2013
M.Sc.
3rd Semester Examination
BIOCHEMISTRY
PAPER—BIC-303
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.

Illustrate the answers wherever necessary.

Answer all questions.

Group—A

1. Answer any five questions from the following : 2x5

(a) What is the difference between 'hormone receptor' and 'nuclear hormone receptor'? Give example.

(b) What is 'transgenesis' process?

(c) What is a 'satellite' DNA? What is the difference between its micro and mini form?

(d) What is 'supergene'? How far is it informative?

(Turn Over)
(c) What are 'genetic polymorphism' and 'length polymorphism'?

(f) Write the chromosomal basis and manifestations of Kleinfelter syndrome and Turner syndrome.

(g) How many different genes and proteins are there in human cells?

(h) Define an 'imaginal disc' with example.

**Group—B**

Answer any two questions from the following: 5x2

2. Mention the important roles of large 'non-informative' sequences of human DNA.

3. Describe 'alternate intron splicing' and 'alternate polyadenylation' processes in regulation of gene expression.

4. Describe 'Linkage map' and its use.

5. How does 'histone deacetylase' act in Chromatin packaging and gene expression?
Group—C

Answer any two questions from the following: 10×2

6. (a) What are the differences between structural and functional genomics? Elaborately distinguish with example.

(b) What is a 'metabolome'?

(c) How is the pharmacognomic study important in medicinal industry? 7+1+2

7. (a) What are the differences between 'basal level' and 'specialized' transcription factors?

(b) Discuss Mendel's experiment on character expression up to F2 generation. 4+6

8. (a) Discuss antisense technology used in gene silencing.

(b) Describe on 'nuclear orphan' receptor. What is INDEL? 5+(3+2)

9. (a) Briefly describe the steps of sex determination process of Drosophila.

(b) How are the maternal characters inherited by extranuclear pathway? 5+5