

B.Tech. in ELECTRICAL ENGINEERING (BTELVI)

Term-End Examination

December, 2013

BIEEE-014 : COMPUTER PROCESS CONTROL

Time : 3 hours

Maximum Marks : 70

Note : Attempt any seven questions.

Each question carries equal marks.

1. Define ratio control. Explain all the three configurations of ratio control. 10

2. For the heat exchanger shown in Fig.1, draw the schematic diagram for a combined feedforward and feedback controller in which inlet feed temperature is the major load variable, and outlet temperature is the controlled variable. 10

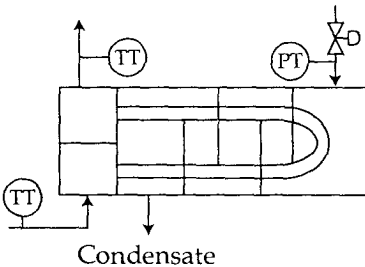


Fig. 1

3. How ladder programming is different from other programming ? Explain the following ladder commands : **10**
 - (a) LD command
 - (b) AND command
 - (c) ANB command
 - (d) ORB command
 - (e) OR command
4. Draw a PLC ladder diagram to realize a 4×1 multiplexer. **10**
5. What are real-time kernels ? Explain polled loop and synchronized polled loop with example. **10**
6. Describe memory management for real-time systems. Explain process stack management and maximum stack size. **10**
7. Discuss the Matrix Fraction Descriptions for multivariable system in detail. **10**
8. Develop the transfer function for a basic MIMO feedback control loop system. **10**
9. With suitable example and neat diagram, explain batch process control. **10**
10. Write short notes on **any two** of the following : **2x5=10**
 - (a) Relative gain analysis
 - (b) Robust stability
 - (c) Sequential function chart
 - (d) Distributed control system