

I Semester B.Sc. Examination, December 2018

(CBCS Scheme)

BIOTECHNOLOGY

Cell Biology and Genetics

Time : 3 Hours

Max. Marks : 70

Instructions : 1) *All Sections are compulsory.*

2) *Draw neat labelled diagrams wherever necessary.*

SECTION – A

I. Write short notes on the following :

(5×2=10)

- 1) Ribosome
- 2) Cell cycle
- 3) Apoptosis
- 4) Allosomes
- 5) Human Karyotype.

SECTION – B

II. Answer **any four** of the following :

(4×5=20)

- 6) Enumerate the differences between mitosis and meiosis.
- 7) Describe double helix structure of DNA with labelled diagram.
- 8) State and explain Mendel's second law with a suitable dihybrid cross example.
- 9) Explain XX-XY method of sex determination in animals.
- 10) What is Down's syndrome ? Explain its features.



SECTION - C

III. Answer **any three** of the following :

(3×10=30)

- 11) Describe the fluid mosaic model structure of plasma membrane.
- 12) Explain the structure and functions of
 - a) Chloroplast
 - b) Endoplasmic reticulum.
- 13) Explain the structure of salivary gland chromosome with neat labelled diagram.
- 14) Illustrate supplementary gene interaction with suitable example.
- 15) a) Explain cytoplasmic inheritance in Paramecium.
b) Give an account of numerical aberrations in chromosomes.

SECTION - D

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

(10×1=10)

- 16) Name the scientist who proposed cell theory.
- 17) Who discovered Golgi bodies ?
- 18) What is sat-chromosome ?
- 19) Where do the Balbiani rings occur ?
- 20) What is cell senescence ?
- 21) Give the number carbon atoms present in deoxyribose sugar.
- 22) What is female heterogamy ?
- 23) Who proposed coupling and repulsion hypothesis ?
- 24) Name a chemical mutagen.
- 25) Give the chromosomal complement of Klinefelter's syndrome.