

# 22608

**23124**

**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 answers 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) Give any four object selection methods in CAD.
  - b) State any four formatting commands in CAD.
  - c) Draw neat sketch of elbow and tee.
  - d) Draw a neat sketch of roller support.
  - e) Draw triangular and square pitch pattern.
  - f) List any four types of heads used for vessel.
  - g) Draw segmental baffle pattern. (Any two)
- 2. Attempt any FOUR of the following :** **12**
- a) Explain importance of CAD in chemical Engineering field.
  - b) Explain procedure of Erase and Break command used in CAD.
  - c) Draw neat sketch of union joint.
  - d) Draw a neat sketch of saddle support.

P.T.O.

- 3. Attempt any FOUR of the following :** **12**
- a) Explain any two CAD initial setting commands.
  - b) Explain any two formatting commands in CAD.
  - c) Draw neat sketches of plain and coil jacket.
  - d) Draw neat sketch of globe valve.
- 4. Attempt any FOUR of the following :** **12**
- a) Draw a neat sketch of gate valve.
  - b) Draw a neat sketch of bracket support.
  - c) Draw a neat sketch of single rod hanger and angle iron hanger.
  - d) Draw any two types of heads for vessels.
  - e) Draw a neat sketch of kettle type reboiler.
- 5. Attempt any TWO of the following :** **12**
- a) Preheated and compressed isopropanol (IPA) vapours is sent to a catalytic tubular reactor maintained at 773 K. Hot gases from reactor are condensed and scrubbed with water. In the scrubber IPA-Acetone mixture is separated from hydrogen gas. The binary mixture is then passed through a fractionating column in which acetone is removed from top and binary mixture of IPA-water is then, fed to another column where IPA is obtained as top product and water as bottom product.  
Draw block diagram of the process.
  - b) Draw process Flow Diagram of the process given in Q. 5 (a).
  - c) Draw the utility line diagram for the process described in Q. 5(a)
- 6. Attempt any TWO of the following :** **12**
- a) Draw a tank farm diagram for process described in Q.5(a).
  - b) Draw specification sheet for heat exchanger.
  - c) Draw neat sketch of Jacketed batch reactor.
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