

2013

M.Sc.

1st Semester Examination

BIOCHEMISTRY

PAPER—BIC-104

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Answer all question

Group—A

1. Answer any *five* questions from the following : 5×2

- (a) What is meant by negative supercolling of DNA?
- (b) What is meant by apoptosis ? Mention its importance.

(Turn Over)

- (c) Distinguish between N-linked and O-linked glycosylation of proteins.
- (d) Mention the functions of MPF in cell cycle regulation.
- (e) What do you mean by receptor mediated endocytosis ?
- (f) State the features of Photoreactivation repair system.
- (g) Mention the role of 16S rRNA in protein synthesis.
- (h) What is Pribnow box ?

Group—B

Answer any *two* questions from the following : 2×5

2. Describe briefly the eukaryotic promoter system for transcription initiation.
3. Briefly discuss the molecular mechanism of muscle contraction.
4. Discuss the steps of protein targeted to mitochondria and nucleus.

5. Define cell cycle. Discuss the role of P⁵³ in cell cycle regulation.

Group—C

Answer any *two* questions from the following : 2×10

6. Write down the structure and function of Prokaryotic RNA Polymerase. Discuss the differences between Prokaryotic and eukaryotic transcription process. Name some transcription inhibitors.

3+5+2

7. How does DNA topology affect DNA replication? Briefly discuss the role of different enzymes and proteins involved in DNA replication in Prokaryotes.

3+7

8. Describe briefly the mechanism of 5'-capping and 3'-polyadenylation of eukaryotic m-RNA.

5+5

9. Write short notes (any two) :

5+5

- (i) Signal hypothesis in Protein targeting;
 - (ii) SOS repair system;
 - (iii) Role of RNAs in Protein synthesis.
 - (iv) Ribosome & protein translation in bacteria.
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