

Register No.: Name:

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

SEVENTH SEMESTER B.TECH DEGREE EXAMINATION (R), DECEMBER 2023**FOOD TECHNOLOGY****(2020 SCHEME)****Course Code : 20FTT441****Course Name: Spices and Plantation Crops Technology****Max. Marks : 100****Duration: 3 Hours****PART A*****(Answer all questions. Each question carries 3 marks)***

1. What are the key chemical constituents found in coffee beans that contribute to their flavor and aroma?
2. Where does tea naturally occur, and which regions are known for tea cultivation?
3. Name some value-added products that can be manufactured from cashew.
4. Why is fermentation of cocoa beans important in the production of chocolate?
5. What are spices and condiments, and what is their historical significance in various cultures and cuisines?
6. What are encapsulated oils, essential oils, and oleoresins in the context of spices and condiments?
7. Name the chemical constituents are responsible for the volatiles in nutmeg and vanilla.
8. What are the specific techniques or equipment involved in the production of essential oils and oleoresins from spices?
9. Define "quality" in the context of spices and plantation crops, and why is it essential in the industry?
10. What are some of the international quality specifications and standards that govern the trade of spices and plantation crops?

PART B***(Answer one full question from each module, each question carries 14 marks)*****MODULE I**

11. a) Explain the chemistry of tea leaves, including the compounds responsible for its flavor, aroma, and health benefits. (10)
b) What is instant tea, and what steps are involved in its manufacture? (4)

OR

12. a) Explain the roasting process and the chemical reactions responsible for the browning of coffee beans. (8)

- b) How does the addition of chicory impact the chemistry and taste of coffee? Why is it used in some coffee blends? (6)

MODULE II

13. a) How are chocolates manufactured from cocoa, and what are the key steps in the process? (9)
- b) What quality control measures are employed in the chocolate industry to ensure consistent product quality? (5)

OR

14. Discuss the various stages of coconut processing, from harvesting to end products. What are the key products derived from coconuts? (14)

MODULE III

15. a) Outline in detail how spices and condiments are classified. (8)
- b) Elaborate on the role of research stations and organizations in the promotion and development of the spices and condiments industry? (6)

OR

16. a) Describe the various types of spice blends and extractives used in culinary applications. How are they prepared, and what is their role in enhancing flavor? (8)
- b) Discuss the significance of salad dressings and seasonings in modern cuisine. (6)

MODULE IV

17. a) Describe the methods used in the manufacture of oleoresins and essential oils from pepper and chilli? What are the key steps in these processes? (10)
- b) What is the chemistry behind the volatiles of pepper and chilli? (4)

OR

18. a) What are the chemical constituents of the volatiles found in cardamom and turmeric, and how do these compounds impact their flavors and fragrances? (10)
- b) What are the critical factors in the methods employed for the production of oleoresins and essential oils from spices? (4)

MODULE V

19. Describe the various types of machineries used in spice processing, from cleaning to grinding and packaging. What are their roles in maintaining quality? (14)

OR

20. a) Describe the roles and functions of organizations like the American Spice Trade Association (ASTA) and the European Spice Association (ESA) in ensuring and promoting quality within the industry. (8)
- b) Discuss the importance of labeling and traceability in spice and plantation crop packaging, particularly for quality control and consumer information. (6)
