AT–416

B.Sc. (Part–III) Semester—VI Examination

6S : MICROBIOLOGY

(Industrial Fermentations Food Microbiology and Metabolism)

Time : Three Hours] [Maximum Marks : 80

Note :— (1) **All** questions are compulsory.
(2) Draw well labelled diagram wherever necessary.

1. (A) Fill in the blanks :
   (i) In aerobic fermentation _____ gas is required.
   (ii) Molasses is by-product of _____ industry.
   (iii) Penicillin antibiotic is produced from _____.
   (iv) Milk is heated in HTST pasteurization at 71.7°C for _____ seconds. 2

   (B) Choose the correct options :
   (i) Name of milk sugar is :
   (a) Arabinose (b) Mannitol
   (c) Lactose (d) Fructose
   (ii) For production of wine in industry which culture is used ?
   (a) Bacillus subtilis (b) Candida albicane
   (c) Lactobacillus lactis (d) Saccharomyces cerevaceae
   (iii) In cheese formation which component of milk is coagulated ?
   (a) Lactose (b) Vit 'C'
   (c) Vit 'A' (d) Casein
   (iv) Pasteurization process is introduced in Microbiology by :
   (a) Louis Pasteur (b) Rober Hook
   (c) Lazzaro Spallinzani (d) Edward Jenner 2

(C) Answer the following in **one** sentence each :

(i) Fermentation

(ii) Food intoxication

(iii) Antifoam agent

(iv) Inoculum build up. 4

2. Describe in brief :

(a) Crowded plate technique. 4

(b) Discuss raw materials used in industrial fermentations. 4

(c) Explain in brief antifoam agents. 4

OR

(d) Describe in brief acrobic and anaerobic fermentation. 4

(e) Give differences between batch and continuous fermentation. 4

(f) Draw well labelled diagram of fermenter. 4

3. Describe in detail production of Red table wine. 12

OR

Describe in detail production of citric acid. 12

4. (a) Explain in brief production of SCP. 4

(b) Draw flow sheet diagram of Fungal amylase production. 4

(c) Describe how Baker's yeast is produced from molasses. 4

OR

(d) Give applications of Amylase. 4

(e) Draw well labelled flowsheet of penicillin production. 4

(f) Describe Vitamin B_{12} production in brief. 4

5. (a) Describe LTH method of pasteurization. 4

(b) Describe production of milk powder. 4

(c) Describe any two sources of milk contamination. 4

OR

(d) Explain different grades of milk. 4

(e) Describe HTST method of pasteurization. 4

(f) Describe phosphatase test for milk. 4

6. (a) What is food poisoning ? Differentiate between food intoxication and food infection. 4

(b) Describe any two sources of food contamination. 4

(c) Describe production of idli. 4

OR

(d) Describe botulism. 4

(e) Describe in brief production of pickle. 4

(f) Preservation of food by low temperature. 4

7. What is glycolysis ? Describe in detail EMP pathway. 12

OR

Define enzyme. Give details of enzyme classification. 12