QP Code: U25C035

Reg. No : .....
Name : .....

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

III SEMESTER (FYUGP) DEGREE EXAMINATIONS, OCTOBER 2025
BOT3MN202 : ESSENTIAL OILS OF AROMATIC PLANTS
2024 Admission Onwards
(Credits: 4)

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

Section A

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

1. Differentiate aromatic and non-aromatic plants with suitable examples.
2. Explain how different plant parts are used in essential oil extraction.
3. Critically evaluate the advantages and limitations of traditional essential oil extraction methods versus modern techniques.
4. Compare the role of the mobile phase in HPLC and GC.
5. List any eight factors that affect the chemical composition of essential oils.
6. Evaluate the potential of essential oils as alternatives to synthetic antimicrobial and antioxidant agents in medicine and food industries.
7. Evaluate the effectiveness of integrated pain management in musculoskeletal disorders.
8. Discuss the way in which essential oils can be incorporated into hair care formulations to promote scalp and hair health.
9. Why is steam inhalation an effective method of administering essential oils for respiratory issues?
10. Explain aromatherapy and the basic principle behind it.

Section B

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

11. Define solubility. Explain why essential oils are not soluble in water and mix well with carrier oils.
12. What do you mean by stability of essential oils? Analyze the impact of light, temperature and packaging material on the chemical stability of essential oils.

Turn Over

13. Explain the principle of IR spectroscopy. Discuss its applications in essential oil analysis.
14. Analyse toxicology and safety of essential oils in terms of dosage and toxicity levels, allergic reactions and contraindications.
15. How community-based programs contribute to conservation and ethical sourcing of aromatic plants? Illustrate with examples.
16. Describe the global market trends of essential oils.
17. Critically evaluate the role of regulatory compliance and certifications in promoting sustainable and ethical essential oil industry practices.
18. Propose a checklist of quality control steps that a laboratory should follow to ensure the authenticity of essential oils.

Section C

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

19. Suggest a suitable essential oil and how it can be applied simultaneously in therapeutic practice, cosmetic/food industries, and as a natural pest control agent. Provide appropriate justification for each application.
20. Describe in detail the different methods of essential oil extraction. Compare their principles, advantages, limitations, and applications with suitable examples.

****