Reg. No. | | | | | | | | | | | |

B.M.S COLLEGE FOR WOMEN, AUTONOMOUS

BENGALURU – 560004

SEMESTER END EXAMINATION – JANUARY/FEBRUARY 2023

B.Sc. Biotechnology - I Semester

CELL BIOLOGY AND GENETICS

(NEP Scheme 2021-22 onwards F+R)

Course Code: BT1DSC01 **QP Code: 1019**

Duration: 2 ½ Hours **Max. Marks: 60**

PART- A

I. Answer any FOUR of the following **(4×2=8)**

1. Write the functions of Cytosol.
2. What is G-Phase?
3. Write the structural components of kinetochore.
4. Define Supplementary gene interaction.
5. Mention the symptoms of Cri-du-chat Syndrome.
6. What is Aneuploidy?

PART-B

II. Answer any FOUR of the following **(4×5=20)**

7. Explain the structure of mitochondria with a neat labelled diagram. Add a note on its functions.
8. Describe the structural organization and functions of cell wall.
9. Explain the different sub-stages of Prophase I of meiosis.
10. What is cytoplasmic inheritance? Explain the mechanism of cytoplasmic inheritance with respect to plastid inheritance in Mirabilis Jalapa.
11. What is sex determination? Explain ZO-ZZ and ZW-ZZ types.
12. Explain the mechanism of crossing over.

PART-C

III. Answer any FOUR of the following **(8×4=32)**

13. Explain the structure and functions of
    a) Nucleus
    b) Lysosome

14. Describe the structure of lamp brush chromosomes and salivary gland chromosome with a neat labelled diagram.
15. Write short notes on
    a) Fluid mosaic model
    b) Programmed cell death
16. State and illustrate the law of independent assortment.
17. Solve the given genetic problem
    i) A man with blood group A marries women with blood group AB. What will be the blood group of their probable children?
    ii) In rabbit black skin (B) is dominant over brown skin (b) and short hair(S) is dominant over long hair(s). If homozygous black short haired male is crossed with homozygous brown long haired female, what will be the genotype and phenotype of F1 and F2 offspring.
18. Define mutation and discuss different types of mutation.

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