Progressive Education Society's
Modern College of Arts, Science & Commerce Ganeshkhind, Pune – 16
(Autonomous)
End Semester Examination: Nov./Dec. 2023
Faculty: Science and Technology

Program: B.Sc. Biotech (04) **Semester: III** **SET: C**
Program (Specific): Biotechnology **Course Type: Core**
Class: S. Y. B.Sc. **Max. Marks: 35**
Name of the Course: Molecular Biology 1
Course Code: 23 BBT-302 **Time: 2 Hr.**

Instructions to the candidate:

1) ***There are 4 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.***

SECTION: A

Q1) Answer the following (Attempt any 5/6) **5**

1. State Chargaff's rule.
2. Give any two inhibitors of replication process.
3. Mention any two enzymes used for DNA unwinding.
4. Define nucleosome.
5. What are nucleosides?
6. What is t-RNA?

SECTION: B

Q2) Answer the following (Attempt any 5/6) **10**

1. Write a short note Z-form of DNA.
2. Briefly explain central dogma.
3. Comment on role of Helicase.
4. Draw a neat labelled diagram of DNA double helix.
5. Explain proofreading activity with respect to DNA replication.

SECTION: C

Q3) Answer the following (Attempt any 2/4) **8**

1. Explain fidelity of replication.
2. Explain rolling circle model of DNA replication?
3. Discuss contributions of scientist in elucidation structure of DNA

[P.T.O]

4. A sample of purified DNA obtained from plant contain 15 mole percent of cytosine. Assuming only four principle bases are percent. Calculate the approximate mole percentage of purine residues in given DNA sample.

SECTION: D

Q4) Answer the following (Attempt any 2/4) **12**

1. Compare and contrast eukaryotic and prokaryotic replication process.
2. Discuss significance of genome organization.
3. Give a detailed account on Griffith's experiment.
4. Describe degeneracy of genetic code.