QP Code: U25B041

Reg. No : .....

Name : .....

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

II SEMESTER (FYUGP) DEGREE EXAMINATION, MARCH 2025

B Sc Botany

BOT2MN102 : SECONDARY METABOLITES AND BIOFUELS

2024 Admission Onwards

(Credits: 4)

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

Section A

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

1. Compare the antioxidant mechanisms of Vitamin C and Vitamin E. [BTL4]
2. What are the mechanisms by which phytochemicals induce skin care action? [BTL4]
3. Describe a bioreactor and its components. [BTL1]
4. Discuss the importance of sponges as the sources of marine secondary metabolites. [BTL3]
5. How would you utilize microbial pigments in industrial applications? [BTL3]
6. How farmers can use sugarcane bagasse (a byproduct) to produce bioethanol instead of burning it as waste? [BTL3]
7. How can phytoremediation techniques be applied to restore polluted soil? [BTL3]
8. Identify the tools used for the genetic modification of plants and microbes. [BTL3]
9. How does curcumin work to inhibit cancer cell growth? [BTL2]
10. Define hot extraction and cold extraction. [BTL1]

Section B

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

11. Compare and contrast the importance of antibiotics and mycotoxins from mircobial sources. [BTL4]
12. Define Carbon foot print. Explain the different strategies for reducing Carbon Footprints. [BTL3]
13. How does NMR differ from Mass spectrometry? [BTL3]
14. How do you use the technique of Gas chromatography (GC) for biofuel analysis? [BTL4]

Turn Over

15. Enumerate the functions of secondary metabolites. [BTL5]

16. State the role of phytochemicals as bioherbicides and plant growth regulators. [BTL3]

17. Explain the different types of biofuels. Mention the different properties of various biofuels. [BTL2]

18. How would you categorize plant-derived drugs based on their therapeutic applications? [BTL3]

Section C

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

19. Discuss the various feedstocks for biofuel production. [BTL2]

20. Explain the process of anaerobic digestion and biogas production. Add a note on the applications of biogas. [BTL3]

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