



DCZO301

Reg. No.

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III Semester B.Sc. Degree Examination, April - 2023

**ZOOLOGY**

**Molecular Biology Bioinstrumentation and Techniques in Biology**

**Paper : III**

**(NEP Scheme Fresher)**



**Time : 2½ Hours**

**Maximum Marks : 60**

**Instructions of Candidates:**

- 1) *Answers should be written completely in english.*
- 2) *Draw diagrams wherever necessary.*

**PART - A**

**I. Answer the following in One word or One sentence.**

**(5×1=5)**

1. Name the enzyme required for Transcription.
2. How many structural genes are present in trp-operon?
3. Which microscope is used to visualize live cells without staining?
4. What is pH value of Neutral solution.
5. \_\_\_\_\_ polymerase is used in PCR.

**PART - B**

**II. Answer any Five of the following.**

**(5×3=15)**

1. Define cistron, muton and Recon.
2. With reference to genetic code, explain:
  - a) Degeneracy
  - b) Wobble hypothesis.
3. Comment on gene silencing.
4. Mention any three post translational modifications.
5. Define magnification and resolution of microscope.
6. State Beer - Lambert's law.
7. What is Western Blotting? Mention any two application of it.

**[P.T.O.]**



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**PART - C**

**III. Answer any Four of the following. (4×5=20)**

1. Mention any five differences between prokaryotic and eukaryotic transcription.
2. Explain 'capping' and 'polyadenylation' in post - transcriptional modification.
3. Describe the principle involved in centrifugation. Add a note on its applications.
4. List any five applications of SDS-PAGE.
5. Explain the principle of DNA fingerprinting.
6. Write a note on RNAi.

**PART - D**

**IV. Answer any Two of the following. (2×10=20)**

1. Explain the major steps involved in Translation process in Eukaryotes.
  2. What is operon? Explain the regulation of lac-operon.
  3. With a neat labelled diagram, explain the principle of scanning electron microscope (SEM). Add a note on its applications.
  4. Explain sanger's Dideoxy method of DNA sequencing.
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