

B.Sc. (Part-II) Semester-III Examination

3S : FOOD SCIENCE

(Food Microbiology)

Time : Three Hours]

[Maximum Marks : 80

Note :— (1) **ALL** questions are compulsory.

(2) Q.No. 2 to 7 carry equal marks.

(3) Draw a diagram in support of your answer wherever necessary.

1. (A) Fill in the blanks : 2
- (i) _____ are the salt loving microorganisms (Halophiles/Thermophiles)
 - (ii) The cells in the animals are of _____ type. (eukaryotic/prokaryotic)
 - (iii) Conversion of sugar into alcohol is _____ fermentation (aerobic/anaerobic)
 - (iv) _____ is used for staining of microbes (crystal violet/copper sulphate)
- (B) Choose the correct alternative : 2
- (i) Not involve fermentation in preparation :
 - (a) T.Fv (b) Wine
 - (c) Cheese (d) Paneer
 - (ii) Continuous increase in bacterial cells :
 - (a) Lag Phase (b) Log Phase
 - (c) Stationary Phase (d) Death Phase
 - (iii) Streak plate method is used for :
 - (a) Growth curve (b) Culture preservation
 - (c) Gram Staining (d) Pure culture isolation
 - (iv) Purposefully addition of microorganism :
 - (a) sterilization (b) isolation
 - (c) inoculation (d) incubation
- (C) Answer in one sentence : 4
- (i) Define protozoa 1
 - (ii) What is incubation ? 1
 - (iii) Name any four sources of microbial contamination. 1
 - (iv) What is anaerobic fermentation ? 1
2. (a) What is food microbiology ? Give the primary sources of microorganisms in food. 4
- (b) Discuss any two organelles of cell in brief. 4
- (c) Give the types of microorganisms depending upon requirement of O₂. 4

OR

- (p) Discuss the three domain system of classification of microorganisms. 4
- (q) Define Bacteria, Fungi, Protozoa and Algae with example. 4
- (r) What is taxonomy ? What are the major characteristics used in taxonomy ? 4
3. (a) Discuss the nutritional requirement of microorganisms. 4
- (b) What are the various methods of bacterial count ? Explain turbidity measurement in brief. 4
- (c) Explain binary fission in brief. 4

OR

- (p) Explain continuous culture growth in chemostat. 4
- (q) What are the factors affecting growth of micro-organisms ? 4
- (r) Explain growth curve. 4
4. (a) Explain the relation of clostridium and lactobacillus bacteria with food with examples. 4
- (b) What are pectinolytic, saccharolytic, lipolytic and psychrotropic bacteria ? 4
- (c) Enlist the common spoilages that occur in bread, fruits and vegetables, eggs and concentrated orange juice. Give the bacteria related. 4

OR

- (p) Explain the general characteristics of bacteria. 4
- (q) Give the classification of bacteria depending on their shape. 4
- (r) Draw a neat diagram of bacterial cell showing all the organelles. 4
5. (a) Give an account of general properties of fungi. 4
- (b) Discuss the morphology of fungi. Give its classification based on the morphology. 4
- (c) Explain the use of yeast in food production. 4

OR

- (p) Give the difference between yeast and moulds. 4
- (q) Give an account of mushroom as a food. 4
- (r) Give the significance of molds in food. 4
6. What is media ? What are the ingredients ? Give classification. 12

OR

- What is staining ? Explain simple and differential staining. 12
7. What is contamination ? Give the causes. Explain the types. 12

OR

- What is fermentation ? Give the types and explain its use in food production. 12