

CELL BIOLOGY & GENETICS - II

(Re-appear April - 2012)

Time : Three Hours]

[Maximum Marks : 75

Note : Attempt *one* question each from Section A, B, C and D carrying 15 marks each, and the entire Section E consisting of *ten* short answer type questions carrying 1½ marks each.

SECTION : A

1. What are Cell organelles ? Describe the structure and functions of the following :
(i) Chloroplast. (ii) Mitochondria. 15
2. Describe the ultrastructure of nucleus in Eukaryotic cell. Give its function also. 15

Section : B

3. Discuss the structure and functions of Plasma members. 15
4. Give an account of the structural organisation of Chromosomes. 15

Section : C

5. What is Cell cycle ? Give a comparative account of meiosis and mitosis. Comment upon the significance of meiosis. 15
6. Give Genetic code in detail. 15

Section : D

7. (a) Discuss Operon model of gene expression in brief. 15
(b) Differentiate between Spontaneous mutations and Induced mutations. 15
8. Write short notes on any *two* of following :
(a) Epistasis. (b) Linkage. 15
(c) Transposable elements.

Section : E

9. Explain briefly :
(a) Centromere. (b) Telomere.
(c) Functions of Nucleolus. (d) Amphiploidy.
(e) Nucleosome. (f) Balbin rings.
(g) Sat chromosomes. (h) Test cross.
(i) Genotypes. (j) Transductions. 10×1½=15