

17649

21718

3 Hours / 100 Marks

Seat No.

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- Instructions* –
- (1) All Questions are *Compulsory*.
 - (2) Answer each next main Question on a new page.
 - (3) Illustrate your answers with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.
 - (5) Assume suitable data, if necessary.
 - (6) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.
 - (8) Use of Steam tables, logarithmic, Mollier's chart is permitted.

Marks

1. **Attempt any FIVE of the following:** **20**
 - a) Define:
 - (i) Bacteria
 - (ii) Enzyme
 - (iii) Yeast
 - (iv) Micro-organism
 - b) Describe pretreatment of enzyme used in alcohol.
 - c) Explain azeotropic distillation with example.
 - d) Explain the manufacture of malt Alcohol.

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- e) Explain the importance of sterile Air used in pre-fermenter.
- f) Differentiate between BOD and COD. (Any two points)
- g) Explain Enzyme dozing.

2. Attempt any FOUR of the following: 16

- a) Explain the importance of yeast acidification.
- b) Explain the term stimulation and acclimatisation of yeast.
- c) Explain primary method of treating Distillery waste water.
- d) Explain the method of preparation of yeast in laboratory.
- e) Explain Activated sludge process for treating waste water.
- f) List the different pollutants present in distillery waste water.

3. Attempt any FOUR of the following: 16

- a) Describe the biological treatment method of alcohol industry waste water.
- b) Explain the importance of nutrients for yeast.
- c) State the toxicological effects of distillery waste water.
- d) Give taxonomy of yeast with neat sketch.
- e) Explain the importance of Bacteria in fermentation process.
- f) Explain the process of maintenance of yeast vessel.

4. Attempt any FOUR of the following: 16

- a) Explain yeast morphology with neat diagram.
- b) Explain batch fermentation with neat diagram.
- c) List the various unit operations involved in alcohol manufacturing process.
- d) Explain the importance of distillation in alcohol manufacturing.
- e) State the material of construction of vessel for yeast propagation. Suggest suitable material.
- f) State the MPCB norms for alcohol industry waste water.

- 5. Attempt any FOUR of the following:** **16**
- a) Explain the evaporation process carried out in alcohol industry.
 - b) Explain principle of yeast propagation.
 - c) Explain the manufacturing process of brandy.
 - d) Define Industrial spirit and List it's uses.
 - e) List the different by products of fermentation.
 - f) List eight nutrients for good yeast growth.
- 6. Attempt any TWO of the following:** **16**
- a) Explain manufacturing of whisky with neat process flow sheet.
 - b) Describe manufacture of vodka with neat process flow sheet.
 - c) Explain the manufacturing process of Rum with neat flow diagram.
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