

ASSIGNMENT BOOKLET

DIPLOMA PROGRAMME IN DAIRY TECHNOLOGY (DDT)

Academic Session : 2012



**School of Agriculture
Indira Gandhi National Open University
New Delhi - 110068**

Dear student,

As you are aware that for theory, the weightage to the term-end examination will be 80% and the weightage to the continuous assessment will be 20%. The continuous assessment is in form of assignments. There is one assignment for each course i.e. total eight assignments for the programme. Each assignment will be of 50 marks which ultimately will be converted to have weightage of 20 % of theory. Instructions to format your assignments are as follows:

Instructions to format your assignments

Before attempting the assignments, please read the following instructions carefully.

1. On top of the first page of your answer sheet, please write the details exactly in the following format.

Enrollment no:.....
Name:.....
Address:.....
.....
.....

Course Code:.....
Course Title:.....
Study Centre:..... Date:.....
(Name and Code)

Please follow the above format strictly to facilitate evaluation and to avoid delay.

2. Use foolscap size paper for writing your answer.
3. Leave 4cm margin on the top, bottom and left of your answer sheet.
4. Clearly indicate question no. and part of the question being solved while writing answers.

Assignment No.	Date of Submission
Assignment 1 (BPVI-011) and 2 (BPVI-012)	Before 31 st October
Assignment 3 (BPVI-013) and 4 (BPVI-014)	Before 31 st December
Assignment 5 (BPVI-015) and 6 (BPVI-016)	Before 31 st January
Assignment 7 (BPVI-017) and 8 (BPVI-018)	Before 28 th February

5. Assignments have to be sent to the coordinator of your study centre.
6. **We strongly suggest that you should retain a copy of your assignment responses.**

Wishing you good luck.

Assignment – 1
Course Code : BPVI – 011

Maximum Marks – 50

Note: Attempt all the five questions.

- Q.1 (a) What is the importance of dairying in our country? State the major achievements of Operation Flood Programme. (5)
- (b) What are the advantages of cooperative system and explain three tier structure of Dairy Cooperatives. (5)
- Q.2 (a) Define breed and describe the general characteristics of dairy cattle breeds. Explain the difference between selective breeding and cross breeding. (5)
- (b) What is the importance of clean milk production? Explain the factors affecting clean milk production at farm level. (5)
- Q.3 (a) Describe different methods of milk procurement along with merits and demerits of each. (5)
- (b) What are different milk pricing methods? Explain the most common method used among the dairy cooperatives. (5)
- Q.4 (a) Give the composition of cow and buffalo milk. What is colostrum and its importance? Explain why milk is essential for infants. (5)
- (b) Describe important physico-chemical properties of milk. (5)
- Q.5 (a) Describe the factors influencing the growth of micro-organisms. (5)
- (b) What are different methods used for preservation of milk and dairy products? (5)

Assignment – 2
Course Code: BPVI – 012

Maximum Marks – 50

Note: Attempt all the five questions.

- Q.1 (a) Enlist type of materials used in fabrication of dairy equipment. Make a product flow line diagram for a dairy plant receiving 10,000 litre milk and manufacturing market milk and butter. (5)
- (b) Describe factors considered for selecting location of a dairy plant. (5)
- Q.2 (a) Identify major components of vapour compression refrigeration system and show the arrangement with the help of a diagram. (5)
- (b) Explain different methods used for chilling milk at farm level? (5)

- Q.3 (a) Explain the working of a steam boiler with the help of a diagram. (5)
 (b) Enlist important boiler mountings and accessories. (5)
- Q.4 (a) Explain the working principle of an induction motor. (5)
 (b) Explain the working principle of a transformer. (5)
- Q.5 (a) What is water hardness? Give the methods used for water softening. (5)
 (b) Explain how does a rainwater harvesting system work. (5)

Assignment – 3
Course Code : BPVI – 013

Maximum Marks – 50

Note: Attempt all the five questions.

- Q.1 (a) Explain the steps involved in organisation of a milk collection system. (5)
 (b) Enlist the equipment and devices to be placed on a reception dock of a large dairy plant. (5)
- Q.2 (a) What is creaming efficiency? What are the factors affecting creaming efficiency? (5)
 (b) Draw schematic diagram of HTST Pasteurizer showing important parts and flow of milk. (5)
- Q.3 (a) Define homogenized milk and explain theories of homogenization. How will you judge the efficiency of homogenization? (5)
 (b) What are the advantages and disadvantages of distribution of milk in multiple and single use packages? (5)
- Q.4 (a) What is UHT processing? Explain the working of Direct Heating UHT system. (5)
 (b) Define special milks. Give the flow diagram for preparation of toned and flavoured milk. (5)
- Q.5 How does cleaning take place? Describe the characteristics of good detergent. (10)
 How do we assess effectiveness of cleaning and sanitization?

Assignment – 4
Course Code : BPVI – 014

Maximum Marks – 50

Note: Attempt all the five questions.

- Q.1 (a) What factors influence the fat percentage in cream and losses of fat in skim milk? (5)
- (b) Calculate skimming efficiency of a centrifugal cream separation which produces 9.0 kg of cream of 50% fat from 100 kg of milk testing 5.0% fat. What are different processes treatments given to different types of cream. (5)
- Q.2 (a) List out some of the common uses of cream in food industry. (5)
- (b) Describe various defects which develop in cream during its storage. Give their control measures also. (5)
- Q.3 (a) Define churning of butter and give the flow diagram for manufacture of creamery butter. (5)
- (b) Write the formulae for: (5)
- i. Calculating yield of butter.
 - ii. Calculation of over-run in butter.
 - iii. Amount of water to be added for moisture adjustment in butter.
 - iv. Calculating quantity of salt in butter.
 - v. Calculating quality of neutralizer
- Q.4 (a) What is the principle of manufacture of ghee? List different method of manufacturing of ghee. (5)
- (b) Enumerate factors affecting composition and analytical constants of ghee. (5)
- Q.5 (a) Name the adulterants most commonly used in Ghee. Describe the tests used to detect these adulterants. (5)
- (b) What are the factors affecting keeping quality of Ghee and how the same can be increased? (5)

Assignment – 5
Course Code : BPVI – 015

Maximum Marks – 50

Note: Attempt all the five questions.

- Q.1 (a) Name different types of Khoa available in the market. Give gross chemical composition of khoa from buffalo milk and cow milk. Enumerate the factors affecting quality and yield of khoa. (5)
- (b) Name various khoa based sweets. Describe the method for preparation of burfi. (5)
- Q.2 (a) Give the flow diagram for manufacture of cow milk Chhana. Describe the factors which influence the quality of Chhana. (5)
- (b) Define paneer. Enumerate the factors affecting quality of paneer. How the shelf life of paneer can be extended? (5)
- Q.3 (a) Explain the process and steps involved in the manufacture of evaporated milk. (5)
- (b) What are the common defects of concentrated milk? Give their causes and their preventive measures. (5)
- Q.4 (a) Describe the method of manufacture of spray dried milk powder. (5)
- (b) Write quality attributes and common defects of dried milk powders. (5)
- Q.5 (a) What is infant food? Describe the virtues of human milk. (5)
- (b) How malted milk food is manufactured? Give the BIS standards for malted milk food? (5)

Assignment – 6
Course Code : BPVI – 016

Maximum Marks – 50

Note: Attempt all the five questions.

- Q.1 (a) What is starter culture? Describe the role of starter culture in the manufacturing of fermented dairy products. What are characteristics of a good starter culture (5)
- (b) What are nutritional advantages of fermented foods? (5)
- Q.2 (a) Define Yoghurt. Give the flow diagram for manufacture of Yoghurt. (5)
- (b) What is Shrikhand? Give the traditional method of manufacture of shrikhand. (5)

- Q.3 (a) Describe the steps and processes involved in manufacture of cheddar cheese. (5)
- (b) Give the flow diagram for manufacture of mozzarella cheese from buffalo milk using culture. (5)
- Q.4 (a) Describe different steps involved in manufacture of ice cream. (5)
- (b) Define overrun of ice cream and enumerate different factors which influence the overrun. (5)
- Q.5 (a) Explain the steps involved in manufacture of lactose from sweet whey. (5)
- (b) Describe the method of preparation of acid and rennet casein and give the uses of casein and caseinates. (5)

Assignment – 7
Course Code: BPVI – 017

Maximum Marks – 50

Note: Attempt all the five questions.

- Q.1 (a) What do you understand by food quality? Enumerate the functions and advantages of quality control unit in a dairy plant. (5)
- (b) Describe the salient features of Food Safety and Standards Act 2006. (5)
- Q.2 (a) Describe quality control management system and its requirements. (5)
- (b) What do you understand by HACCP? Explain its principles. (5)
- Q.3 (a) What are the chemical and microbiological tests generally conducted on raw milk before its acceptance in a dairy plant. (5)
- (b) Define sensory evaluation and explain the role of sensory receptors in sensory evaluation. (5)
- Q.4 (a) Describe different packaging materials of flexible, rigid and semi rigid categories used for dairy products. (5)
- (b) Give the procedure for estimating fat in milk by Gerber method and SNF through lactometer. (5)
- Q.5 (a) What are different types of instruments used in a quality control laboratory in a Dairy Plant? (5)
- (b) How purity of sodium alginate is evaluated? (5)

Assignment – 8
Course Code : BPVI – 018

Maximum Marks – 50

Note: Attempt all the five questions.

- Q.1 (a) Describe the factors which enhance the productivity and how the resources can be optimized for achieving good productivity? (5)
- (b) Enumerate factors responsible for milk losses in a dairy plant. (5)
- Q.2 (a) What are the sources of financing the working capital? Describe the approaches of managing working capital? (5)
- (b) What do you understand by the term account, accounting and accountancy? Describe all the generally accepted principles of accountancy. (5)
- Q.3 (a) Describe various computer applications in dairy industry. (5)
- (b) What do you understand by marketing information system? Describe the components of MIS and reporting plan. (5)
- Q.4 (a) Explain the Four Ps of marketing. (5)
- (b) Describe the key factors in managing a business. (5)
- Q.5 (a) Describe the basic elements of Programme Evaluation and Review Technique. (5)
- (b) Explain the must have skills for an entrepreneur. (5)