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BIEEE-014

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

Term-End Examination

00059

December, 2017

BIEEE-014 : COMPUTER CONTROL PROCESS

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any* ***seven*** *questions. Each question carries equal marks. Use of scientific calculator is permitted.*

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

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

2. Explain the feed-forward control process in detail with suitable example. How is it different from ratio control ? *10*

3. (a) What are the conditions for a control system to be stable and robust ? *5*

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

4. Explain the concept of multivariable control. Derive the basic expression for a MIMO system and compare it with a SISO system. *10*

5. With a suitable example, explain sequential function charts. How are they different from flow charts ? *10*

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

7. What is a real time system ? Explain its specifications and design techniques. *10*

8. Describe the computer control of industrial processes. Also write the control hierarchy for plant level automation. *10*

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

   (a) Batch Process Control

   (b) H^2/H^∞ Theory for Multivariable Control

   (c) Real Time Memory Management
