



MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL

Paper Code : BS-B401/BSC 401/BSC-401/BSC401 Biology

UPID : 004408

Time Allotted : 3 Hours

Full Marks :70

The Figures in the margin indicate full marks.

Candidate are required to give their answers in their own words as far as practicable

Group-A (Very Short Answer Type Question)

1. Answer any ten of the following :

[1 x 10 = 10]

- (I) Discuss how the classification system has undergone several changes over a period of time.
- (II) The process of transfer of hereditary character from one generation to another is known as.....?
- (III) Name the Vitamins whose deficiency cause i) rickets ii) scurvy
- (IV) Define enzymes with suitable example.
- (V) Name the enzyme that transcribes hnRNA in eukaryotes.
- (VI) How many essential amino acids are in the nature?
- (VII) What are imperfect fungi?
- (VIII) A sudden change in the gene which is heritable from one generation to other is known as_____.
- (IX) Why carbohydrates are generally optically active?
- (X) Name few of the enzyme secreted by pancreas?
- (XI) Diatoms are also called 'pearls of the ocean'. Why?
- (XII) Which of the following process is an exception of Mendel Law?
 - A. Mutation
 - B. Variation
 - C. Cloning
 - D. Linkage

Group-B (Short Answer Type Question)

Answer any three of the following :

[5 x 3 = 15]

2. Differentiate between aminotelic, uricotelic, ureotelic organisms [5]
3. Differentiate between Meiosis and Mitosis [5]
4. Differentiate between prokaryotic and eukaryotic cell [5]
5. Explain Epistasis with suitable example. [5]
6. In catalyzed reactions, the formation of the enzyme-substrate complex is the first step. Explain the other steps until the formation of the product. [5]

Group-C (Long Answer Type Question)

Answer any three of the following :

[15 x 3 = 45]

7. Give characteristics of *E.coli*, *S. cerevisiae*, *D. Melanogaster* as model organisms [15]
8. explain the Hierarchy of DNA structure- from single stranded to double helix to nucleosomes [15]
9. How will you convey that Biology is as important a scientific discipline as Mathematics, Physics and Chemistry [15]
10. Give characteristics of *C. elegance*, *A. Thaliana*, *M. musculus* as model organisms [15]
11. Explain how competitive , un competitive and non competitive inhibitors act on k_m and v_{max} . [15]

*** END OF PAPER ***