

Date:

Registration number:

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

M.Sc. BOTANY - IV SEMESTER

SEMESTER EXAMINATION: APRIL 2022

(Examination conducted in July 2022)

**BO 0118 - Cytology, Genetics and Molecular Biology**

**Time - 2 ½ Hours Max. Marks - 70**

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

**Draw diagrams wherever necessary**

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

1. Centromere proteins

2. Mismatch repair of DNA

3. Lethal genes

4. Cistron, recon and muton

5.Sister chromatid cohesion

6. Redundancy of genetic code

7. Structure of purine nucleotides

8. Inhibitory genes

9.Cytoplasmic male sterility

10. *Cis* regulatory factors

11. Polyadenylation

12. Clathrin

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

13. Cell cycle check points

14. Cytoskeleton and its functions

15. Quantitative inheritance

16. RNA types and their functions

17. trp operon

18. DNA modifications and gene silencing

19. Endomembrane system

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

20. Structure and organization of eukaryotic chromosome

21. a) Sex determination in *Silene latifolia*

b) Hardy-Weinberg law

22. a) Enzymes of DNA replication in prokaryotes

b) Signal peptides in protein localization