

**BLDE (DEEMED TO BE UNIVERSITY)**

**B.Sc. in Biotechnology**

**[Time: 3 Hours]**

**[Max. Marks: 80]**

**IV SEMESTER**

**PAPER - I (Molecular Biology)**

**QP CODE: 8475**

Your answer should be specific to the questions asked.

Write Question No. in left side of margin.

**Long Questions**

**10X1 = 10 Marks**

1. Write the characteristic of genetic code

**Short Essays: (Any – 8)**

**5 X 8 = 40 Marks**

2. Supercoiled nature of DNA
3. Give an overview of Initiation of transcription process
4. Give an account on different enzymes in replication
5. Fidelity of Replication
6. Semiconservative replication
7. Regulation of gene expression
8. Explain mRNA processing
9. RNA polymerase
10. Explain post translation modification

**Short Answers: (Any – 10)**

**3 X 10 = 30 Marks**

11. Central dogma of life
12. Mutation
13. Types of DNA
14. RNA polymerase
15. DNA damage
16. Types of RNA
17. Inhibitors of DNA replication
18. Promoter enhancer
19. Enzymes in DNA replication
20. Secondary structure of protein
21. Replication fork

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## **B.Sc. in Biotechnology**

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### **IV SEMESTER**

### **PAPER - II (Immunology)**

**QP CODE: 8476**

Your answer should be specific to the questions asked.  
Write Question No. in left side of margin.

#### **Long Questions**

**10X1 = 10 Marks**

1. Write in detail about Humoral & Cellular immune responses

#### **Short Essays: (Any – 8)**

**5 X 8 = 40 Marks**

2. Maturation of antibody
3. Write a short note on class I & class II MHC antigens
4. Write the types & molecular structure of Immuno-globulins
5. Explain the antibody diversity
6. Differentiation of leukocytes
7. Short note on antigen processing
8. Explain clonal selection theory
9. Explain the genetic basis of antibody diversity
10. Autoimmune disorder

#### **Short Answers: (Any – 10)**

**3 X 10 = 30 Marks**

11. Define the allotypes & idiotypes
12. Leukocytes
13. bacterial vaccines
14. helper T-cell
15. Somatic recombination
16. Autoimmune diseases
17. AIDS
18. viral vaccines
19. T-cell receptors
20. B-lymphocyte differentiation
21. T- lymphocytes

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## **B.Sc. in Biotechnology**

**[Time: 3 Hours]**

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### **IV SEMESTER**

### **PAPER - III (Genetics)**

**QP CODE: 8477**

Your answer should be specific to the questions asked.  
Write Question No. in left side of margin.

#### **Long Questions**

**10X1 = 10 Marks**

1. Linkage and Crossing Over

#### **Short Essays: (Any – 8)**

**5 X 8 = 40 Marks**

2. Meiosis
3. Types of Chromosomes
4. Incomplete Dominance
5. Karyotype
6. Ames Test for Mutation
7. Sex Linked Inheritance
8. Natural Selection
9. Linkage
10. Extra Nuclear Inheritance

#### **Short Answers: (Any – 10)**

**3 X 10 = 30 Marks**

11. LINES and SINES
12. Back Cross
13. In breeding
14. Dosage Compensation
15. Deletion
16. Euchromatin
17. G J Mendel
18. Reciprocal Translocation
19. Centromere
20. Genetic Code
21. Evolution Genetics