

B.Sc. (CBCS Pattern) Semester-III
011B - Biotechnology Paper-II : Molecular Biology and Enzymology

P. Pages : 2

Time : Three Hours



GUG/S/25/11619

Max. Marks : 50

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- Notes : 1. All questions are compulsory.
2. Draw the diagram wherever it is necessary.

1. Discuss Lock and key and Induced fit model of enzyme activity in detail. **10**

OR

a) What is multienzyme complex. **2½**

b) Write a note on allosteric modulator. **2½**

c) Discuss classification of enzyme in brief. **2½**

d) Define coenzyme, cofactor and inhibitor. **2½**

2. Discuss various factors affecting enzyme activity in detail. **10**

OR

a) How temperature affect enzyme activity **2½**

b) Explain Acid base catalysis of enzyme? **2½**

c) Write a note on Irreversible inhibition. **2½**

d) Discuss the technique of Enzyme Immobilization. **2½**

3. Discuss the Lac Operon. **10**

OR

a) Describe semiconservative mode of replication. **2½**

b) Write a note on Topoisomerase. **2½**

c) Explain structure of holoenzyme DNA polymerase-III. **2½**

d) Write a note on Okazaki fragments. **2½**

4. Describe general characteristic of genetic code in detail. **10**

OR

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| a) Write a short note on Wobble Hypothesis. | 2½ |
| b) Write a note on Shine Dalgarno Sequence | 2½ |
| c) Describe the initiation factors in protein synthesis. | 2½ |
| d) Write a note on codon-anti codon interaction. | 2½ |

5. Solve any ten.

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|---|---|
| a) Define Zymogen. | 1 |
| b) What is Transition State | 1 |
| c) What is apoenzyme | 1 |
| d) What is the application immobilized enzyme? | 1 |
| e) What is enzyme catalysis? | 1 |
| f) What is temperature quotient. | 1 |
| g) What is long form of SSB. | 1 |
| h) Give role of enzyme helicase in DNA replication. | 1 |
| i) What is transcription bubble? | 1 |
| j) Which codon acts as initiation codon? | 1 |
| k) Which is the first amino acid brought by t-RNA in bacterial translation? | 1 |
| l) What are the termination codons? | 1 |
