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GIET MAIN CAMPUS AUTONOMOUS GUNUPUR – 765022

B. Tech Degree Examinations, December – 2020

(Seventh Semester)

**BBTPE 7021- Food Biotechnology**

(Biotechnology)

Time: 2 hrs

Maximum: 50 Marks

**The figures in the right hand margin indicate marks.****PART – A: (Multiple Choice Questions)****(1 x 10 = 10 Marks)**Q.1. Answer ALL questions

- a. According to the WHO, the word probiotics refers to \_\_\_\_\_ that provide health benefits.
  - (i) Killed microbes
  - (ii) Live microbes
  - (iii) Microbial toxins
  - (iv) Enzymes
- b. In the alcoholic beverage preparation, the word 'Wort' represents
  - (i) aqueous extract of malt
  - (ii) ethanolic extract of malt
  - (iii) aqueous extract of barley
  - (iv) ethanolic extract of barley
- c. Identify the ideal substrate for the production of single-cell proteins from the following.
  - (i) Methane gas
  - (ii) Ethane gas
  - (iii) chloroform
  - (iv) carbondioxide
- d. Proteases are enzymes that are added to milk during cheese production to hydrolyze
  - (i) kappa casein
  - (ii) beta casein
  - (iii) alpha casein
  - (iv) delta casein
- e. Glucose syrup can be produced by
  - (i) acid hydrolysis
  - (ii) enzyme hydrolysis
  - (iii) acid and enzyme hydrolysis
  - (iv) oxidation
- f. The enzymatic browning is due to the phenol oxidation is
  - (i) phenolase
  - (ii) tyrosinase
  - (iii) catecholase
  - (iv) orthoquinones
- g. The most spoilage bacteria flourish at
  - (i) acidic pH
  - (ii) neutral pH
  - (iii) alkaline pH
  - (iv) at all pH conditions
- h. Water activity can act as \_\_\_\_\_ in the food spoilage
  - (i) an intrinsic factor
  - (ii) dispersion media
  - (iii) diluent
  - (iv) conductor
- i. Pick out the fermented food in which the starting substrate is shredded cabbage.
  - (i) Sauerkraut
  - (ii) Pickles
  - (iii) Green olives
  - (iv) sausage
- j. Why the process of blanching is required for the vegetables before freezing?
  - (i) to maintain texture
  - (ii) to maintain color
  - (iii) to prevent microbial action
  - (iv) to denature enzymes

**PART – B: (Short Answer Questions)**

**(2 x 5 = 10 Marks)**

Q.2. Answer ALL questions

- a. Why there is a requirement of food additives?
- b. What are the desired properties of an organism to be used in the fermented foods?
- c. How the glucose syrup is produced and highlight its enzymic action?
- d. Why does reducing the pH of food lower the chances of food spoiling?
- e. What is a minimum water requirement of spoilage causing microorganism?

**PART – C: (Long Answer Questions)**

**(6 x 5 = 30 Marks)**

Answer ANY FIVE questions

Marks

3. What is Single cell protein? Discuss its impact in modern foods and describe its production technology. (6)
4. Why are GM crop based foods produced? What are the main issues of concern for human health? (6)
5. Write the characteristics features of enzymes and describe their major role in the fat/oil industries with an appropriate case study. (6)
6. Illustrate the production of any value added bioproduct with the utilization of food waste with a neat process flow diagram. (6)
7. What is microbial food spoilage and explain the metabolic activities of microbes which lead to food spoilage? (6)
8. Outline the post-harvest technology of any food product of your interest with the neat process flow sheet. (6)
9. Explain the microbiology of foods of plant origin and discuss the strategies to prevent from the food spoilage. (6)
10. Describe in detail on the microbiology of meat, fish, poultry and egg and highlight the control of these food borne pathogens. (6)

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