B.Tech. – VIEP – ELECTRICAL ENGINEERING (BTELVI)
Term-End Examination
December, 2016

00963

BIEEE-014 : COMPUTER CONTROL PROCESS

Time : 3 hours   *Maximum Marks : 70*

Note : *Attempt any **five** questions. All questions carry equal marks. Use of scientific calculator is permitted.*

1. Discuss the rationale of a cascade control system and demonstrate why it provides better response than simple feedback control.   *14*

2. Explain with sketches override and optimizing control systems. Give one example of each type.   *14*

3. What is multiple-input multiple-output process ? In what sense is the design of a control system with a MIMO process different from that with a SISO process ? Explain in detail.   *14*

4. Discuss the performance and robustness specifications for a multiple-input multiple-output linear time invariant system. *14*

5. (a) What is a programmable logic controller ? Why is it used in industrial process control ?

   (b) In what ways are PLCs different from general purpose computers ? Explain. *14*

6. How is a PLC programmed ? Discuss the ladder diagram approach of PLC programming with a neat sketch. *14*

7. What is a protocol ? Differentiate between Manufacturing Automation Protocol (MAP) and Technical Office Protocol (TOP). *14*

8. Write technical notes on any *two* of the following : *2×7=14*

   (a) Control Networks

   (b) Computer Control of Industrial Processes

   (c) Distributed Control Systems