

'I' Scheme

Sample Question Paper

Program Name : Diploma in Chemical Engineering
Program Code : CH
Semester : Sixth
Course Title : Chemical Engineering Drawing
Marks : 70

22608

Time: 3 Hrs.

Instructions:

- (1) All questions are compulsory.
- (2) Illustrate your answers with neat sketches wherever necessary.
- (3) Figures to the right indicate full marks.
- (4) Assume suitable data if necessary.
- (5) Preferably, write the answers in sequential order.

Q.1) Attempt any FIVE of the following.

(10 Marks)

- a) Give any two applications of Computer Aided Drafting (CAD) software in chemical industry.
- b) State the any two formatting commands use in CAD.
- c) Give the necessity of Pipe Joints and Fittings in chemical industry.
- d) Names the any two types of Pipe Supports and Vessel Supports.
- e) Draw neatly a Hemispherical dished head.
- f) Name methods of fixing tubes to tube sheet.
- g) Draw IS-3232 symbol of a) Plate column and b) Batch Reactor.

Q.2) Attempt any THREE of the following.

(12 Marks)

- a) Explain the fundamentals of Computer Aided Drafting CAD.
- b) Give the procedure of any four drawing command used in CAD.
- c) Draw a neat sketch of Union Joint.
- d) Draw neat and proportionate sketch of Single rod and Double rod hanger of pipe support.

Q.3) Attempt any THREE of the following.

(12 Marks)

- a) Explain the different object selection methods used in CAD.
- b) Give the procedure of any four modified command used in CAD.
- c) Draw a neat sketch of flange cast with pipe and welded neck flanges.
- d) Draw a neat and proportionate sketch of Skirt (Angular and Straight) support.

Q.4) Attempt any THREE of the following.

(12 Marks)

- a) Draw a schematic view of Gate Valve.
- b) Draw neat and proportionate sketch of Horizontal Vessel Supports.
- c) Draw a neat and proportionate sketch of a U-tube heat exchanger with nomenclature.
- d) Draw a neat control scheme for vaporizer.
- e) Prepare a specification sheet for the Batch Reactor.

Q.5) Attempt any TWO of the following.

(12 Marks)

- a) Draw any three types of heads used for the chemical process equipments.
- b) Absolute alcohol is obtained by carrying out the fractional distillation of 96% by wt. ethyl alcohol. The ethyl alcohol is fed to an azeotrope column where benzene is used as an azeotrope breaker. The ternary azeotrope of ethanol, benzene and water is formed as the overhead which is condensed and phase separation is achieved in a decanter. From the decanter, benzene rich layer is recycled to the azeotrope column & water rich layer is sent to a second fractionating column where water is drained as bottoms. Almost ethanol + benzene are removed from the top of recovery column which is recycled at the top of the azeotrope column. The bottom of azeotrope column gives pure ethanol (99.9%). Draw the process flow diagram of this plant.
- c) Draw a neat sketch of P & I diagram for alcohol plant. [See Q.5 (b)]

Q.6) Attempt any TWO of the following.

(12 Marks)

- a) Draw a neat sketch of ULD diagram for alcohol plant. [See Q.5 (b)].
- b) Draw a neat sketch of Utility Block Diagram, Equipment Layout and Tank Farm for alcohol plant. [See Q.5 (b)].
- c) Draw a neat and proportionate sketch of Jacketed Batch Reactor.

'T' Scheme

Sample Test Paper - I

Program Name : Diploma in Chemical Engineering
Program Code : CH
Semester : Sixth
Course Title : Chemical Engineering Drawing
Marks : 20

22608

Time: 1 Hour.

Instructions:

- (1) All questions are compulsory.
- (2) Illustrate your answers with neat sketches wherever necessary.
- (3) Figures to the right indicate full marks.
- (4) Assume suitable data if necessary.
- (5) Preferably, write the answers in sequential order.

Q.1 Attempt any FOUR.

(08 Marks)

- a) Give any two applications of Computer Aided Drafting (CAD) software in chemical industry.
- b) Give any two Grips editing commands used in CAD.
- c) State the necessity of Valves in Chemical process industry.
- d) Names any two types of pipe supports.
- e) Names any four CAD initial setting commands.
- f) Give any two applications of pipe fittings and joints used in chemical plant.

Q.2 Attempt any THREE.

(12 Marks)

- a) Explain the fundamentals of Computer Aided Drafting CAD.
- b) Draw a neat sketch of Tee, Nipple, Socket, and Plug.
- c) Draw a neat sketch of Socket and spigot joint.
- d) Draw a neat and proportionate sketch of Bracket or lug support.
- e) Draw a neat sketch of Globe Valve.
- f) Draw a neat and proportionate sketch of Roller Support.

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'I' Scheme

Sample Test Paper - II

Program Name : Diploma in Chemical Engineering
Program Code : CH
Semester : Sixth
Course Title : Chemical Engineering Drawing
Marks : 20

22608

Time: 1 Hour.

Instructions:

- (1) All questions are compulsory.
- (2) Illustrate your answers with neat sketches wherever necessary.
- (3) Figures to the right indicate full marks.
- (4) Assume suitable data if necessary.
- (5) Preferably, write the answers in sequential order.

Q.1 Attempt any FOUR.

(08 Marks)

- a) Draw a neat and proportionate sketch of Saddle plate support.
- b) Draw a neat sketch of any two types of Head / cover used for chemical process equipment.
- c) Draw different tube pitch arrangements in the shell and tube heat exchanger.
- d) Draw IS-3232 symbol of a) Plate column and b) Fluidized bed reactor.
- e) Name different types of flow diagrams used in flow sheeting.
- f) State important features of block diagram and process flow diagram.

Q.2 Attempt any THREE.

(12 Marks)

- a) Draw a neat and proportionate sketch of jacketed batch reactor with nomenclature.
- b) Draw a neat sketch of a 1-2 pass Shell and Tube heat exchanger with nomenclature.
- c) Draw neatly Anchor and Gate types of Paddle agitators used in tank reactors.
- d) Draw a neat Utility line diagram for a) Batch reactor b) Tray dryer.
- e) Draw a neat temperature control scheme for a) Batch reactor b) Cooler.
- f) Draw a comprehensive specification sheet of a Shell and tube heat exchanger.