

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION- 2023

B.Tech-VIII Semester (BT)

COURSE CODE(CREDITS):03 21131W13T831

MAX. MARKS: 35

COURSE NAME: Food Processing and Engineering

MAX. TIME: 2 Hours

COURSE INSTRUCTORS: Dr Anil Kant

*Note: All questions are compulsory. Marks are indicated against each question in square brackets.*

Q.1

- a. Let you be assigned the task of selecting a location for setting up a food processing plant. Make a list of important factors you would consider to select the location. [2]CO II
- b. List different parts and functional units of a food processing plant building. [2]CO III

Q.2

- a. What is food fermentation and fermented foods? Distinguish natural and controlled food fermentation citing suitable examples. Fermentation is a global tradition. Justifies the statement citing suitable examples of fermented foods from different parts of the world. [3] CO II
- b. Mentions key characteristics, important species and significance to food technology, of any two groups of microorganisms i) *Lactococcus* ii) Acetic acid Bacteria iii) *Penicillium* and *Aspergillus* [4]CO II

Q.3

- a. What are the functions of food packaging? Discuss following food packaging material and or packaging technologies i) Paper and card board ii) plastic and polythenes iii) Modified atmosphere packaging [4]CO V
- b. Distinguish positive and negative mixtures. Outline the design and working of following mixing equipment and their significance in food processing. i) Sigma Blade mixer ii) V cone tumbling mixture [4]COIII, IV

Q.4

- a. How wheat is added during the soy sauce production process. What characteristics are imparted by its addition? [2]CO II
- b. Give a summary of events which occur during growth of fungi on soybean substrate, succession of different microorganisms during fermentation of moromi. [3]CO II
- a. Why has tempeh become a popular fermented food in the USA in such a short period of time? It is most suitable amongst soya based fermented foods to be produced and marketed in India. Present arguments in favor of the above statement. [3] CO II, III

P.T.O

Q.5 Do any four

[2x4=8] CO II, IV

- a. How is bread fermentation different from all other food fermentations?
- b. What should be the strain selection criteria for bread fermentation?
- c. Mention bread ingredients used to achieve following characteristics in bread making i) improvement of dough structure ii) Weakening of dough structure iii) As a process aid in mixing
- d. Why is sucrose utilized last amongst glucose and maltose during bread fermentation by baker's yeast?
- e. Bread fermentation is carried out at 25-28 C despite optimum temperature for yeast growth is 36-39 C. Give reasons.