

# Industrial Process Control

sem - VII

INST (CBGS)  
13-05-16

QP Code : 31259

(3 Hours)

[Total Marks: 80]

- N.B:
- (1) Question No.1 is **compulsory**.
  - (2) Answer any **three** questions from Question Nos. 2 to 6.
  - (3) Assume suitable data if necessary.

- 1 Answer any FOUR of the following questions:-
  - (a) Explain the measures provided for Hazard free plant. 5
  - (b) With the flow sheet symbol of distillation explain the significance of column pressure control. 5
  - (c) Explain HTST and HHST milk pasteurization techniques. 5
  - (d) Define shrinking and swelling effects in boiler. 5
  - (e) Explain the crystallization curve. 5
- 2
  - (a) State the types of evaporator and justify the need of selective control scheme. 10
  - (b) Discuss feed forward and bypass control scheme of H.E. 10
- 3
  - (a) Draw a neat block diagram of refinery process and explain instrumentation involved it. 10
  - (b) Define intrinsic safety. Explain hazardous area classification as per IEC and NEC standards. 10
- 4
  - a) Explain any two types of dryer with their control strategies. 10
  - b) With the help of diagram explain evaporating crystallizer and its control. 10
- 5
  - a) Explain the instrumentation involved in iron and steel industry. 10
  - b) Explain the runaway reaction. Discuss the temperature control scheme for reactor. 10
- 6 Write comprehensive notes on :- (any TWO) 20
  - a) Safety interlocks in fired reboiler.
  - b) 80/20 rule in intrinsic safety circuit design.
  - c) Gas turbine operation and control requirement.

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