

MAHARASHTRA ANIMAL AND FISHERY SCIENCES UNIVERSITY, NAGPUR
SEMEISTER END THEORY EXAMINATION, B.TECH. (D.T.) Degree Course 2017-18

Semester	: IV (New Syllabus)	Academic Year	: 2017-2018
Course No.	: DT-407	Course Title	: By-Products Technology
Credits	: 3+1=4	Total Marks	: 50
Day & Date	: Monday, 18.06.2018	Time	: 15.00 to 17.00 Hrs.

- Note :**
- 1) All questions from **Section 'A'** are compulsory.
 - 2) Solve **Any Five** questions from **Section 'B'**.
 - 3) Draw neat and well labelled diagram wherever necessary.

SECTION - 'A'

Q. 1 . A) Choose the most appropriate answer from the options given below. (05)

- i) The major by-product of cheese industry is
 - a) Sour whey
 - b) Medium acid whey
 - c) Sweet whey
 - d) All of these
- ii) Which of following method gives lowest yield of GR
 - a) CBM
 - b) Prestratification
 - c) Desi
 - d) All of these
- iii) Whey base beverages testing
 - a) Low CHO and High protein
 - b) Equal CHO and Protein
 - c) High CHO and Low Protein
 - d) None of these
- iv) The lactic acidity of sweet butter milk ranges
 - a) 0.09 to 0.13%
 - b) 0.20 to 0.25%
 - c) 0.15 to 0.25%
 - d) 0.25 to 0.30%
- v) Which of following is having more flaky texture
 - a) Whey
 - b) Sweet butter milk
 - c) Desi butter milk
 - d) Skim milk

B) Answer the following in one line. (05)

- i) Enlist the grades of lactose.
- ii) Which whey contains high mineral percent?
- iii) Which butter milk contains high fat percent?
- iv) Which caseinate have more calcium percent?
- v) When skim milk is treated as by-product?

Q. 2 A) Rewrite the following statements after making necessary corrections in underline (05)
word if any.

- i) Whey with high lactose content is preferred for Casein manufacture.
- ii) Wet casein is preferred for WPC making.
- iii) The most preferred raw material for Lactose manufacture is MF permeate.
- iv) TS of UF permeate is higher than RO permeate.
- v) TS of plain condensed whey and sweetened condensed is similar.

(P.T.O.)

DT-407 (3+1=4)

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B) Do as directed.

(05)

- i) Define Dairy by-product.
- ii) Define whey.
- iii) List major by-products of Indian Dairy Industry.
- iv) Why dilute acid used for precipitation of skim milk during casein making.
- v) Define Ghee residue.

SECTION – 'B'

- Q. 3 Discuss various pollution problems associated with whey and ghee residue also gives their status of utilization in India. (06)
- Q. 4 Write on industrial production of crude and refined lactose using membrane technology. (06)
- Q. 5 Define casein, state its type, give their specifications and discuss the process for production of lactic acid casein with flow chart. (06)
- Q. 6
- a) Types of co precipitate with specifications. (02)
 - b) Dried whey its type and specifications. (02)
 - c) Specifications of skim milk and sweet butter milk. (02)
- Q. 7
- a) Physico-chemical and functional properties of WPC. (03)
 - b) Manufacture of casein hydrolysates along with applications. (03)
- Q. 8
- a) Industrial uses of Casein. (02)
 - b) Application of sodium caseinate in food. (02)
 - c) Deproteinized whey. (02)
- Q. 9
- a) Manufacture of whey based beverages. (02)
 - b) Nutritional characteristics of dairy by-products. (04)
