B. Tech.

(SEM. IV) EXAMINATION, 2006-07

BASIC & FOOD MICROBIOLOGY

Time : 3 Hours] [Total Marks : 100

Note: Attempt all questions.

1. Attempt any four parts of the following: $4 \times 5 = 20$
   
   (a) Distinguish the characteristics of Lower Protists and Higher Protists.
   
   (b) Differentiate clearly between Pasteurization and Sterilization of foods.
   
   (c) Describe the morphology of any Mold with the help of a suitable diagram. Also explain in brief the asexual reproduction in molds.
   
   (d) What is the importance of differential mediums in food microbiology? Glucose acts as best substrate, why?
   
   (e) Draw and explain theoretical growth curve for bacterial population.
   
   (f) What would be the features of growth in nutrient broth and Petri dish (streak)?
2 Attempt any four parts of the following: \(4 \times 5 = 20\)
(a) Correlate microorganisms with spoilage and preservation of foods.
(b) What do you understand by fitness of foods?
(c) Enlist various methods of food preservation. Explain any one in detail.
(d) How do you apply Asepsis in preservation of foods?
(e) What are perishable foods? How are they classified?
(f) What are intrinsic factors governing microbial kind and population in a food?

3 Attempt any two parts of the following: \(10 \times 2 = 20\)
(a) Fresh meat spoils very fast, why? Suggest one method of its preservation.
(b) Indicate prescribed standards of microbial quality for:
   (i) Milk powder
   (ii) Fresh fish and sea foods
   (iii) Fruit based beverages
   (iv) Processed cereal foods
(c) Draw a scheme for diagnosis of cause of spoilage of canned foods.

4 Attempt any two parts of the following: \(10 \times 2 = 20\)
(a) Indicate the microorganisms implicated in food poisoning and food borne infections.

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(b) Write a precise technical note on any one of the following:

(i) Application of HACCP in Food Industry
(ii) Beneficial microorganisms and their utilization in food fermentations.

(c) How does food plant sanitation/hygiene relate with microorganisms? Explain?

5 Attempt any two parts of the following: \[ 10 \times 2 = 20 \]

(a) Differentiate clearly between Autotrophs and Heterotrophs.

(b) What do you understand by heat resistance of microorganisms? How is it determined?

(c) What is yoghurt? Name microorganisms associated with the production of this product. Indicate their role and conditions for proper action.