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V SEMESTER B.Sc. EXAMINATION – MARCH/APRIL 2022

045

SCHEME: SEMESTER- CBCS

BIOTECHNOLOGY

Molecular Biology and Genetic Engineering

Time: 03 Hours

Max Marks: 80

Instructions to Candidates: Draw neat and labeled diagrams wherever necessary.

I. Answer any FIVE questions from Part-A and Part-B. 12x5=60

PART - A

1. Give an account on experiments to prove DNA as genetic material.
2. Explain positive and negative regulation of Lac operon.
3. Explain:
 - a) Deciphering genetic code. 6
 - b) Inhibitors of protein synthesis. 6

PART - B

4. Give an account on recent developments in Genetic engineering.
5. Explain genetic map of pUC18 and pBR322.
6. Write a note on:
 - a) Principle and applications of Southern blotting. 6
 - b) Any two physical methods of gene transfer. 6

PART - C

II. Answer any TEN questions. 10x2=20

1. What is replication fork?
2. Write the function of helicase and gyrase.
3. Define intron and exon.
4. Name any two inhibitors of transcription.
5. What is universality of genetic code?
6. Why is fidelity of protein synthesis important?
7. Write the functions of S1 nuclease.
8. What is reverse transcriptase?
9. What is stability of plasmid?
10. Give two examples of expression vector.
11. What is colony hybridisation?
12. Name two uses of PCR.

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