



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION – FOOD CHEMISTRY AND FOOD PROCESSING

THIRD SEMESTER – NOVEMBER 2017

16PFP3MC01 - DAIRY AND BEVERAGE PROCESSING

Date: 01-11-2017
Time: 09:00-12:00

Dept. No.

Max. : 100 Marks

Part A

Answer ALL the questions.

(10 x 2 =20 marks)

1. Differentiate between natural and developed acidity of milk.
2. What is whey?
3. State the reasons for a quality control system in the dairy industry.
4. How many kg each of 46% cream and 5% milk will be required to make 600 kg of a mixture testing 4 % fat?
5. What is the percent fat lost in skim milk in a given the fat percentages in cream , milk and skim milk being 39 % , 5% and 1.5% respectively ?
6. Mention any four quality control tests on milk reception at the processing plant.
7. Classify milk quality based on the bacterial count.
8. Distinguish the two types of coffee beans
9. What is rose wine?
10. Mention the role of malted barley and hops in beer manufacture.

Part B

Answer any EIGHT questions.

(8 x 5= 40 marks)

11. i. Briefly discuss electrical conductivity of milk. (2 marks)
ii. Assuming an average freezing point of -0.55°C calculate the percentage of added water in the test sample with the following data: (3 marks)
Total solids (TS) 9.5 % , T the observed freezing point depression of the test sample is -0.49°C .
12. Write short notes on the viscosity and color of milk.
13. Describe the buffering capacity of milk.
14. Discuss i. Methods in Dairy effluent treatment. (3 marks)
ii. Merits of the CIP system. (2 marks)
15. What contributes to the flavour of cow's milk? Give a brief account on the factors affecting the flavour of cow's milk.
16. a. Calculate the yield of cream given the following data:
 $M = 380 \text{ kg}$, $F_m = 5\%$, $F_s = 2.0\%$, $F_c = 32\%$

b. Calculate the yield of skim milk given the following data:

$$M = 400 \text{ kg, } F_m = 4\%, F_s = 1.5\%, F_c = 45\%$$

17. Briefly explain the natural sources of water utilized for human consumption.
18. What is acidophilus milk? Illustrate the manufacturing process and the fortification adopted to overcome the losses during the process.
19. Briefly explain the steps involved in beer manufacture.
20. Give a brief account on the imitation of dairy products.
21. Discuss the factors that affect the storage of wine.
22. Briefly discuss the journey of coffee bean to coffee powder.

Part C

Answer any FOUR questions.

(4 x 10 = 40 marks)

23. Elaborate on the oxidation reduction potential of milk.
24. Discuss milk collection, transport and sampling as important activities in dairy processing.
25. Explain in detail the manufacture of white wine from red grape vineyard.
26. Illustrate the fate of raw milk to milk products. Briefly explain the primary processing steps of fluid milk before reaching the consumer.
27. What are alcoholic beverages? Illustrate the classification with a flowchart. Briefly explain the two methods of processing alcoholic beverages.
28. Discuss the processing steps involved in the manufacture of the three different types of tea from the tea leaves.

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