

17427

21819

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. Abbreviation used convey usual meaning.
 - (5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.
 - (6) Abbreviation used convey usual meaning.

Marks

1. (A) Answer any SIX :

6 × 2 = 12

- (a) List various types of paper.
- (b) Define the saponification value of oil.
- (c) What is vinegar ?
- (d) Define fermentation. Give one example.
- (e) List any two sources of cellulose pulp.
- (f) Define :
 - (i) Ioclene value
 - (ii) Free acid value of an oil

[1 of 4]

P.T.O.

17427

[2 of 4]

(g) State the name of enzymes used in manufacturing of alcohol from molasses.

(h) Define soap.

(B) Answer any TWO :

2 × 4 = 8

(a) State any two uses of PVC and polyester each.

(b) Draw flow-sheet for manufacture of paint.

(c) Draw a neat sketch for hydrogenation of oil.

2. Answer any FOUR :

4 × 4 = 16

(a) Draw flow diagram for manufacture of ethyl alcohol from molasses.

(b) Name the types of varnishes and state its uses.

(c) (i) List raw materials for the manufacture of paper.

(ii) Which are the additives used to improve quality of paper ?

(d) Draw a labelled flow diagram for the manufacturing of phenol from cumene.

(e) Draw the flow-sheet for manufacturing of polyethylene by Ziegler process.

(f) Name the bi-products and state their uses in relation to manufacturing of oil.

3. Answer any FOUR :

4 × 4 = 16

(a) Draw and describe manufacturing process of acetic acid from acetaldehyde.

(b) Differentiate between varnish and lacquers.

(c) Draw a flow diagram for the pulp manufacture by sulphate (kraft) process.

17427

[3 of 4]

- (d) Draw the flow-sheet and describe with reaction, Rasching process of phenol manufacture.
- (e) Write the reaction involved in manufacturing of polystyrene. Describe its manufacture.
- (f) Describe manufacturing of PVC.

4. Answer any FOUR :

4 × 4 = 16

- (a) Explain with examples classification of paint.
- (b) (i) Define a polymer. (1)
(ii) Define an initiator. Name two types of initiator. (3)
- (c) Describe one process for manufacturing of butanol.
- (d) Describe the cleansing action of soap.
- (e) Differentiate between soaps and detergents.
- (f) (i) Write the raw materials, reactions involved in manufacture of rayon. (3)
(ii) State uses of Rayon. (1)

5. Answer any TWO :

2 × 8 = 16

- (a) Describe with reactions and flow-sheet manufacturing of ethanol from corn.
- (b) Describe with a flow-sheet manufacture of detergent from saturated fatty alcohol.
- (c) (i) With a neat flow-sheet, explain manufacturing of phenol by toluene oxidation process. (6)
(ii) State commercial application of phenol. (2)

P.T.O.

6. Answer any TWO :

2 × 8 = 16

- (a) Draw a labelled flow diagram of manufacturing phenol via benzene sulphate process.
 - (b) Explain manufacturing process of paper from pulp.
 - (c) Write distinguishing features between addition and condensation polymerisation. Name two such polymers each.
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