

**MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL**

Paper Code : BS-BIO301 Biology

UPID : 003488

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 × 10 = 10 ]

- (I) What is the function of pupil of eye?
- (II) What is the storage food product of animal?
- (III) Define allele.
- (IV) Write the name of any one aromatic amino acid.
- (V) What is ribozyme?
- (VI) Which RNA polymerase is responsible for bacterial transcription?
- (VII) Define pleiotropy.
- (VIII) What are the components of plant cell wall?
- (IX) Write down the name of smallest taxon.
- (X) Which enzyme removes RNA primer?
- (XI) Where does glycolysis take place?
- (XII) Which type of ribosome present in eukaryotic cell?

**Group-B (Short Answer Type Question)***Answer any three of the following*

[ 5 × 3 = 15 ]

2. Write down the taxonomic hierarchy in descending order. [ 5 ]
3. Write down the Mendel's law of segregation. [ 5 ]
4. Write down the relationship between science and engineering. [ 5 ]
5. Write down the characteristic properties of Kingdom Monera. [ 5 ]
6. Write down function of DNA. [ 5 ]

**Group-C (Long Answer Type Question)***Answer any three of the following*

[ 15 × 3 = 45 ]

7. (a) What is biological classification? [ 2 ]  
(b) Distinguish between ecosystem and community. [ 5 ]  
(c) Write down three kingdom classification system. [ 8 ]
8. (a) Write down the difference between gene and allele. [ 5 ]  
(b) Write down the difference between Mendel's first law and Mendel's second law. [ 5 ]  
(c) Write a short note on different types of allele. [ 5 ]
9. (a) Write down the definition of selective media, differential media and enrichment media. [ 2+2+2 ]  
(b) Write down the beneficial impact of different microbes in industrial purpose. [ 9 ]
10. (a) What is the function of sigma factor? [ 2 ]  
(b) Describe initiation, elongation and termination process of bacterial transcription process. [ 13 ]
11. (a) Write down the difference between essential amino acid and non-essential amino acid with example. [ 5 ]  
(b) Write short note on alpha helix and beta pleated sheet. [ 5+5 ]