



**Progressive Education Society's**  
**Modern College of Arts, Science & Commerce Ganeshkhind, Pune – 16**  
**(Autonomous)**  
**End Semester Examination: MAR / APR 2025**  
**Faculty: Science and Technology**

**Program: B.Sc.Gen03**  
**Program (Specific): Zoology**  
**Class: T.Y.B.Sc**  
**Name of the Course: Molecular Biology**  
**Course Code: 24 –ZO-363**  
**Paper: III**

**Semester: VI**

**SET: A**  
**Course Type: DSEC**  
**Max.Marks: 35**  
**Time: 2Hr**

**Instructions to the candidate:**

- 1) *There are 5 sections in the question paper. Write each section on separate page.*
- 2) *All Sections are compulsory.*
- 3) *Figures to the right indicate full marks.*
- 4) *Draw a well labelled diagram wherever necessary.*

**Q1) Define/Explain**

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- a) Define Replication fork.
- b) Explain S strain.
- c) Define Gene.
- d) Explain complimentary base Pairing.
- e) Define Chromatin.

**Q2) Very short answer questions (Attempt any 4/6)**

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- a) What is a promoter?
- b) Explain the term Cistron.
- c) Give the function of RNA Primer.
- d) What is AUG?
- e) Define Shine Dalgarno sequence.
- f) What is PCR?

**Q3) Short answer questions (Attempt any 4/6)**

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- a) Explain intron and Exon.
- b) Define Purines.
- c) What is the role of restriction enzyme?
- d) Write the Anticodon of AUG and UGG.



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- e) Give the application of rDNA.
- f) What is linker DNA?

**Q4) Short answer questions (Attempt any 4/6)**

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- a) Give a detailed account on DNA as a genetic material.
- b) Discuss prokaryotic transcription initiation.
- c) Describe the structure of clover leaf model of tRNA.
- d) write a note on DNA finger Printing.
- e) Describe Photo repair Mechanism.
- f) Sketch and label Nucleosome.

**Q5) Long answer type Questions**

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**Attempt any two of the following (2/4)**

- a) What is Replication? Describe basic Mechanism of replication.
- b) Describe Properties of Genetic code.
- c) Write a short note mRNA Modification at 3' to 5' end.
- d) What are the structural genes controlled by lac operon.