

22611

24225

3 Hours / 70 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 answer with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.
 - (5) Assume suitable data, if necessary.
 - (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. **Attempt any FIVE of the following:** **10**
- a) List out any four Indian petrochemical Refineries.
 - b) Name any four test properties of gasoline.
 - c) Define thermal cracking.
 - d) Name any four petrochemicals derived from C_1 hydrocarbon.
 - e) State the difference between petroleum refinery petrochemicals industry. (Any two)
 - f) List any four petrochemicals derived from C_4 hydrocarbon.
 - g) Give the reaction involved in the manufacturing of methanol.

P.T.O.

- 2. Attempt any THREE of the following:** **12**
- a) State the different fractions obtained from crude oil with their boiling ranges. (Any four)
 - b) Give the reaction involved in the manufacture of –
 - i) Styrene
 - ii) Butadiene.
 - c) State the composition of crude oil both in terms of elements and compounds.
 - d) Explain the Hydrofluoric acid alkylation process with neat sketch.
- 3. Attempt any THREE of the following:** **12**
- a) Explain delayed coking of crude oil with diagram.
 - b) Describe the manufacturing of ethylene oxide with a neat flow diagram.
 - c) Draw the diagram for fluidized bed catalytic cracker and label the parts.
 - d) Define the following terms –
 - i) Fire point
 - ii) Drop point
 - iii) Cetane number
 - iv) Calorific value.
- 4. Attempt any THREE of the following:** **12**
- a) Give the advantages (any two) and disadvantages (any two) of crude oil over other energy sources.
 - b) Explain the manufacturing of benzoic acid from toluene.
 - c) Explain catalytic reforming with diagram.
 - d) Explain the Hydrogenation process with neat diagram.
 - e) Explain the udex process for recovery of BTX from reformat.

- 5. Attempt any TWO of the following:** **12**
- a) Explain the construction and working of drop point apparatus with neat diagram.
 - b) Explain the manufacturing of aniline from Phenol.
 - c) Explain the manufacturing of propylene oxide.
- 6. Attempt any TWO of the following:** **12**
- a) Explain the vacuum distillation of crude oil with neat diagram. State the importance of vacuum distillation in petroleum refining.
 - b) Describe with a flow sheet manufacturing of Ethanol. Give the reaction also.
 - c) Explain the hazardous waste treatment methods followed in Petrochemical Industry.
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