B. TECH.
(SEM. VI) EXAMINATION, 2006-07
PRESERVATION OF BIOMATERIALS

Time : 3 Hours] [Total Marks : 100

Note : (1) Attempt all questions.
(2) All questions carry equal marks.

1 Attempt any four parts of the following:
(a) Indicate the various sources of industrially important microbial cultures.
(b) Describe the method of preservation of microbial culture in liquid nitrogen storage.
(c) Write down the advantages and disadvantages of preservation of culture in liquid nitrogen storage.
(d) Describe the technique of preservation of microbial culture by oil overlay.
(e) Indicate and explain the main cause of failure to recover lyophilized cultures.
(f) Explain how the quality of lyophilized culture can be judged.

2 Attempt any four parts of the following:
(a) Write down the name of five food poisoning microorganisms.
(b) Explain the causes of food poisoning. Write down the main characteristic features of natural foods.
(c) Write down the chemical constituents of biomaterials.
(d) Briefly describe the properties of chemical constituents of (foods) biomaterials.
(e) Briefly explain the causes of spoilage of biomaterials.
(f) What are the advantages and disadvantages of processed foods as compared to natural foods?

3 Attempt any two parts of the following:
(a) Explain the principles of food preservation by drying and low temperatures.
(b) Explain the terms commercial sterility and canning. Write down the general steps and their purposes involved in canning of pineapples.
(c) Discuss about the types of freezing methods for storage of biomaterials with their merits and demerits.

4 Attempt any two parts of the following:
(a) Describe the method of spray drying for preservation of food items with its merits and limitations.
(b) Differentiate the terms drying and dehydration. Briefly describe the method of freeze drying of biomaterials with its limitations and merits.
(c) What are the different types of dosages used for preservation of biomaterials by irradiation? Briefly discuss about the direct effect of irradiation on microorganisms.

5 Attempt any two parts of the following:
(a) Differentiate between Class I and Class II preservatives with five suitable examples of each class.
(b) Write down a few important considerations about the safety and legislation of food products.
(c) What are the various gases used for the preservation of foods? Discuss briefly about the preservation of foods using antioxidants with examples.