

**MAHARASHTRA ANIMAL AND FISHERY SCIENCES UNIVERSITY, NAGPUR**  
**SEMESTER END THEORY EXAMINATION, B.Tech. (D.T.) Degree Course 2016-17**

Semester	: VII (New Syllabus)	Academic Year	: 2016-2017
Course No.	: DM-706	Course Title	: Food and industrial Microbiology
Credits	: 2+1=3	Total Marks	: 50
Day & Date	: Wednesday, 11/01/2017	Time	: 11.00 to 13.00 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) Activated sludge contains large number of .....
  - a) Bacteria
  - b) Yeasts and mold
  - c) Protozoa
  - d) All of these
- ii) The time temperature combination for HTST pasteurization of 71.1°C for 15 sec is selected on the basis of .....
  - a) *Coxiella Burnetii*
  - b) *E. coli*
  - c) *B. subtilis*
  - d) *C. botulinum*
- iii) The magnitude of BOD of wastewater is related to .....
  - a) Bacterial count
  - b) Amount of organic material
  - c) Amount of inorganic material
  - d) All of these
- iv) Watery soft rot is found mostly in .....
  - a) Fruits
  - b) Vegetables
  - c) Cereals
  - d) All of these
- v) The predominant microorganisms in frozen foods are .....
  - a) Bacteria
  - b) Micrococcus
  - c) Yeast and moulds
  - d) None of these

B) Rewrite the following statements after making necessary corrections. (05)

- i) Bacterial soft rot is caused due to fermentation of pectin.
- ii) Bacteria are the major spoilage organisms of vegetables.
- iii) The manufacture of baker's yeast involve *S. thermophilus*.
- iv) The major organism used in the microbial production of citric acid is *Penicillium notatum*.
- v) Lipid hydrolysis is caused by protease.

Q. 2 A) Answer the following in one/two lines. (05)

- i) What is chemostat?
- ii) What is Nisin?
- iii) What is the pH ranges of soft drinks?
- iv) What is blanching?
- v) Define moist heat sterilization

B) Match the following. (05)

- | Column 'A'                | Column 'B'                   |
|---------------------------|------------------------------|
| i) Spore forming bacteria | a) <i>Lactococcus lactis</i> |
| ii) Buttermilk flavour    | b) Hydrogen                  |
| iii) Ropiness             | c) Sterilized juices         |
| iv) Swelling of can       | d) Diacetyl                  |
| v) Nisin                  | e) <i>Bacillus subtilis</i>  |

(P.T.O.)

## SECTION –‘B’

- Q. 3 Write in brief the importance of microbes in food Industry. (06)
- Q. 4 Discuss in brief the microbial spoilage of fruits and vegetables. (06)
- Q. 5 Write in brief process underlying the destruction of microorganisms by irradiation principles. (06)
- Q. 6 Write an explanatory notes on the following.
- A) Microbiological spoilage of canned foods (02)
  - B) Contamination spoilage of cereals (02)
  - C) Preservation of bakery products (02)
- Q. 7
- A) What are the advantages of bio-processing? (03)
  - B) Discuss in brief the primary and secondary metabolisms with their metabolites produced. (03)
- Q. 8 Write short notes on.
- A) Antimicrobial constituents (02)
  - B) Redox potential (02)
  - C) Biological structure on microbial growth (02)
- Q. 9
- A) Write down the various stages during fermentation process. (02)
  - B) Discuss in brief the criteria for selection of industrially important microorganisms. (04)

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