:: 6693

8,2)

(8,2)

Exam. Code: 0907
Sub. Code: 6694

1129

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. I which is compulsory and selecting two questions from each Unit.

x-x-x

I. Write briefly:-

a) What is the difference between centrosome and centromere?

b) Which cytoskeletal filament you see in cilia and flagella?

c) Give example of disease due to ECM malfunction.

d) What is the significance of karyotyping?

e) Pattern baldness is a ——— inheritance pattern.

f) Give example of proteins regulating cell cycle.

g) Down syndrome is caused by ——— in human beings.

h) What is the relation of recombination frequency and linkage?

i) What is Punnett square?

j) What are plasmalogens? Where it is present? (10x1)

UNIT – I

II. a) Discuss different membrane models with diagram.

b) Cell membrane is asymmetric in nature. How this asymmetry is maintained?

c) Differentiate primary and secondary active transport. (4,3,3)

III. a) What is the importance of meiotic cell division? What are different stages of cell division? Discuss with proper diagram.

b) Write briefly on:-
i) Nucleosome
ii) Polytene and lampbrush chrosmosomes (4,3,3)

IV. a) What are the importance of various cytoskeletal filaments in cell?

b) Explain structural dynamicity in cytoskeletal filaments.

c) Cytoskeletal inhibitor drugs are used as ami cancer drugs. Explain with example. (4,42)

P.T.O.

UNIT – II

V. Give experimental evidences in detail linking the inheritance of genes chromosomes. (10)

VI. a) How maternal inheritance theory can be proved experimentally? (5)

b) Explain briefly:-

i) Factors for sex determination in animals

ii) Sex limited and sex influenced characters

(2x2½)

VII. a) Chromosomal aberration causes various diseases. Justify the statement. (5)

b) Write short notes on:-

i) C value paradox

ii) Penetrance and expressivity (2x2½)

x-x-x