

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

Semester : VII (New Syllabus)

Academic Year : 2018-2019

Course No. : DE-713

Course Title : Dairy Plant Design
& Layout

Credits : 2+1=3

Total Marks : 50

Day & Date : Wednesday, 09/01/2019

Time : 15.00 to 17.00 Hrs.

Note : 1) **Section "A"** is Compulsory.

2) Solve **Any Five** questions from **Section "B"**

3) The use of scientific tables, charts and calculator is allowed in case of engineering courses.

SECTION - 'A'

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

i) Minimum space for rotary washer having capacity of 3-4 cans/min

a) 4m x 4m

b) 5m x 5m

c) 6m x 6m

d) None of the above

ii) Minimum space between storage tanks.

a) 60cm

b) 70cm

c) 80cm

d) 90cm

iii) Minimum space between equipments.

a) 60cm

b) 70cm

c) 80cm

d) 90cm

iv) Recommended ceiling height for process room.

a) 266-358 cm

b) 366-458 cm

c) 466-588 cm

d) None of the above

v) Minimum height of cold storage room.

a) 230cm

b) 240cm

c) 250cm

d) 260cm

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

i) How much window openings should be provided with respect to floor area.

ii) Give the minimum thickness of stone used for flooring.

iii) As per BIS what should be the minimum crushing strength of brick in N/mm².

iv) At what height the milk piping should be elected in manually cleaned plant.

v) Convert 1 foot candle in Lux.

Q.2 A) Give scientific reasons for. (05)

i) Verification of topography before finalizing site.

ii) Why sand is used in mortar?

iii) For product manufacturing dairy plant country location is preferred.

iv) Load bearing test is carried out before starting the actual construction of dairy plant.

v) Why red mandana stone is used in processing section?

(P.T.O.)

- B) State whether True or False. If false, rewrite the statement after making necessary corrections. (05)
- i) Alligatoring problem is because of fast drying of upper coat over soft coat.
 - ii) Light emitting diode is having life of <50000h.
 - iii) For fast drainage the floor at rear of truck should have slope of 1.9cm/30cm.
 - iv) Country location means locating dairy plant in rural area.
 - v) Air changes means total volume of air from that particular section needs to be replaced.

SECTION – 'B'

- Q.3 Describe in details the points which must be considered while deciding the location for dairy plant. (06)
- Q.4 What are the basic factors to be considered before planning the dairy building? (06)
- Q.5 Explain different types of lights with its advantages. (06)
- Q.6
- a) Explain air curtain and air lock. (02)
 - b) What is an operational layout? (02)
 - c) Draw neat sketch of Amul trap. (02)
- Q.7
- a) Discuss the painting problems & failures. (03)
 - b) Explain types of ventilations. (03)
- Q.8
- a) Sketch the arrangements of bottling section using come back type washer. (02)
 - b) Where would you locate boiler house in small and large size dairy plant. (02)
 - c) Explain the term flexibility in dairy plant design and layout. (02)
- Q.9
- a) Enlist the types of doors. (02)
 - b) Discuss the role of each constituent of Portland cement. (04)
