2014

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.

Group—A

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

(a) Name one protein which remains attached to the inner surface of cell membrane.

(b) What are intermediate filaments? Mention its significance.

(c) What are the differences between type-I and type-II topoisomerase?

(d) What is the functions of 'tubulins' ?

(e) Where 'Kinesis' is located ?

(f) State the role of DNA Pol. I and DNA Pol III in DNA replication.

(g) What is the function of LexA and RecA Protein ?

(h) Mention the function of puromycin.

Answer any *two* questions from the following :

2. What is Protein targeting ? Explain how a Protein is targeted to Chloroplast and Peroxisome. 1+4

3. What are microtubules ? Describe briefly the structure and function of actin and myosin proteins. 1+4

4. Discuss what you know about DNA ligase and AP-Endonuclease.

$2\frac{1}{2}+2\frac{1}{2}$

5. Write short notes on : (any *two*) $2\frac{1}{2}+2\frac{1}{2}$

(i) Transcription factors ;

(ii) Mismatch repair of DNA ;

(iii) Kinesin and Dynein ;

(iv) Aminoacylation.

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

6. Mention the role of 16S rRNA in initiation of translation in Prokaryotes. Briefly discuss the different steps of elongation and termination of eukaryotic translation. 10

7. What is m-RNA Processing? Why is it essential in eukaryotes? Differentiate the Prokaryotic translation process with that of eukaryotes. What are the up-regulatory transcription factors? 1+1+6+2

8. What are 'transcription factors'? Discuss the role of two transcription factors you have studied in regulating cellular function in health disease. 2+8

9. Write notes on : (any *two*) 5+5

(i) Receptor mediated endocytosis ;

(ii) Self-splicing of introns ;

(iii) Role of motor proteins ;

(iv) Deciphering the genetic code.