

QP CODE: 22001852



Reg No : .....

Name : .....

**M Sc DEGREE (CSS) EXAMINATION, AUGUST 2022**

**Fourth Semester**

M Sc FOOD TECHNOLOGY AND QUALITY ASSURANCE

**Elective - FQ820403 - BYPRODUCT UTILIZATION AND WASTE MANAGEMENT**

2019 ADMISSION ONWARDS

7D7B8F6A

Time: 3 Hours

Weightage: 30

**Part A (Short Answer Questions)**

*Answer any **eight** questions.*

*Weight **1** each.*

1. What are pre consumer and post consumer food waste?
2. How will you characterize food waste in food processing operations?
3. Describe the presumptive test for detection of coliforms in waste water.
4. Write a short note on bottle dilution method.
5. What do you mean by screening of effluent?
6. Differentiate between oxidation ponds and lagoons.
7. List by products of corn dry milling process.
8. What is sweet whey? Give its composition.
9. What are the different types of rendering?
10. What is fish silage?

(8×1=8 weightage)

**Part B (Short Essay/Problems)**

*Answer any **six** questions.*

*Weight **2** each.*

11. How is the concept of 4R principle used in the management of waste?
12. Write in detail the methods used to measure insoluble/filterable contained in waste water.
13. Discuss the management of pesticide residue in waste. What are the instruments used to measure pesticide residues in waste water?
14. Describe the stages in chemical aided sedimentation?





15. Narrate the process of phosphate removal from waste water.
16. Describe reverse osmosis process applied for the tertiary treatment of waste water.
17. How is fish meal prepared? Give its uses.
18. Give an account of characterisation of by products from meat industry.

(6×2=12 weightage)

**Part C (Essay Type Questions)**

*Answer any **two** questions.*

*Weight **5** each.*

19. Write in detail the methods for determining BOD and COD in waste water.
20. With a neat labelled sketch, describe the construction and biological process in trickling filters. Give its advantages and disadvantages.
21. Give a detailed account of preliminary and primary treatment methods used in waste water treatment
22. Elaborate in detail the characterisation and utilisation of by-products from meat industry.

(2×5=10 weightage)

