

17649

15162

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) Abbreviations used convey usual meaning.

Marks

1. **Answer any FIVE of the following:** **20**
- a) List the name of unit operations involved in alcohol manufacturing.
 - b) Why are nutrients required for yeast?
 - c) Why is sterile air used in pre-fermenter?
 - d) Explain the terms BOD and COD.
 - e) Outline the process for manufacture of rum.
 - f) What is acidification of yeast? Why is it required?
 - g) Describe biological treatment of effluents from alcohol industry.
2. **Answer any FOUR of the following:** **16**
- a) Why is distillation necessary in alcohol manufacturing?
 - b) List the name of eight nutrients required for yeast to grow.
 - c) State the different materials of construction for yeast propagation vessel. Which is the preferred one?
 - d) Explain the manufacture of malt alcohol.
 - e) State the toxicological effects of distillery waste water.
 - f) Explain enzyme doring.

P.T.O.

- 3. Answer any FOUR of the following:** **16**
- a) Explain azeotropic distillation with an example.
 - b) How do bacteria affect the fermentation process?
 - c) Explain how maintenance of yeast vessel is carried out.
 - d) Explain the manufacture of brandy.
 - e) Write the CPCB norms/ MPCB norms for alcohol industry waste water.
 - f) Describe preparation of yeast in laboratory.
- 4. Answer any FOUR of the following:** **16**
- a) Describe pretreatment of enzyme used of alcohol.
 - b) Explain evaporation process as carried out in chemical industry.
 - c) Give taxonomy of yeast with neat structure.
 - d) Explain principle of yeast propagation.
 - e) Describe a primary treatment carried out for treating distillery waste water.
 - f) Define industrial spirit. State its uses.
- 5. Answer any FOUR of the following:** **16**
- a) List the different by products produced during the fermentation process in alcohol industry. State their uses.
 - b) Define:
 - (i) bacteria
 - (ii) enzyme
 - (iii) yeast
 - (iv) micro-organism
 - c) Draw the flow diagram, for the manufacture of Vodka.
 - d) State the different pollutants present in distillery waste water.
 - e) Explain morphology of basic yeast with a neat diagram.
 - f) Explain meaning of : Stimulation and acclimatisation of yeast.

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[3]

Marks

6. Answer any TWO of the following:

16

- a) Explain batch fermentation with suitable example. Draw the flow sheet also.
 - b) Explain with a flow - sheet the manufacture of whisky.
 - c) Draw a labelled diagram of activated sludge process and explain the process.
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