

314336

12526

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) Use of Non-programmable Electronic Pocket Calculator is permissible.
- (7) 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) Draw the block diagram of feed-forward control system.
- b) List any two criterias for selection of control valve
- c) State principle of heat exchanger Shell & Tube type.
- d) State standard signal values of electronic and pneumatic transmission system.
- e) Explain the IP classification with example.
- f) State the need of valve positioner.
- g) Enlist different types of drying process used in Industry.

P.T.O.

- 2. Attempt any THREE of the following : 12**
- a) Describe the working of Ratio control system with neat diagram.
 - b) Draw neat labelled diagram of double seated globe valve.
 - c) Describe the ergonomic considerations of control room environment.
 - d) Explain any one explosion proof safety protection method in hazardous area.
- 3. Attempt any THREE of the following : 12**
- a) Differentiate between feed back and feed forward control system. (Any four points)
 - b) Draw control valve flow characteristics. Explain any one of them.
 - c) Describe the feedback control of Evaporation process with neat diagram.
 - d) Draw the neat sketch of break front control panel. Explain it.
- 4. Attempt any THREE of the following : 12**
- a) Describe the working of over ride control system for protection of Boiler equipment.
 - b) State the principle direct acting of and reverse acting control valve.
 - c) Describe the working of fluidised bed dryer process with neat diagram.
 - d) State benefits of HART. (Any four)
 - e) Classify the following materials in hazardous area.
 - i) Hydrogen
 - ii) Aluminium
 - iii) Coal
 - iv) LPG

5. Attempt any TWO of the following : 12

- a) Describe cavitation and flashing. Suggest remedies for the same the drawbacks of positioner.
- b) Describe the working of distillation column process. Draw cascade control system for distillation column process.
- c) Describe the working of SMART transmitter with neat diagram. State and four salient features of SMART Transmitter.

6. Attempt any TWO of the following : 12

- a) Describe the operation of Boiler process with neat labelled diagram. Explain one element control scheme for boiler.
 - b) Define intrinsic safety. Explain working of zener barrier ckt used in hazardous area for Intrinsic safety purpose.
 - c) i) Describe the working of split range control system with neat diagrams.
ii) State any two advantages of foundation field bus.
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