

MAHARASHTRA ANIMAL AND FISHERY SCIENCES UNIVERSITY, NAGPUR
SEMESTER END THEORY EXAMINATION, B. TECH. (D.T.) DEGREE COURSE 2018-19

Semester : **III (New Syllabus)**

Academic Year : **2018-2019**

Course No. : **DT-304**

Course Title : **Cheese Technology**

Credits : **3+2=5**

Total Marks : **50**

Day & Date : **Wednesday, 09/01/2019**

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) All questions carry equal marks.
 - 4) 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) According to FSSAI, Mozzarella cheese should contain moisture of
 - a) Not more than 60 percent
 - b) Not less than 60 percent
 - c) 60 percent
 - d) None of these
- ii) According to FSSAI milk fat percent on dry basis for semi hard cheese is
 - a) Not less than 40 percent
 - b) Not more than 40 percent
 - c) Not less than 60 percent
 - d) Not more than 45 percent
- iii) The moisture content of extra hard cheese is
 - a) 30-45 percent
 - b) 50-60 percent
 - c) 25-36 percent
 - d) None of these
- iv) Cheddar cheese in a concentrated form provides of energy
 - a) 600 calories/100g
 - b) 300 calories/100g
 - c) 400 calories/100g
 - d) 200 calories/100g
- v) Casein:Fat ratio in cheese milk should be
 - a) 0.56-0.64
 - b) 0.63-0.73
 - c) 0.50-0.90
 - d) 0.68-0.70

B) Give the scientific reasons of the following. (05)

- i) Addition of calcium chloride @0.01-0.03% in milk.
- ii) Standardization should be done during cheese making.
- iii) The starter is the heart of the cheese.
- iv) Cheedaring operation in cheese making is very important.
- v) Temperature of hooping should be 30-32°C.

Q. 2 A) Give the formulae for the following. (05)

- i) Fat on dry basis (% FDB).
- ii) Modified van slyke and price formula for yield of cheddar cheese.
- iii) Casein content of unseparated milk.
- iv) Yield formula for cottage cheese and cheddar cheese.
- v) Moisture on fat free basis (FDB).

(P.T.O.)

- B) State "True or False". If false, rewrite the statement after making necessary corrections in underlined words. (05)
- i) The country of origin for Roquefort cheese is France.
 - ii) Cooking temperature for cheddar cheese is 37-39°C.
 - iii) The rate of addition of starter during ripening process is 0.5-1.0% of milk.
 - iv) The melting point of paraffin wax is 51-52°C.
 - v) Greasy defect is due to high moisture content in cheese.

SECTION – 'B'

- Q. 3. Write about history and development of cheese manufacture. (06)
- Q. 4. What is meant by ripening of cheese? Explain various changes taking place during ripening of cheddar cheese. (06)
- Q. 5. Describe in detail factors affecting yield of cheese. (06)
- Q. 6. a) Write a note on rennet substitutes. (02)
b) Enlist manufacturing steps of processed cheese. (02)
c) Enlist the various pretreatment given to cheese milk. (02)
- Q. 7. a) Explain in detail microbiological defects in cheese. (03)
b) Describe the method of manufacture of cottage cheese. (03)
- Q. 8. a) Write a note on packaging of cheese. (02)
b) Write the role of starter culture in cheese making. (02)
c) Enlist the inhibitory salts used in cheese. (02)
- Q. 9. a) Give FSSAI standards for moisture and fat content of cheddar and gouda cheeses. (02)
b) Explain in detail properties of chymosin and factors related to rennet clotting of milk. (04)
