

Registration Number:

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

**B.Sc. BOTANY – 6th SEMESTER**

**SEMESTER EXAMINATION: APRIL 2024**

**(Examination conducted in May / June 2024)**

**BO 6223: PLANT BIOTECHNOLOGY**

**(For current batch students only)**

**Time: 2 Hours Max Marks: 60**

**This paper contains TWO printed pages and THREE parts**

**\*Draw diagrams wherever necessary**

**PART-A**

**Answer any TEN of the following in few sentences. 2X5=10**

1. What is suspension culture?
2. Draw the flow chart of southern blotting procedure.
3. How will you use biotechnology for improvement of human health?
4. Define embryo culture.
5. Which hormones are used for shoot and root regeneration in PTC?
6. Define acclimatization.
7. Expand cDNA and write about its use in plant biotechnology.
8. List out the important regions of Ti Plasmid.
9. Define microinjection.
10. Define Bioremediation.
11. What are the benefits of patenting in plant biotechnology?
12. How will you dispose biohazardous materials?

**PART-B**

**Answer any FIVE of the following in detail. 6X5=30**

1. Draw a neat labelled diagram of pBR322 vector and explain it in detail?
2. What is an expression vector? Explain its structure with an example?
3. Describe the steps involved in Sanger’s method of gene sequencing?
4. Explain the *Agrobacterium* mediated transfer of gene into host cell?
5. Describe the production of herbicide tolerant plants with an example.
6. Give an account of a transgenic plant improved by rDNA technology for medicinal use.
7. Explain the role of bioethics in plant biotechnology.

**PART- C**

**Answer any ONE of the following in detail. 10X1=10**

1. Protein X is present in the plant sample. Explain the method you would use to detect and analyse the specific protein by a molecular technique.
2. Explain the method of somatic embryogenesis and its applications.