

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 ?
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