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/anacrobic)

(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 O_2. 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