

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI - 600 086
(For candidates admitted from the academic year 2016 – 2017 & thereafter)

B.Voc. DEGREE EXAMINATION - APRIL 2024
FOOD PROCESSING AND QUALITY CONTROL
SIXTH SEMESTER

COURSE : MAJOR CORE
PAPER : WASTE MANAGEMENT IN FOOD INDUSTRY
SUBJECT CODE : 16VF/VM/WM66
TIME : 5 HOURS

MAX. MARKS: 100
(Theory: 50 marks + Practical: 50 marks)

SECTION - A

Answer all the questions:

(20x1 = 20)

I Choose the correct answer:

1. The rotating biological contactors disc rotates at _____ rpm
a) 2-5 b) 1-3 c) 8-10 d) 6-8
2. Wastewater from seafood-processing operations can be very high in _____
a) BOD b) COD c) Nitrogen d) TSS
3. The relationship of the settling velocity to the detention time and basin depth is _____
a) $V_c = \text{Depth} + \text{Detention time}$ b) $V_c = \text{Depth} - \text{Detention time}$
c) $V_c = \text{Depth} * \text{Detention time}$ d) $V_c = \text{Depth} / \text{Detention time}$
4. Biological treatment involves the use of _____ to remove dissolved nutrients from a discharge.
a) chemicals b) biopolymers c) bio composites d) microorganisms
5. Waste management in food processing unit is essential _____
a) to prevent from causing any damage to environment b) to gain profits
c) alternate method for disposal d) to increase popularity

II Fill in the blanks:

6. Environment Protection Act was formulated for _____
7. Almost 85–95% of organic load removals can be achieved in _____ systems
8. A commonly used coagulant is _____
9. Oil cakes is the byproduct obtained from _____
10. ISO 140001 is series of _____ standards

III Match the following:

- | | |
|-------------------------|----------------------------|
| 11. Anaerobic digestion | A. Dairy waste |
| 12. Protozoa | B. Oil and Fish processing |
| 13. Lactobacillus | C. Bakery industries |
| 14. FOG | D. Methane |
| 15. Respiratory illness | E. Composting |

IV. EXPAND THE FOLLOWING:

16. What is coagulation?
17. What is Rotating biological contractors(RBC)?
18. What is incineration?
19. What is sedimentation?
20. What is aerated lagoons?

SECTION - B**Answer any SIX questions:****(6 x 3 = 18)**

21. Explain the importance of estimation of BOD for waste water.
22. What is vermi- composting? Explain the steps involved in the process.
23. Why tertiary treatment of effluent is important? Explain
24. What are the byproducts obtained from diary industries?
25. What are trickling filters? Where it is used?
26. Write about any three characteristics of waste waters.
27. Define the following terms:
(i) DO (ii) FOG (iii) BOD
28. Write in brief on the reverse osmosis process?
29. Brief about the byproducts generated in dairy industry.
30. Explain the following characteristics of water
(i) turbidity (ii) pH (iii) microbiology

SECTION - C**Answer any TWO questions:****(2 x 6 = 12)**

31. What is anaerobic biological treatment? Draw the scheme of reactions produced during the anaerobic treatment. (2+4)
32. Discuss the primary and secondary treatment of waste water from meat and poultry industries. (3+3)
33. Explain the different methods used for waste disposal. Explain in detail the ideal methods to treat food industrial wastes.
34. Elucidate the key elements of ISO 14000.
