

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'

- i) Spore forming bacteria
- ii) Buttermilk flavour
- iii) Ropiness
- iv) Swelling of can
- v) Nisin

Column 'B'

- a) *Lactococcus lactis*
- b) Hydrogen
- c) Sterilized juices
- d) Diacetyl
- e) *Bacillus subtilis*

(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)
