

ASSIGNMENT BOOKLET

DIPLOMA PROGRAMME IN DAIRY TECHNOLOGY (DDT)

Academic Session: 2018



**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 is of 50 marks. The assignments award 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. The assignment should be written by the students in their own handwriting.

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) Outline the scenario of dairying in our country. State the major achievements of Operation Flood Programme. 5
(b) Give the principles of cooperatives. Explain three tier structure of dairy cooperatives. 5
- Q.2 (a) Define breed and describe the general characteristics of dairy cattle breeds. 5
(b) How can we improve the milk production in local non-descript (Desi) cattle? 5
- Q.3. (a) Describe the management and feeding practices for milking cows and buffaloes. 5
(b) Give the importance, principle and steps for clean milk production. 5
- Q.4. (a) Give the composition of cow and buffalo milk. Enumerate the factors affecting composition. 5
(b) Explain the principle and methods for detection of common preservatives and neutralizers. 5
- Q.5. (a) Enumerate physical and environmental requirements for microbial growth. 5
(b) Give different methods for preservation and milk and milk products. 5

Assignment – 2
Course Code: BPVI – 012

Maximum Marks – 50

Note: Attempt all the five questions.

- Q.1. (a) What are the important characteristics of materials used for fabrication of dairy equipment? 5
(b) Make a list of the equipment used at reception dock. Give the flow route of milk within the reception dock. 5
- Q.2. (a) Enumerate major components of vapour compression refrigeration machine and show the arrangement with the help of a diagram. 5
(b) Describe different methods of cooling milk at farm level or collection centre. 5
- Q.3. (a) Identify and draw important components of a steam boiler. 5
(b) List out boiler mountings and accessories. 5
- Q.4. (a) Explain the working principle of an induction motor. 5
(b) Explain the term power factor. Give causes of low power factor and methods of improving the power factor. 5

- Q.5. (a) Give classification of water pumps and specify the advantages of submersible pump. 5
 (b) How dairy waste water is characterized? 5

Assignment – 3
Course Code: BPVI – 013

Maximum Marks – 50

Note: Attempt all the five questions.

- Q.1. (a) Describe the steps to organise a milk collection system. 5
 (b) How chilling of milk affects the microbial growth, keeping quality and physic-chemical properties of milk? 5
- Q.2. (a) Give the principle and procedure for the platform tests conducted on a dairy dock. 5
 (b) Define UHT milk. What are its advantages and disadvantages? Give the salient features of different types of UHT plants. 5
- Q.3. (a) What is creaming efficiency? What are the factors affecting creaming efficiency? 5
 (b) Explain the components and flow diagram of HTST pasteurizer. 5
- Q.4. (a) Define homogenized milk and give theories of homogenization. 5
 (b) Define sterilized milk and describe the methods used for its preparation. 5
- Q.5. (a) Explain the operation of a pouch filling machine. 5
 (b) Describe the principle and various steps involved in “Cleaning-in-Place” process. How sanitization process is carried out for milk pasteurizer and milk silos under the CIP? 5

Assignment – 4
Course Code: BPVI – 014

Maximum Marks – 50

Note: Attempt all the five questions.

- Q.1. (a) Enumerate the factors influencing fat percentage of cream. 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 4.0% fat. 5
- Q.2. (a) Give the flow diagram for preparation of sterilized cream. 5
 (b) List out some of the common uses of cream in food industry. Describe various defects which develop in cream during its storage. 5

- Q.3. (a) Give the flow diagram and steps for manufacture of creamery butter. 5
- (b) Write the formulas for: 5
- a) Calculating yield of butter.
- b) Calculation of over-run in butter.
- c) Amount of water to be added for moisture adjustment in butter.
- d) Calculating quantity of salt in butter.
- e) Calculating quality of neutrilizer.
- Q.4. (a) Enumerate the common flavour defects observed in butter. Describe how these 5
defects can be controlled.
- (b) Enumerate the common body and texture defects observed in butter. Describe 5
how these defects can be controlled.
- Q.5. (a) Enumerate factors affecting composition and analytical constants of ghee. 5
- (b) Give the procedure for AGMARK grading of ghee and give the AGMARK 5
standard of general and special grade of ghee.

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 5
composition of *Khoa* from buffalo milk and cow milk. Enumerate the factors
affecting quality and yield of *Khoa*.
- (b) Name various *Khoa* based sweets. Describe the method for preparation of 5
Burfi.
- Q.2. (a) Describe the continuous methods of *Khoa* making with merits and demerits 5
of each.
- (b) Give flow diagram for preparation of rabri making through improved 5
methods.
- Q.3. (a) Define paneer. Give the legal standards of paneer (Normal and skim milk 5
paneer). Also give the composition of paneer prepared form buffalo milk and
cow milk.
- (b) Enumerate the factors affecting quality of paneer. 5
- Q.4. (a) Give the flow diagram for manufacture of cow milk Chhana. 5
- (b) List out common defects as observed in paneer. 5
- Q.5. (a) Give the flow diagram and steps involved in preparation of sweetened 5
condensed milk.
- (b) Give the flow diagram and steps involved in preparation of dried milks. 5

Assignment – 6
Course Code: BPVI – 016

Maximum Marks – 50

Note: Attempt all the five questions.

- Q.1. (a) Enumerate factors affecting fermentation process of starter cultures and describe the characteristics of a good starter culture. 5
(b) Give the nutritional aspects of fermented milk products. 5
- Q.2. (a) Give the flow diagram with processing parameters for manufacture of Dahi. 5
(b) Give the flow diagram with processing parameters for manufacture of Shrikhand. 5
- Q.3. (a) Enumerate the steps 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) Give the principle and method of manufacture of Ice-cream. 5
(b) Enumerate the common body and texture defects observed in Ice-cream. 5
- Q.5. (a) Give the steps involved in manufacture of edible casein. 5
(b) Enumerate the steps involved in manufacture of lactose from whey. 5

Assignment – 7
Course Code: BPVI – 017

Maximum Marks – 50

Note: Attempt all the five questions.

- Q.1. (a) Enumerate the functions and advantages of quality control unit in a dairy plant. 5
(b) Give the salient features of hygienic and sanitary practices given for milk and milk products under Schedule 4 of FSSAI Regulations (Licensing and Regulation Requirements Regulations) 5
- Q.2. (a) Describe the steps to be followed at primary production level to ensure safe and quality milk for human consumption. 5
(b) What do you understand by HACCP? Write its five preliminary steps and seven principles. 5
- Q.3. Describe different microbiological tests conducted on milk and milk products. 10
- Q.4. (a) Give the procedure for estimating fat in milk by Gerber method and SNF through lactometer. 5
(b) What are the precautions to be taken while taking sample for microbiological analysis of milk and milk products? 5

- Q.5. (a) Describe important plastic materials used for packaging of milk and milk products. 5
(b) Give the factors affecting sensory evaluation. 5

Assignment – 8
Course Code: BPVI – 018

Maximum Marks – 50

Note: Attempt all the five questions.

- Q.1. (a) Enumerate factors responsible for milk losses in a dairy plant. Give the steps for controlling these losses in a dairy plant. 5
(b) Explain the term “Productivity” and factors affecting productivity. 5
- Q.2. (a) Give the examples of computer application in dairy industry. 5
(b) Enumerate the factors affecting human resources requirement of a dairy plant. 5
- Q.3. (a) Enlist factors determining working capital. Also indicate approaches to manage working capital. 5
(b) What do you understand by cost centre? List different cost centres. Also enlist different techniques used to determine product cost. 5
- Q.4. (a) Explain four important Ps of marketing. 5
(b) Enlist basic elements of promoting a product. 5
- Q.5. (a) What is Marketing Information System? Enumerate its important components. 5
(b) Identify and explain the five must have skills of an entrepreneur. 5