

Exam. Code: 0907  
Sub. Code: 6694

2021  
B.E. (Biotechnology) Third Semester  
BIO-314: Cell Biology and Genetics

Time allowed: 3 Hours

Max. Marks: 50

**NOTE:** Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

I. Write very short answer to following:-

- a) Three major features of B-form of DNA
- b) .....is the major cytoskeleton in skin and of..... ..type
- c) Large loop structure comprises.....part of a standard chromosome
- d) Super helical density of a DNA is -0.05. What that means?
- e) Function of p<sup>21</sup> protein is
- f) Transcriptionally active region of DNA forms.....chromatin
- g) Cell plates are involved in
- h) 15:1 dihybrid ratio refers to
- i) 47,XY,+21 genotype refers to
- j) Appearance of variegated coloured kernels in maize is typical example of.....  
(10x1)

**UNIT - I**

II. Using diagram, explain the working and application of various membrane active transporters. (10)

III. Give structural and functional details of intermediate filaments and microtubules. (10)

IV. Write a detailed note on any two of the following:-

- a) Lampbrush chromosome
- b) Nucleosome
- c) Cyclins (2x5)

**UNIT - II**

V. Describe principle, methodology and significance of deriving cot curve of an organism. (10)

VI. Taking an example, explain the types and mechanism of epistasis. How it differ from dominance. (10)

P.T.O.

(2)

- VII. a) Recombinant frequency is employed to prepare genetic maps of genes. How. Take any example.
- b) Write a note on structural abnormalities of chromosomes explaining two examples. (2x5)

*x-x-x*