



17540

15162

3 Hours / 100 Marks

Seat No.

--	--	--	--	--	--	--	--

- 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) *Use of Non-programmable Electronic Pocket Calculator is **permissible**.*
 - (6) *Mobile Phone, Pager and any other Electronic Communication devices are **not** permissible in Examination Hall.*

- | | Marks |
|--|-----------------|
| 1. A) Attempt any three. | (3×4=12) |
| a) Draw block diagram for temperature control system. | 4 |
| b) Explain with block diagram electronic temp. transmitter. | 4 |
| c) Explain V to I converter with diagram. | 4 |
| d) State applications of Recorder (any four). | 4 |
| B) Attempt any one. | (6) |
| a) Draw block diagram of X-Y type Recorder. Explain its each block in brief. | 6 |
| b) Explain with neat diagram pressure to current converter. | 6 |
| 2. Attempt any two. | (16) |
| a) List different types of control panel. Draw break front type control panel. Explain it. | 8 |
| b) What are standard ranges of pneumatic and electronic signal transmission ? Explain flapper/ nozzle mechanism with neat diagram. | 8 |
| c) Give classification of hazardous area according to materials in brief. | 8 |
| 3. Attempt any four. | (4×4=16) |
| a) Explain the following terms. | 4 |
| i) Process load | |
| ii) Process lag | |
| b) Explain with block diagram single channel DAS. | 4 |

P.T.O.



	Marks
c) Describe ergonomic consideration of control room (any 4 points).	4
d) Draw block diagram of multichannel DAS.	4
e) Explain Zener barrier protection method with ckt. diagram.	4
4. A) Attempt any three.	(3×4=12)
a) Explain explosion proofing protection method in hazardous area.	
b) State the need of signal converters (any 4 points).	4
c) Give meaning of following.	4
i) IP45	ii) IP56
d) Draw ckt. of I to V convertor. Describe its working.	4
B) Attempt any one.	(6)
a) Explain neat labelled diagram of Strip chart Recorder.	6
b) Explain block diagram of SMART transmitter in brief.	6
5. Attempt any two.	(8×2=16)
a) List types of annunciator. Draw schematic diagram of typical alarm annunciation. Describe its operational sequence.	8
b) Give document points needed to design control panel.	8
c) Describe working of electronic force balance type pressure transmitter with diagram.	8
6. Attempt any four.	(16)
a) Define process dynamic. Give two benefits of process instrumentation.	4
b) Draw block diagram of process control syst.	4
c) Draw I to P converter. Explain its working.	4
d) Draw and explain dead weight tester for pressure guage calibration.	4
e) Draw block diagram of data logger system. Explain its working in brief.	4