

2021

MICROBIOLOGY — HONOURS

Paper : SEC-B-1

(Food Fermentation Techniques)

Full Marks : 80

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

Question nos. 1 and 2 are compulsory and answer **any four** more questions from the rest.

1. Answer **any ten** questions : 2×10
- (a) What is the meaning of fermented food?
 - (b) Differentiate prebiotic and probiotic.
 - (c) Name two microorganisms associated with yogurt production.
 - (d) Is it good to have dahi everyday?
 - (e) Define buttermilk.
 - (f) What is acidophilus milk?
 - (g) What are the health benefits of cheese?
 - (h) What is rennet? Where is it used?
 - (i) In which food fermentation process heterolactic fermenters are used?
 - (j) Name the organisms used in the preparation of idli.
 - (k) What causes Ropiness in milk?
 - (l) Why are pickles packed in glass jars?
 - (m) How use of salt and sugar are important in food preservation?
 - (n) What are the volatile compounds present in fermented meat products?
2. Write short notes on (**any four**) : 5×4
- (a) Idli production
 - (b) Pasteurization
 - (c) Role of yeast in fermentation
 - (d) Fermented alcoholic beverages
 - (e) Production of fermented sausage in flow chart form
 - (f) Starter culture.

Please Turn Over

3. (a) What are the primary events that occur during the fermentation of milk products?
(b) Give a flow diagram for cheese production.
(c) Write the name of a mold used in cheese preparation. What changes take place during the ripening of cheese? 3+4+(1+2)
4. (a) Which microorganisms are involved in the preparation of dosa? Why fermentation is required for dosa making and mention its nutritional benefits.
(b) What is the composition of buttermilk? Which bacteria are present in it? How is it produced? (2+3)+(2+1+2)
5. (a) What are probiotic foods?
(b) What are the most common types of probiotic bacteria?
(c) Can I use probiotics to help with medical conditions?
(d) Are all fermented foods considered to be probiotic foods? 2+2+4+2
6. (a) What type of vinegar should be used for making pickles and why?
(b) What are microorganisms involved in pickling vegetables?
(c) Pickles have a long shelf-life and do not get spoiled for months, why?
(d) Write the names of different microbes associated with Sauerkraut production. 3+2+3+2
7. (a) What is the main reason for the fish to be fermented?
(b) Write a short note on salted fish products.
(c) Name one fermented meat product and write two microorganisms involved in this meat fermentation.
(d) Name one pathogen that grows in salted fish. 2+4+3+1
8. (a) 'Soy sauce is a popular oriental fermented condiment'— how is it produced through fermentation process?
(b) Name two microorganisms that are used in the production of yogurt.
(c) Which organism is used in the preparation of bread? Can you prepare bread without the use of this organism?
(d) What is gluten free bread?
(e) What are the functions of the organisms used in the preparation of 'Sourdough bread'? 3+1+(1+1)+2+2
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