

# 17649

**16172**

**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) Figures to the right indicate full marks.  
(4) Assume suitable data, if necessary.  
(5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

- 1. Attempt any FIVE of the following:** **20**
- Define ‘evaporation’. State factors on which rate of evaporation, depend.
  - Draw a labelled diagram of a typical ‘fermentor’ along with its accessories. State function of the accessories.
  - Explain the concept of ‘nutrition’.
  - How is yeast vessel to be maintained?
  - Differentiate : rum and whiskey.
  - Write raw materials and reaction(s) associated with manufacture of ‘malt alcohol’.
  - Define ‘pollution’. Name method of pollution control.

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- 2. Attempt any TWO of the following:** **16**
- a) Describe with a diagram, the process of ‘continuous distillations’.
  - b) Describe pre-fermentation practices for yeast propagation.
  - c) Draw a flow-diagram and describe process of Vodka manufacture.
- 3. Attempt any TWO of the following:** **16**
- a) (i) Define ‘yeast’. 1
  - (ii) Describe nutritional requirements of yeast. 7
  - b) How do yeast, propagate? Explain.
  - c) ‘Government has stipulated conditions for alcohol industry’s waste water’. Explain them.
- 4. Attempt any TWO of the following:** **16**
- a) Describe process of batch fermentation.
  - b) (i) Explain the terms:
    - 1) morphology
    - 2) taxonomy
  - (ii) Describe morphology of yeasts.
  - c) (i) Define and write uses of:
    - 1) industrial spirit
    - 2) absolute alcohol
  - (ii) Draw flow-sheet for the manufacture of industrial spirit.

- 5. Attempt any TWO of the following:** **16**
- a) (i) Define 'bacteria'. 1  
(ii) Explain with examples, use of bacterias in fermentation. 7
- b) Describe a yeast vessel. Explain choice of its material of construction.
- c) Describe toxicological effects of waste water from alcohol industry.
- 6. Attempt any FOUR of the following:** **16**
- a) (i) Define:  
1) Minimum boiling azeotrope  
2) Maximum boiling azeotrope  
(ii) Give example of azeotropic distillation.
- b) Describe pretreatment of enzymes.
- c) What is 'pre-fermentation'? Why is sterile air system, needed in a pre-fermentor?
- d) 'Yeast, enzymes play an important role in alcohol technology'. Explain.
- e) Define :  
(i) malt alcohol  
(ii) brandy  
(iii) vodka  
(iv) denatured alcohol
- f) Explain merits of biological treatment for effluents from alcohol industry.
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