2012

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.

(Cell & Molecular Biology)

Group—A

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

(a) What is the role of GTP in Protein synthesis ?

(b) Point out the roles of DnaA, DnaB, DnaC and DnaG.

(c) State the functions of Kinesin and dynein.

(d) Mention the features of a signal sequence in Protein targeting.

(e) Write down two features of Base excision repair system.

(f) What is the role of cytochrome C in apoptesis?

(g) What is the function of gyrase in DNA replication?

(h) State the functions of Type I and Type II topoisomerases.

Group—B

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

2. Describe different mechanisms by which a proto oncogene is transformed into oncogene. 5

3. Discuss the molecular mechanism of flagellary movement. 5

4. What are transcription factors? State their role in transcription initiation. 1+4

5. Briefly discuss the role of cell cycle regulation in cancer development. 5

Group—C

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

6. Briefly discuss the role of SnRNPs in intron splicing mechanism. Discuss the mechanism of self-splicing of introns with suitable example.

6+4

7. What is a replisome? Draw and describe the essential components of the initiation process of DNA replication. Write down the structure and function of DNA Pol III.

2+4+4

8. What is aminoacylation? Briefly discuss the mechanism of translation initiation in eukaryotes. Write down the names and function of translational inhibitors.

2+5+3

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

(i) Mismatch repair system;

(ii) Intermediate filaments;

(iii) Deciphering the genetic code.

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