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Registration Number:

Date & Session

**ST. JOSEPH’S UNIVERSITY, BENGALURU-27**

**M. Sc. BOTANY- IV SEMESTER**

**SEMESTER EXAMINATION – APRIL 2024**

**(Examination conducted in MAY/JUNE 2024)**

**BO 0123: CYTOLOGY, GENETICS AND MOLECULAR BIOLOGY**

**(For current batch students only)**

**Time - 2 hrs Max. Marks: 50**

This paper contains **ONE** printed page and **THREE** parts

Draw labeled diagrams wherever necessary

**A. Define/ Explain any FIVE of the following in few sentences each 5X2=10**

1. cis and trans golgi

2. cot curve

3. Missense and nonsense mutation

4. Hypostatic and epistatic genes

5. DNA glycosylase

6. Genetic drift

7. Why primers in DNA replication are always complementary to 3’ end of parent DNA?

**B. Write critical notes on any FIVE of the following 5X6=30**

8. Cell cycle and its regulation

9. Ultrastructure of mitochondria and its functions

10. Ultrastructure of eukaryotic chromosome

11. Differences between DNA replication in Prokaryotes and Eukaryotes

12. Lac operon and its regulation.

13. miRNA mediated gene silencing

14. A translated protein is having SKL as amino acid sequence at C terminal. Which organelle this protein should be targeted to and how?

**C. Give a comprehensive account on any ONE of the following 1X10=10**

15. a) Polymerism

 b) Sex determination in *Melandrium*

16. Mechanism of translation in Eukaryotes