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BIEEE-014

B.Tech. – VIEP – ELECTRICAL ENGINEERING (BTELVI)

00851

Term-End Examination

June, 2014

BIEEE-014 : COMPUTER PROCESS CONTROL

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any **seven** questions. All questions carry equal marks. Any missing data may be suitably assumed.*

1. (a) How can we improve control through multiple loops ? *5*

(b) What are the principal advantages of cascade control ? *5*

2. Why is selective control loop required in control process ? What are the areas of applications, where selective control loop can be employed ? *10*

3. What is multivariable control ? Derive the basic expressions for MIMO systems. How are they different from SISO ? *10*

4. How is the performance of a cascade control loop estimated ? Explain with suitable example. *10*

5. (a) What is the condition for a control system to be stable and robust ? *5*

(b) Explain the properties of structured singular value. *5*

6. Write short notes on any ***two*** of the following : *2×5=10*

   (i) H_2/H_∞ theory

   (ii) Relative gain analysis

   (iii) Distributed control systems

7. Draw and explain the internal structure of the CPU in detail. *10*

8. (a) Explain Sequential Function charts with an example. How are they different from flow charts ? *5*

   (b) Draw and explain the ladder programming for a simple mealy circuit. *5*

9. (a) What is real time system ? Explain with an example. *5*

   (b) Explain multiple-stack arrangement in memory management. *5*

10. What are the salient features of Ethernet with its configuration and frame formats ? *10*