

Register Number:

Date: /04/2020

**ST. JOSEPH’S COLLEGE (AUTONOMOUS), BANGALORE-27**

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

**SEMESTER EXAMINATION: APRIL 2020**

**BO 0118 – CYTOLOGY, GENETICS AND MOLECULAR BIOLOGY**

**Time - 2 ½ Hours Max. Marks - 70**

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

**Draw neat labeled diagrams wherever necessary**

**A. Define any TEN of the following 10x2=20**

1. Nucleolar organizer

2. Cis and Trans Golgi

3. Phragmoplast

4. C-value paradox

5.Base excision of DNA

6. Duplicate genes

7. Polymerism

8. Genetic drift

9.Coated vesicles

10. Bacterial RNA polymerases

11. Aminoacylation of tRNA

12. Wobble hypothesis

**B. Write critical notes on any FIVE of the following 5x6=30**

13. Telomere and its replication

14. Sex determination in *Melandrium*

15. Lac operon

16. Structure of nitrogenous bases of DNA & RNA

17. Post transcriptional modifications of mRNA

18. Structure & functions of mitochondria

19. Gene silencing and role of miRNA & siRNA in it

**C. Give a comprehensive account of any TWO of the following 2x10=20**

20. Mechanisms of cell cycle regulation: Role of cyclins & CDKs

21. a) Dominant epistasis

b) Cytoplasmic inheritance

22. a) Factors responsible for genetic variations

b) Sorting of proteins to mitochondria