

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)**

**CLASS: IMSC
BRANCH: FOOD TECHNOLOGY**

**SEMESTER : V
SESSION : MO/19**

SUBJECT: IMF5007 FERMENTER FOOD PRODUCTS

TIME: 3 HOURS

FULL MARKS: 60

INSTRUCTIONS:

1. The question paper contains 7 questions each of 12 marks and total 84 marks.
 2. Candidates may attempt any 5 questions maximum of 60 marks.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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- Q.1(a) Enlist the names of industrially important fermentation processes. [2]
Q.1(b) Write notes on freeze drying and cryopreservation methods used for preservation of microbe cultures. [4]
Q.1(c) Differentiate solid substrate culture and submerged liquid culture media. [6]
- Q.2(a) Draw a simple schematic of a sparger indicating various parts. [2]
Q.2(b) Write brief notes on Michaelis-Menten and Monod models. [4]
Q.2(c) Explain sulphite oxidation method for determination of $K_L a$ in detail. [6]
- Q.3(a) What is meant by 'RIPP' in downstream processing of a fermentation process? [2]
Q.3(b) Describe the important methods used for cell disruption in summarized form. [4]
Q.3(c) Write detailed notes on types of process control modes. [6]
- Q.4(a) Write short notes on denatured ethanol and disinfectant ethanol [2]
Q.4(b) Write summarized notes on sterilization methods used in fermentation industry. [4]
Q.4(c) Draw a neat flowsheet for production of ethanol by malt fermentation with clear sequences. [6]
- Q.5(a) Draw a simple flowsheet depicting mushroom cultivation. [2]
Q.5(b) Differentiate the six stages of fermentation involved in baker's yeast production. [4]
Q.5(c) Describe Gluconic acid production with a neat flow sheet showing all sections. [6]
- Q.6(a) Describe kefir production method. [2]
Q.6(b) Draw a neat flowsheet depicting soy sauce production with all parameters. [4]
Q.6(c) Describe the various steps involved in general cheese manufacture with a flowsheet. [6]
- Q.7(a) Write brief notes on Punjabi Warri. [2]
Q.7(b) Write short notes of packaging materials used in Bikanerwala food industry. [4]
Q.7(c) Describe Idli making process with a neat flowsheet along with all salient points. [6]

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