

17649

21415

3 Hours / 100 Marks

Seat No.

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- Instructions* – (1) All Questions are *Compulsory*.
(2) Illustrate your answers with neat sketches wherever necessary.
(3) Answer each next main Question on a new page.
(4) Figures to the right indicate full marks.

Marks

- 1. Answer any FIVE of the following: 20**
- Define distillation. State the types of distillation.
 - Draw a schematic diagram of a distillation apparatus.
 - Define 'yeast' and 'bacteria' with suitable examples of each.
 - Describe morphology of yeasts.
 - State and explain the use of enzyme in manufacturing malt alcohol.
 - Name the raw materials required for manufacturing of rum and whisky.
 - List out the contents of the waste from alcohol industry.

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- 2. Answer any TWO of the following: 16**
- a) (i) Describe azeotropic distillation with a labelled diagram.
 - (ii) State its two advantages.
 - b) (i) Define liquefaction (pre-treatment).
 - (ii) Explain the process of pre-treatment of enzyme.
 - (iii) State its significances (any two).
 - c) (i) What is the meaning of “yeast acidification”.
 - (ii) State and explain its significances.
- 3. Answer any TWO of the following: 16**
- a) Explain the material of construction and maintenance of yeast vessel w.r.t. alcohol industry.
 - b) Describe manufacturing of Vodka with a flow diagram.
 - c) (i) Describe toxological effects of effluents from alcohol industry.
 - (ii) Name the chemicals that are used to treat them before discharging them to natural sources.
- 4. Answer any TWO of the following: 16**
- a) Describe the Government stipulated conditions for alcohol industry waste water.
 - b) Describe propagation of yeasts.
 - c) Describe the process of fermentation.
- 5. Answer any TWO of the following: 16**
- a) Compare yeast and bacteria w.r.t. taxonomy and growth.
 - b) Describe the use of sterile air system in the pre-fermenter.
 - c) Describe manufacturing of industrial spirit with a neat flow chart.

17649

[3]

Marks

6. Answer any TWO of the following:

16

- a) Describe the following :
 - (i) Enzyme dosing.
 - (ii) Nutritional requirements of yeast.
 - b) Describe the manufacturing process of brandy with a neat flow diagram.
 - c) (i) Describe the primary treatment of waste water from alcohol industry.
 - (ii) List out the biological treatments normally done to treat the same.
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