

**B TECH**  
**(SEM VIII) THEORY EXAMINATION 2017-18**  
**COMPUTERIZED PROCESS CONTROL**

**Time: 3 Hours****Total Marks: 100**

**Note:** 1. Attempt all Sections. If require any missing data; then choose suitably.  
2. Any special paper specific instruction.

**SECTION A**

**1. Attempt all questions in brief. 2 x 10 = 20**

- a) What are the benefits of computers in process control?
- b) What are the elements in computer aided process control?
- c) What are the different computers aided software?
- d) What is operating system?
- e) What is modelling?
- f) Define Goal with suitable example?
- g) What is the need of result analysis?
- h) Write the application of cascade control strategy?
- i) What are the different industrial applications of Computer aided process?
- j) What are the advantages and disadvantage of Computer aided process?

**SECTION B**

**2. Attempt any three of the following: 10 x 3 = 30**

- a) Discuss with a neat sketch the architecture of computeraided control system in process industries.
- b) Describe with a neat sketch the ISO reference model forcommunication?
- c) Why we need modelling of the system? Explain the various steps used in modellingprocess of control?
- d) Discuss in detail about Adaptive control and Statistical control?
- e) How thickness and flatness is measured in metal rolling mill? If it is not to a desired value of thickness and flatness, then explain the controlling of both with suitable diagram. Also explain automatic gauge (thickness) control?

**SECTION C**

**3. Attempt any one part of the following: 10 x 1 = 10**

- a) Classify the computer aided process control system in detail?
- b) Discuss the various process related interfaces in the ControlSystem.

**4. Attempt any one part of the following: 10 x 1 = 10**

- a) Explain how a Real Time Operating System (RTOS) is used for process control application?
- b) Explain in detail different data transfer techniques?

**5. Attempt any *one* part of the following:**

**10 x 1 = 10**

- a) Explain the following with suitable sketch:
  - (i) Physical model
  - (ii) Control model
- b) Discuss process modelling in detail?

**6. Attempt any *one* part of the following:**

**10 x 1 = 10**

- a) Write note on the following:
  - (i) Cascaded control
  - (ii) Predictive control
- b) Write note on the following:
  - (i) Inferential control
  - (ii) Intelligent control

**7. Attempt any *one* part of the following:**

**10 x 1 = 10**

- a) Explain the implementation of computer aided temperature control of an electric oven?
- b) Explain in detail about Computer Aided control of electric power generation plant?