QP Code: U25C060

Reg. No : .....

Name : .....

ST MARY'S COLLEGE (AUTONOMOUS), THRISSUR-20

III SEMESTER (FYUGP) DEGREE EXAMINATIONS, OCTOBER 2025

B. Sc. Botany

BOT3CJ202 : PLANT ANATOMY AND ANALYTICAL TECHNIQUES

2024 Admission Onwards

(Credits: 4)

Time: 2 Hours **Maximum Marks: 70**

Section A

*Answer **all**. Each question carries **3** Marks.* ***(Ceiling: 24 Marks)***

1. State two functions of phloem.
2. Compare histogen theory and tunica-corpus theory of shoot apex.
3. Define plant anatomy. How does it differ from plant morphology?
4. Compare the anatomical adaptations of hydrophytes and xerophytes with suitable examples.
5. Mention two differences between autumn wood and spring wood.
6. Define molarity with an example.
7. Differentiate SEM from TEM.
8. List any two applications of fluorescent spectroscopy.
9. Mention two biological applications of IR spectroscopy.
10. Differentiate between homogenization and centrigugation.

Section B

*Answer **all**. Each question carries **6** Marks.* ***(Ceiling: 36 Marks)***

11. Compare apical, intercalary, and lateral meristems with examples.
12. Analyse the role of various excretory materials in plant growth.
13. Define anomalous secondary thickening. Give one example of a plant showing it.
14. Explain how knots and shakes affect the strength of timber.
15. Describe the applications of light microscopy in biological studies with suitable examples.
16. Describe the working principle of a pH meter.

Turn Over

17. Explain why UV–Visible spectroscopy is commonly used in the analysis of plant pigments. Mention atleast two examples.
18. Critically evaluate the principle and working of Thin-Layer Chromatography (TLC).

Section C

*Answer **any one**. Each question carries **10** Marks* ***(1x10=10marks)***

19. How does the origin and activity of cambium differ in dicot stem and dicot root during secondary growth?
20. Discuss the principle and applications of the following spectroscopic techniques in plant science:Infra Red spectroscopy, Fluorescent spectroscopy and Mass spectroscopy.

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