|BIEEE-004|

B.Tech. – VIEP – ELECTRICAL ENGINEERING

(BTELVI)

00007   **Term-End Examination**

June, 2014

BIEEE-004 : MECHATRONICS

Time : 3 hours   *Maximum Marks : 70*

Note : *Answer any **seven** questions. All questions carry equal marks.*

1. (a) Differentiate between Hydraulic and Pneumatic circuit.   *4*

    (b) Describe any two types of directional control valve with neat sketch.   *6*

2. Describe the construction and working principle of stepper motor.   *10*

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

    (i)   PLC

    (ii) Relay

    (iii) Communication Interface

4. Differentiate between the following :

    (a) Micro-processor and Micro-controller   *5*

    (b) Sensor and Actuator   *5*

5. (a) Define Frequency Response and method for monitoring frequency response of the system. *7*

(b) Write a short note on Ratchet and Pawl principle. *3*

6. (a) Define the following terms : (any *two*) *2×3=6*

(i) NC Machine

(ii) VCR

(iii) Computer Printer

(b) Describe briefly the industrial applications of Robot. *4*

7. (a) Define transducer with suitable examples. *4*

(b) Draw the symbol of 4/2 DC valve and 3/3 DC valve. *6*

8. (a) What is the function of an Industrial Robot ? Explain the control system of a Robot. *7*

(b) What is band stop passive RC filter ? *3*

9. Explain the Automobile Engine Control System. Also explain the different components and specific criteria used for Engine Control. *10*

10. Describe the different types of operational amplifiers. *10*

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