

Register No:

Name:

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

EIGHTH SEMESTER B.TECH DEGREE EXAMINATION(R), MAY 2024**Food Technology
(2020 SCHEME)****Course Code : 20FTT434****Course Name : By-product Utilization in Food Industry****Max. Marks : 100****Duration:3 Hours****PART A***(Answer all questions. Each question carries 3 marks)*

1. What are the primary methods used to stabilize rice bran?
2. Explain the nutritional significance of rice bran and its potential health benefits for human consumption.
3. What innovative methods are being employed to maximize the utilization of waste from vinegar production?
4. What are the primary sources of waste generated in fruit and vegetable industries?
5. How does fish protein hydrolysate differ from fish liver oil in terms of nutritional content?
6. How are fish by-products utilized in various industries?
7. How does a biomass briquetting machine contribute to fuel briquette production?
8. Describe two key processes used in an effluent treatment plant.
9. How can communities mitigate the social impacts of sludge disposal practices?
10. Describe a chemical method employed in wastewater treatment and its purpose.

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

11. Critically analyze the challenges faced by the food industry in implementing by-product utilization strategies and propose solutions to overcome these challenges. 14

OR

12. Discuss the processes of pyrolysis and gasification as they apply to rice husk for the production of energy and other valuable products. Evaluate their respective advantages and disadvantages and consider their environmental impacts. 14

MODULE II

13. Describe the process of citric acid production from fruit waste, highlighting the key steps involved and the factors influencing its efficiency. 14

OR

14. Describe the production of Single Cell Protein (SCP) from food waste utilization, highlighting the process steps and the potential benefits of this approach. 14

MODULE III

15. Analyze the production, benefits, and challenges of fish liver oil, specifically focusing on cod liver oil. Include in your discussion the impact on consumer health and the environment, and suggest strategies for addressing these challenges. 14

OR

16. Analyze the potential applications of chitin and chitosan derived from food waste in various industries. Discuss the sustainability benefits and challenges associated with scaling up these applications. 14

MODULE IV

17. What are the key considerations in preparing a feasibility report for food industries intending to utilize food waste and by-products? 14

OR

18. Describe the production process of fuel briquettes from coconut waste, highlighting the key steps involved and the factors influencing the quality and efficiency of the process. 14

MODULE V

19. Explain the design, operation, and importance of an effluent treatment plant (ETP) in the food industry, highlighting its role in ensuring environmental compliance and sustainable wastewater management. 14

OR

20. Evaluate the challenges and opportunities associated with wastewater treatment in the food industry, considering technological advancements, regulatory requirements, and sustainability goals. 14
