CLASS: IMSC   SEMESTER : VI
BRANCH: FT   SESSION : SP/19

SUBJECT: IMF6001 DAIRY TECHNOLOGY

TIME: 3.00 Hrs.   FULL MARKS: 60

INSTRUCTIONS:
1. The question paper contains 7 questions each of 12 marks and total 84 marks.
2. Candidates may attempt any 5 questions maximum of 60 marks.
3. The missing data, if any, may be assumed suitably.
4. Before attempting the question paper, be sure that you have got the correct question paper.
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

Q.1(a)	What are the salient features of three phases of Operation Flood?	[2]
Q.1(b)	What are the chemical and microbiological causes of off flavor in milk?	[4]
Q.1(c)	Discuss in detail Physical and chemical properties of milk.	[6]
Q.2(a)	Define Standardized milk, Toned milk, Double toned, Skimmed milk, and Full cream milk.	[2]
Q.2(b)	What are the causes of use and the methods of detection of the following adulterants in milk: (i)melamine (ii) formalin (ii) sodium bicarbonate (iv) salt	[4]
Q.2(c)	Describe Milk reception, weighing, sampling, chilling and storage of raw milk. List the platform tests.	[6]
Q.3(a)	What are various chemicals and sanitizers used for CIP of Dairy plant?	[2]
Q.3(b)	Distinguish between AMF and Ghee. Write technical notes on (i) Ghee making using pre-stratification method (ii) Refining of AMF	[4]
Q.3(c)	Describe with flow sheet continuous method of butter making. 10,000kg of 7% milk is received. 40% cream is separated. Skim milk tests 0.1%. Buttermilk tests 0.5%. Miscellaneous fat losses are 0.5% of total fat received in whole milk. Butter contains 80.5% fat. How much butter is packed for sale ? What is the percentage overrun? [Amount of Buttermilk = kg cream – 1.20 x fat in cream Weight allowance is 10 g for 1 kg pack]	[6]
Q.4(a)	What are tests for whipped cream?	[2]
Q.4(b)	Describe (i) semi-open and hermetic cream separator (ii) In container sterilization,	[4]
Q.4(c)	Sketch the flow paths in Cooling, Regeneration and pasteurization in Plate Heat Exchanger in Dairy plant, Define % Regeneration. Describe process of UHT pasteurization with direct steam injection. A holding time of 15 sec is required in a pasteurization plant with a capacity of 10 000 l/h. The inner diameter of the pipe to be used is 48.5 mm. Calculate the length of the holding tube, with the efficiency factor of 0.85.	[6]
Q.5(a)	Sketch and describe Contherm-Convap System.	[2]
Q.5(b)	What are different types of khoa? Sketch equipment and explain continuous khoa making process.	[4]
Q.5(c)	Sketch flow diagram mentioning process parameters in each step, for the production of set, stirred and drinking yoghurt. How is Chakka made?	[6]
Q.6(a)	Distinguish between Icecream and Kulfi.	[2]
Q.6(b)	Sketch flow diagram, describe the process for ice cream making and explain purpose of each step. What emulsifier and stabilizer used for ice cream?	[4]
Q.6(c)	State in detail steps involved in cheese making. What are different types of Rennet from plant and animal origin, used for cheese making? Sketch a continuous system for making cheddar cheese.	[6]
Q.7(a)	What is a malted drink?	[2]
Q.7(b)	What are different Non Dairy Milk Alternatives? Compare their characteristics and use.	[4]
Q.7(c)	Give flow sheet for condensed milk preparation. What are the methods of preparation of powder milk? Describe methods for instant milk powder manufacture.	[6]

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