

Name :

Roll No. :

Invigilator's Signature :

CS/B.Tech (FT)/SEM-7/FT-703B/2010-11

2010-11

FERMENTED FOOD PRODUCTS

Time Allotted : 3 Hours

Full Marks : 70

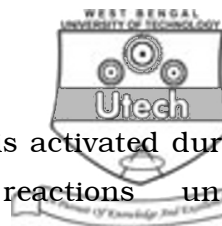
The figures in the margin indicate full marks.

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

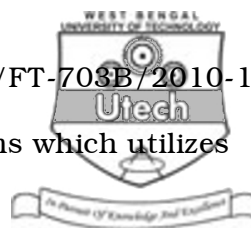
GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for the following : $10 \times 1 = 10$
- i) Which one of the following product involves alkaline fermentation ?
- a) *Natto* b) *Dawadaw*
- c) *Kenima* d) All of these.
- ii) Which of the following set of biochemical pathways are common in carrying out respiration, alcohol fermentation and lactic acid fermentation ?
- a) Glycolysis
- b) Kreb's cycle
- c) Hexose monophosphate
- d) Phosphoketolase.



- iii) Which one of the following enzymes is activated during post-pyruvic acid biochemical reactions under anaerobic conditions ?
- a) Pyruvate formate lyase
 - b) Alcohol dehydrogenase
 - c) Both (a) and (b)
 - d) Neither (a) nor (b).
- iv) Xylulose-5-phosphate is an important intermediate in which one of the following metabolic pathways ?
- a) EMP
 - b) Pentose phosphate
 - c) Leloir
 - d) Entner-Duodroff.
- v) What deficiency in grapes leads to excess H_2S production during wine fermentation ?
- a) Carbon
 - b) Water
 - c) Potassium
 - d) Nitrogen.
- vi) Lactic acid bacterial uniquely synthesize which one of the following enzymes that catalyzes hydrolysis of lactose to glucose and galactose ?
- a) α -galactosidase
 - b) β -galactosidase
 - c) γ -galactosidase
 - d) None of these.
- vii) Must (the substrate for wine fermentation) is also known as
- a) Baby wine
 - b) Immature wine
 - c) Green wine
 - d) Young wine.



- viii) Heterotrophs are those microorganisms which utilizes
- Organic electron doner
 - Light as energy source
 - CO₂ as source of carbon
 - None of the above.
- ix) Obligate anaerobes lack which one of the following enzymes making them susceptible to oxygen ?
- Catalase
 - Pyruvate kinase
 - Both (a) and (b)
 - Neither (a) nor (b).
- x) Which of the following is a dry sausage ?
- Salami
 - Pepperoni
 - Plockwurst
 - All of these.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

- What is called fermented foods ? Name two fermented products made from milk and grape. $3 + 2$
- What is called Baker's Yeast ? Discuss the process for manufacturing commercial quality Baker's Yeast. $1 + 4$
- What is the difference between wine and vinegar ? Discuss the step for production of wine and vinegar starting from rice. $2 + 3$
- Give classification of various types of fermented meat products. What is the process for manufacturing tofu ? $2 + 3$
- What is known as surimi ? What is the process for preparing surimi ? $2 + 3$



GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

7. Briefly describe malting and its significance in beer fermentation. What is 'wort' ? Briefly describe the biochemical pathways carried out during beer fermentation. $7 + 2 + 6$
8. Describe the significance of the two lactic starters in yogurt fermentation giving a brief sequential account of the fermentation process. Who first established that excess organic acid production by naturally occurring lactic acid bacteria is responsible for inferior quality of beer and wine ? How is this problem solved during beer processing ? How do exopolysaccharide-producing strains improve yogurt quality ? $10 + 1 + 2 + 2$
9. Give a brief description of processing of an internally mold-ripened cheese, and surface mold-ripened cheese with appropriate flow-diagrams.
What are the raw materials of the following types of vinegars ?
 - i) Malt Vinegar
 - ii) Cider vinegar.What is the significance of citrate salts in cheese milk for production diacetyl, one of the major characteristic flavor compounds in cheese ? $12 + 1 + 2$
10. Write short notes on any *three* of the following : 3×5
 - a) Fish sauce and soy sauce
 - b) Pickles and fermented cabbage
 - c) Whey based fermented products
 - d) Cheese and butter
 - e) Probiotic foods
 - f) Safety criteria of fermented foods.