

**B. TECH.**  
**(SEM VIII) THEORY EXAMINATION 2022-23**  
**COMPUTER PROCESS CONTROL**

Time: 3 Hours

Total Marks: 100

**Note:** Attempt all Sections. If require any missing data; then choose suitably.

**SECTION A**

- 1. Attempt all questions in brief. 2 x 10 = 20**
- (a) Explain the role of computers in process control.
  - (b) Explain Communication Networking in brief.
  - (c) Explain the elements of a computer aided process control system.
  - (d) Draw the ISO Reference Model for communication.
  - (e) Explain the need of modelling of the system.
  - (f) Define Goal.
  - (g) Explain the applications of statistical Control.
  - (h) Explain the advantages of Computerized Process Control.
  - (i) Explain the challenges faced in Electric oven temperature control.
  - (j) Explain the limitations of Cascade Control.

**SECTION B**

- 2. Attempt any three of the following: 10 x 3 = 30**
- (a) Describe the classification of Computer Aided process control system.
  - (b) Explain the data transfer techniques in detail.
  - (c) Describe Process Model and Physical Model.
  - (d) Describe the Predictive Control and Adaptive Control in detail.
  - (e) Explain Reheat Furnace temperature control in detail.

**SECTION C**

- 3. Attempt any one part of the following: 10 x 1 = 10**
- (a) Describe the architecture of Computer Aided process control system.
  - (b) Discuss the different types of Process related Interfaces in Control System.
- 4. Attempt any one part of the following: 10 x 1 = 10**
- (a) Explain the Real time Operating System in detail.
  - (b) Discuss the types of Computer Control Process Software.
- 5. Attempt any one part of the following: 10 x 1 = 10**
- (a) Define modelling and the various steps needed in modelling procedure of a system.
  - (b) Differentiate between Physical Model and Control Model.
- 6. Attempt any one part of the following: 10 x 1 = 10**
- (a) Explain Statistical Control and Intelligent Control in detail.
  - (b) Discuss Inferential Control and Cascade Control in detail.
- 7. Attempt any one part of the following: 10 x 1 = 10**
- (a) Describe the Computer Aided control of electric power generation plant.
  - (b) Discuss thickness and flatness control system for metal rolling.