

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

Semester : VII (New Syllabus)

Academic Year : 2018-2019

Course No. : DM.- 706

Course Title : Food and Industrial Microbiology

Credits : 2+1=3

Total Marks : 50

Day & Date : Monday, 07/01/2019

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) Draw neat and well labelled diagram wherever necessary.

**SECTION – 'A'**

Q.1 A) Choose and indicate the most appropriate answer for the following. (05)

- i) The father of canning process is .....
  - a) Nicolas Appert
  - b) Lister
  - c) Pasteur
  - d) Roentengen
- ii) Osmophiles grow on the food rich in .....
  - a) Protein
  - b) Fat
  - c) Salt
  - d) sugar
- iii) Keeping out microorganisms from food is called .....
  - a) Filtration
  - b) Asepsis
  - c) Refrigeration
  - d) Heating
- iv) Nisin is a bacteriocin produced by .....
  - a) *S.thermophilus*
  - b) *L.acidophilus*
  - c) *Leu.mesenteroides*
  - d) *Lactococcus lactis ssp. lactis*
- v) Pasteurization of milk achieves complete destruction of .....
  - a) Spoilage bacteria
  - b) Spores
  - c) Pathogens
  - d) Thermoduric

B) Do as directed. (05)

- i) Write the possible reasons of putrefactive taint in food.
- ii) Explain term 'D-value'
- iii) What do you understand from the term 'Chemostat'?
- iv) Elaborate ETP.
- v) Define solid state fermentation.

Q.2 A) Define the following.

- i) Water activity
- ii) Biopreservation
- iii) Food infection
- iv) Radurization
- v) Aseptic packaging

(P.T.O.)

- B) State whether True or False. If false, rewrite the statement after making necessary corrections. (05)
- i) Catalase and phosphatase are the heat stable enzymes produced by psychrotrophs.
  - ii) VRBA media used for enumeration of lipolytic bacteria
  - iii) Saccharomyces is the Yeast used for wine production
  - iv) 0.01ml sample is taken while performing the DMC
  - v) Rhizopus stolonifer is an example of bread mold

### SECTION – 'B'

- Q.3 Discuss about different types of fermentation process and their role in food preservation. (06)
- Q.4 Discuss various spoilages of fruits and fruit juices and write down their control measure. (06)
- Q.5 Write about intrinsic and extrinsic factors affecting microbial growth in food. (06)
- Q.6
- A) Differentiate between food microbiology and industrial microbiology. (02)
  - B) Differentiate between chemostat and turbidostat. (02)
  - C) Role of natural antimicrobial compounds in food preservation. (02)
- Q.7.
- A) Enlist the methods of waste water treatment and discuss any one. (03)
  - B) Write about spoilage of canned food, microorganism involved and control measures. (03)
- Q.8
- A) Write the importance of yeast in food microbiology. (02)
  - B) Comment on production of Vitamin-B12. (02)
  - C) How water activity affects the microbial growth in foods? (02)
- Q.9
- A) Define food poisoning and mention their types. (02)
  - B) Explain the microorganisms and process involved in the industrial production of alcohol and their uses. (04)

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