



SN – 415

I Semester B.Sc. Examination, November/December 2017
(F + R/CBCS)
BIOTECHNOLOGY – I
Cell Biology and Genetics

Time : 3 Hours

Max. Marks : 70

Instruction : Draw neat labelled diagrams wherever necessary.

SECTION – A

- I. Write short notes on the following : (5×2=10)
- 1) Kappa particles
 - 2) Cell theory
 - 3) Incomplete dominance
 - 4) Vacuole
 - 5) Microtubules.

SECTION – B

- II. Answer **any four** of the following : (4×5=20)
- 6) Describe the structure and functions of golgi complex.
 - 7) Write a note on physical mutagens.
 - 8) Explain multiple allelism with a suitable example.
 - 9) What is sex determination ? Explain ZO-ZZ and ZW-ZZ systems.
 - 10) Describe prophase I of meiosis with neat labelled diagram.

SECTION – C

- III. Answer **any three** of the following : (3×10=30)
- 11) What is autopolyploidy ? Explain chromosomal evolution of wheat and cotton.
 - 12) What is osmosis ? Explain the different types of transportation across membranes.

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- 13) Describe the structural organization of chromosomes and add a note on heterochromatin and euchromatin.
- 14) a) Explain the mechanism of mitochondrial inheritance.
b) Write a note on Down's Syndrome.
- 15) Describe the structure and functions of nucleus.

SECTION - D

IV. Answer the following in a word or a sentence each :

(10×1=10)

- 16) What is co-transport ?
- 17) Expand DNA.
- 18) What are basal bodies ?
- 19) Who coined the term chromosome ?
- 20) Define back cross.
- 21) What are allosomes ?
- 22) Define Karyokinesis.
- 23) What is cytology ?
- 24) Who proposed the folded fibre model of chromosome ?
- 25) In which stage of prophase I chiasma formation begins ?