

August 2021

FERMENTATION TECHNOLOGY*Time Allowed: 1.5 Hours**Full Marks: 70***Answer to Question No. 1 is compulsory and Answer any two questions from the rest.**

1. Answer the following questions (any twenty): 2x20

Fill in the blanks:

- i) _____ fermentation helps in sauerkraut preparation.
- ii) _____ microorganism produces neomycin antibiotic naturally.
- iii) _____ microorganism produces vitamin B12 commercially.
- iv) _____ sauce is a food item produced by solid state fermentation process.
- v) _____ is the scientific name of mushroom.
- vi) *Saccharomyces cerevisiae* used in _____ production from sugar.
- vii) _____ produced on fermentation of blackstrap molasses.
- viii) _____ acid is another name of lactic acid.

State whether the following statements are True or False:

- ix) White wine can be prepared from whole grapes.
- x) Antibiotic can kill all microorganism.
- xi) Streptomycin can also be used as pesticide.
- xii) Animal feed can be prepared from rice bran by solid state fermentation.
- xiii) Mycelial spawn produced during cultivation of mushroom.
- xiv) Alcohol percentage in fermented beer is 40%.
- xv) Vinegar is a mixture of water and acetic acid.
- xvi) Citric acid is a strong organic acid.

Answer the following question in short:

- xvii) Name one organism with the help of which we can produce vinegar industrially.
 - xviii) Name the organism which can produce streptomycin industrially.
 - xix) Name organism helps in vitamin B2 commercial production?
 - xx) Define antibiotic.
 - xxi) Write any one use of *amyloglucosidae*.
 - xxii) What do you mean by solid state fermentation?
 - xxiii) Site one example of homofermentative bacteria
 - xxiv) What is the champagne?
 - xxv) Define chill proofing of beer.
2. Write the fermentative production of dahi from milk. With a complete flow diagram discuss the process of mushroom cultivation. 7+8
3. With a complete flow diagram discuss the process of baker's yeast production. How compressed Yeast prepared from yeast strain. 8+7
4. What is malt? What are malt adjuncts? What is the function of hops in beer production? With a flow diagram discuss the process of malting and brewing in beer production. 2+2+3+8

5. Discuss the process of ethyl alcohol production from molasses. In the broth how would you increase the alcohol concentration? From a fermentation broth how can you obtain 100% alcohol? 9+3+3
 6. What is vinegar? How vinegar produced from fruit juices? Discuss the quick vinegar process for vinegar production. 3+3+9
 7. How would you produce lactic acid industrially, give only flow diagram. Briefly describe the recovery of lactic acid from its fermentation broth. Write the use of citric acid. 7+5+3
 8. Name two saccharifying agents. Describe the methods for their preparation. Mention two important uses for each of them. 3+9+3
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