SEC 1 Food Fermentation Techniques & Packaging
Semester I

Unit wise model questions

Answer the following multiple choice questions (1 mark each)

1. Preparation of baker's yeast cells for bread making is useful in
a. Massive increase in cell population to seed a commercial generation in the end
b. Biochemical & physiological condition of yeasts to meet the requirement of the user
c. High dough leavening quality
d. Both a. & b
e. All a., b. & c.

2. Microbial growth initiation in grain based foods is supported by
a. Water content of the grain
b. Polysaccharide content of the grain
c. Little amount of free sugar content of the grain
d. Previous batch of microbes

3. Prebiotic components of cereals include
a. Arabinoxylan & β-glucan
b. Small oligosaccharides
c. Amylopectin
d. All of the above

4. Phytate (myo-inositolhexaphosphate) is considered as a reservoir for
a. Vitamins
b. Minerals & phosphor
c. Sugar alcohols
d. Trace elements of nutrition

5. Sourdough is advantageous because
a. Inhibition of α-amylase and longer mold free period along with prevention of rope in bread
b. Extra bit of leavening is allowed
c. Sour taste creates easier fermentation condition
d. Makes bread delicious afterwards

6. Sourdough can be prepared by using
a. Addition of defined starter culture
b. Addition of mother sponge
c. Adding water into cereal powder
d. None of the above

7. Mother sponge is known as
a. Leavened dough
b. Starter culture to prepare sourdough

c. Piece of mature or ripe dough
d. Dough before the start of leavening

8. The microflora of spontaneously fermenting sourdough usually consists of
a. Saccharomyces cerevisiae + Lactobacillus casei
b. Pediococcus cerevisiae + Lactobacillus plantarum
c. Pediococcus cerevisiae + Streptococcus lactis
d. All of the above

9. Function of yeast in sourdough is
a. Acidification of dough
b. Amylolysis
c. Proper leavening
d. Generation of flavour

10. Anti-mold activity of sourdough is attributed to
a. Lactobacillus plantarum
b. Lactobacillus acidophilus
c. Lactobacillus sanfranciensis
d. Lactococcus lactis

11. Flavour development of dosa is due to the growth of
a. Lactobacillus delbruckii
b. Streptococcus lactis
c. Leuconostoc mesenteroides + Pediococcus cerevisiae
d. Debaryomyces hansenii + Trichosporon beigelli

12. Early stage fermentation of dosa is associated with
a. Heterofermentative LABs
b. Homo + Heterofermentative LABs
c. Homofermentative LABs
d. Yeasts

13. Late stage of idli fermentation is due to
a. S.lactis + P. cerevisiae
b. Yeasts + Lactococcus lactis
c. L. lactis + P. cerevisiae
d. P. cerevisiae only

14. Sauerkraut is prepared from
a. Carrot
b. Cauliflower
c. Mango
d. Cabbage

15. Principal homofermentative LAB associated to sauerkraut is
a. Lactobacillus brevis
b. Lactobacillus plantarum
c. Leuconostoc mesenteroides
d. P. cerevisiae

16. Off-flavoured kraut is caused by
a. Low [salt]

b. High temperature
c. Rapid fermentation by aerobic yeasts & molds
d. All of the above

17. Leaf mustard pickle is fermented by
a. Leuconostoc mesenteroides + Pediococcus cerevisiae
b. Lactobacillus helveticus + Lactobacillus bulgaricus
c. Lactobacillus plantarum only
d. Pediococcus cerevisiae only

18. "Chalky bread" is caused by
a. Debaryomyces hansenii
b. Candida kefir
c. Saccharomycopsis fibuligera
d. Zygosaccharomyces bailli

19. Black gram in idli/dosa is the source of
a. Lactobacillus plantarum
b. Pediococcus cerevisiae
c. Leuconostoc mesenteroides
d. All of the above

20. Pink kraut is caused by
a. Lactococcus lactis
b. Rhodotorula sp.
c. Lactobacillus plantarum
d. Penicillium sp.

Unit 1

Answer the following question in one to two words (1 mark each)

1. What is Kimchi?

Answer the following short questions (2 marks each)

1. What is the actual purpose of fermentation?
2. What do you mean by Kafir & Pulque?

Answer the following semi-descriptive questions (3 marks each)

1. What is the principal difference between primitive& modern beers?
2. How can meat-like texture be generated in fermented products?

Answer the following descriptive questions (4 & more marks each)

1. Discuss the health benefits of Cheese, yoghurt & Koumiss.
2. Describe the health beneficial effects of fermented foods.
3. Enlist the role of LABs in fermentation as a whole.

Unit 2

Answer the following question in one to two words (1 mark each)

1. What do you mean by surface ripening?

Answer the following short questions (2 marks each)

1. What is the specific role of Sterptococcus salivarius thermophilus in yoghurt fermentation?
2. How can the yoghurts be made sweet?
3. What is the actual utility of cheese preparation?
4. State the utility of salting in cheese making.
5. What is the purpose of ripening of cheese?

Answer the following semi-descriptive questions (3 marks each)

1. Classify yoghurt according to fat content.
2. State the characteristics of L. delbruckii bulgaricus & Bifidobacterium sp. in yoghurt.
3. Describe the roles of stabilisers in yoghurt preparation.
4. How the flavour can be developed in yoghurt?

Answer the following descriptive questions (4 & more marks each)

1. Mention the principal LABs associated with yoghurt fermentation.
2. Classify cheese with suitable examples.
3. Describe the two coagulation techniques of cheese mentioning the biochemistry in each case.
4. How do proteolysis & lipolysis affect ripening of cheese?

Unit 3

Answer the following questions in one to two words (1 mark each)

1. Which component makes the soy sauce delicious?
2. Enlist the type of yeasts involved in soy sauce maturation.
3. Define sourdough.
4. What factor does initiate the growth of microbes in cereals?
5. What do you mean by mother sponge?
6. What is chalky bread?

Answer the following short questions (2 marks each)

1. How can soy sauce & paste be differentiated?
2. Cite four flavour imparting components of soy sauce.
3. How the baking is carried out in case of bread preparation?
4. Indicate the difference between idli & dosa?
5. Describe the nutritive value of dosa.

Answer the following semi-descriptive questions (3 marks each)

1. Classify soy sauce depending on preparation principles & physical properties
2. Enlist the properties of starter mold in soy sauce fermentation.
3. What is finished koji? How does it look like?
4. Discuss the purpose of using yeast in soy sauce maturation.
5. Comment on the anti-mold activity of sourdough.
6. How the flavour can be generated in sourdough?
7. What is the advantage of using Zygosaccharomyces bailii in dough formation?
8. Comment on the utility of black gram in idli or dosa preparation?
9. How may the ingredient composition specify the microbial fermenting process in idli making?

Answer the following descriptive questions (4 & more marks each)

1. Give examples of four common molds in cheese ripening.
2. Discuss the purpose of using both starchy & proteinacious starting materials in soy sauce preparation.
3. What is the role of two types of molds in soy sauce fermentation?
4. How the soy sauce can be pasteurised?
5. What do you mean by dough rising? How this can be achieved?
6. How cereals can be considered as microbial substrate?
7. Cite the advantages of usage of sourdough.
8. Describe the various LABs useful in preparing sourdough.
9. Demonstrate the role of yeasts in sourdough making?

Unit 4

Answer the following questions in one to two words (1 mark each)

1. Which is the starting material of sauerkraut fermentation?

Answer the following short questions (2 marks each)

1. What do you mean by fu-choy & mei-kan-choy?
2. Describe the biochemical changes brought about in sauerkraut fermentation.
3. What are the natural antibacterials found in cabbages?
4. What is the purpose of sauerkraut fermentation?

Answer the following semi-descriptive questions (3 marks each)

1. Why fully ripened cucumbers are unsuitable for pickling?
2. How the cabbage is pre-treated in sauerkraut fermentation?
3. Indicate the role of salt in sauerkraut fermentation.
4. What are the principal heterofermentative LABs involved in sauerkraut fermentation?
5. Demonstrate the role of homofermentatives in storage of cabbage.
6. Define the terms: Pink kraut, Soft kraut, Off-flavoured kraut.

Answer the following descriptive questions (4 & more marks each)

1. Comment on the microbes associated with natural fermentation of cucumber pickle?
2. Describe the microbiological aspects of leaf mustard pickle fermentation briefly.

Unit 5

Answer the following questions in one to two words (1 mark each)

1. What is the main LAB involved in meat fermentation?
2. How was the term 'sausage' coined?
3. Define: Frankfurter; Bologona.
4. What are biogenic amines?
5. Give one example of amylolytic LAB.
6. What are puti shidal & phasa shidal?
7. Give the examples of fishes used to prepare lonailish.

Answer the following short questions (2 marks each)

1. Define the role of ascorbate in meat pre-processing?
2. Cite the difference between semi dry & air dried sausage.
3. What role do casings play in sausage preparation?
4. Why the fish fermentation is not considered as conventional type of fermentation?
5. State the role of garlic in fish fermentation process.
6. What is the utility of 'matka' in NE Indian fish fermentation?
7. What are the bacterial types to carry out lonailish fermentation?
8. What do you mean by hentak & tungtap?

Answer the following semi-descriptive questions (3 marks each)

1. What are various types of sausages?
2. Enlist the various purposes of smoking of the meat.
3. What do you mean by sucuk? Where was it started?
4. Discuss the various beneficial effects of fermented meat.
5. How the LABs are selected for starter culture in meat fermentation?

6. What are the specific roles of molds in meat fermentation?
7. Cite the major differences between two types of fermented fishes.
8. Indicate the difference between fish sauce & paste.
9. State the microbial role in shidal preparation briefly.

Answer the following descriptive questions (4 & more marks each)

1. Cite some examples of aroma generating compounds formed in meat fermentation.
2. Briefly mention the role of yeasts in meat fermentation.
3. Colour of cured meat is indicative of meat quality- justify.
4. Cite some examples of aroma generating compounds formed in meat fermentation.
5. What are the two main types of fermented fish?
6. What are the autochthonous bacteria of fish?
7. Describe the fish fermentation with carbohydrate specially mentioning the role of carbohydrates

Unit 6

Answer the following questions in one to two words (1 mark each)

1. Define probiotic & symbiotic foods.
2. Define koumiss.

Answer the following short questions (2 marks each)

1. What is bio-yoghurt?
2. What is the utility of mare's milk in koumiss fermentation?

Answer the following semi-descriptive questions (3 marks each)

1. Cite the unique features of kefir.
2. Discuss the similarities & dissimilarities of koumiss & kefir.
3. Mention the microflora used in koumiss preparation briefly.

Answer the following descriptive questions (4 & more marks each)

1. Describe the preparation of acidophilus milk.
2. What kind of drawback is associated with L. acidophilus in acidophilus milk preparation? How can that be solved?
3. State the microbes involved in kefir fermentation with their respective roles.

Head of the Department