D 13861 **(Pages : 3)** **Name.....**

Reg. No.....

THIRD SEMESTER B.VOC. DEGREE EXAMINATION, NOVEMBER 2021

Fish Processing Technology

SDC 3AQ 09—FREEZING TECHNOLOGY IN SEAFOOD PLANTS

Time : Three Hours Maximum : 80 Marks

Section A

Answer **all** *questions.*
Each question carries 1 *mark.*

1. It is important to prepare food safety because :
   a) It helps to prevent food poisoning.
   b) Prepared food looks better.
   c) Prepared food tastes better.
2. Which of the following does bacteria need to assist it to grow and multiply :
   a) Water. b) Food.
   c) Warm temperatures. d) All of the above.
3. In a place of work, the best way to dry your hands after washing them is to :
   a) Use a cotton towel. b) Just shake excess water away.
   c) Use a air dryer. d) Use a paper towel.
4. At which temperature does water freeze ?
   a) 10 Degree Celsius. b) 0 Degree Celsius.
   c) 32 Degree Celsius. d) 212 Degree Celsius.
5. Sterilization by steam at 100 °C or higher for at least 150 minutes :
   a) Autoclaving. b) Blanching.
   c) Sulfuring. d) Salting.
6. Amount of time a food can be stored and remain fresh :
   a) Radura. b) Irradiation.
   c) Danger Zone. d) Shelf life.

Turn over

7. A fungus that causes fermentation

   a) Bacteria. b) Mold.

   c) Yeast. d) Enzymes.

8. Which of the following sentence Is true with respect to food storage/preservation ?

   a) Each food type has a potential storage life.

   b) The mechanical abuse that food has received during storage/distribution does not affects its storage stability.

   c) All of the mentioned.

   d) None of the mentioned.

9. Frozen storage is generally operated at temperature of :

   a) – 0°C. b) – 18 °C.

   c) – 50 °C. d) – 60°C.

10. Tocopherol is an example of :

    a) Anticaking agent. b) Flavouring agent.

    c) Antioxidant. d) None of the above.

(10 × 1 = 10 marks)

Section B

Answer any **eight** *questions.*
Each question carries 2 *marks.*

11. What is the difference between slow freezing and quick freezing ?
12. Different types of freezer.
13. What is a spray freezer ?
14. What are the chemical changes occurring in lipids due to freezing ?
15. What is an antioxidant ?
16. What are the changes in texture occurring during freezing and frozen storage ?
17. What is fish fillet ?
18. Different methods of thawing frozen fish.
19. What are the safest ways to thaw frozen foods ?

20. What are the advantages and disadvantages of thawing ?

21. What is Cryopreservation ?

22. What are the steps involved in freezing of fishery products ?

(8 × 2 = 16 marks)

Section C

Answer any **six** *questions.*
Each question carries 4 *marks.*

23. What are whole, FIL, PD, PUD and CPD. Explain the process of each ?

24. What are the physical and chemical changes during frozen storage of fishes ?

25. What are the changes in texture, taster, odour, occurring during freezing and frozen storage ?

26. What are the sensory change occurring during freezing and frozen storage ? What is the effect of post-mortem condition on sensory qualities of fish ?

27. Explain slow freezing.

28. Freezing curve of fish.

29. Crystallization and recrystallization of water

30. What are the chemical changes occurring in lipids, proteins and nucleotides due to freezing ?

31. What are "green" shrimp ?

(6 × 4 = 24 marks)

Section D

Answer any **two** *questions.*
Each question carries 15 *marks.*

32. What are the different types of freezing methods ? Explain.

33. Describe arrangements within the cold storage, handling and stacking systems, space requirements, precautions to reduce temperature increase in a cold storage.

34. Explain the process of freezing of fishes.

35. Explain :

    a) Freeze burn ;

    b) Recrystallisation ;

    c) Rigor mortis.

(2 × 15 = 30 marks)