4 (c) 2 (d) 0	1
3	Glycogen is a homopolymer made of (a) Glucose unit. (b) Galactose unit. (c) Ribose unit. (d) Amino acid unit.	1
4	Amino acids, have both an amino group and a carboxyl group in their structure. Which one of the following is an amino acid? (a) Formic acid (b) Methane (c) Glycine (d) Phenol	1

Question No. 5 to 6 consist of two statements – **Assertion (A) and Reason (R)**. Answer these questions selecting the appropriate option given below: (a) Both A and R are true and R is the correct explanation of A. (b) Both A and R are true and R is not the correct explanation of A. (c) A is true but R is false. (d) A is false but R is true.		
5	**Assertion (A)**: Chloroplasts are found in all the eukaryotic cells. **Reason (R):** They perform the function of photosynthesis as they trap energy.	1
6	**Assertion (A):** Mitosis is the means of multiplication in unicellular organisms. **Reason (R):** Mitosis in multicellular organisms brings about growth and repair.	1
	SECTION-B	
7	Differentiate between cilia and flagella. **OR** Differentiate between prokaryotic ribosomes and eukaryotic ribosomes.	2
8	Define the following terms. (i) Spindle fiber (ii) Centromere	2
9	What are amino acids? Give any two examples.	2
	SECTION-C	
10	With the help of diagrams, classify the different types of chromosomes on the basis of the position of centromere.	3
11	Interphase is called resting phase but it is a stage of metabolic activity. Justify this statement.	3
12	What is zwitter ion? Explain with an example. **OR** What are metabolites? Differentiate between primary and secondary metabolites.	3
	SECTION-D	
13	**CASE STUDY –** The production of offspring by sexual reproduction includes the fusion of two gametes, each with a complete haploid set of chromosomes. Gametes are formed from specialised diploid cells. This specialised kind of cell division that reduces the chromosome number by half results in the production of haploid daughter cells. This kind of division is called meiosis. Meiosis ensures the production of haploid phase in the life cycle of sexually reproducing organisms whereas fertilisation restores the diploid phase. We come across meiosis during gametogenesis in plants and animals. This leads	

	to the formation of haploid gametes. The key features of meiosis are as follows: Meiosis involves two sequential cycles of nuclear and cell division called meiosis I and meiosis II but only a single cycle of DNA replication. Meiosis I is initiated after the parental chromosomes have replicated to produce identical sister chromatids at the S phase. Meiosis involves pairing of homologous chromosomes and recombination between non-sister chromatids of homologous chromosomes. Four haploid cells are formed at the end of meiosis II.	
I	In the progeny produced by the fusion of two gametes, what is the set of chromosomes found in each gamete?	1
II	At which stage do the chromatids of individual chromosomes separate during meiosis?	1
III	What is the characteristic event that takes place in Metaphase.	1
IV	What is the end result in mitosis and meiosis?	1
	SECTION-E	
14	Name and explain the three phases of cell cycle associated with interphase of mitosis with the help of a diagram. **OR** Enumerate the events that occur in mitosis of cell division with the help of diagrams.	5