

2021  
B.A./B.Sc. (General) Fifth Semester  
Biochemistry  
Paper -A: Molecular Biology – I

Time allowed: 3 Hours

Max. Marks: 45

**NOTE:** Attempt five questions in all, including Question No. 1 which is compulsory and selecting one question from each Unit.

x-x-x

I. Answer the following:-

- a) What are telomeres and centromere?
- b) Name two inhibitors of protein biosynthesis with site of action.
- c) What is RNA splicing?
- d) What do you mean by semi-conservative replication?
- e) What is wobble hypothesis?
- f) What are promoter sequences? (6x1½)

**UNIT – I**

II. Describe the detailed structure of chromatin material. Also explain the Watson -Crick model of DNA in detail. (9)

III. Write short notes on:-

- a) Explain Griffith's experiment
- b) Topoisomerases
- c) Extra nuclear genome (3x3)

**UNIT – II**

IV. a) What is DNA repair mechanism? Explain.

b) Write a short note on:-

- i) DNA recombination,
- ii) Bidirectional replication (5,4)

P.T.O.

(2)

- V. How DNA replication takes place? Explain in detail. (9)

### **UNIT - III**

- VI. Write short Notes on:-

- a) Ribozymes
- b) Inhibitors of transcription
- c) Initiation of transcription (3x3)

- VII. a) Discuss the termination of transcription in detail. Also explain the regulation of transcription.

- b) How mRNA editing and processing takes place. (5,4)

### **UNIT – IV**

- VIII. a) Explain the initiation step of translation in detail.

- b) What are posttranslational modifications? Explain. (5,4)

- IX. Write short notes on:-

- a) Termination and inhibitors of Translation
- b) Genetic code (2x4½)

x-x-x