BIEEE-004

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

Term-End Examination

⊓⊓685

June, 2019

BIEEE-004 : MECHATRONICS

Time : 3 hours *Maximum Marks : 70*

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

1. What do you mean by "Data Acquisition" ? What are the advantages and disadvantages of data acquisition systems ? *14*

2. Explain the working principle of "Programmable Logic Controllers" with a neat pin configuration and relevant expressions. What are the merits and demerits of this controller ? *14*

3. (a) Explain any one type of "Micro-Mechanical System". *7*

    (b) Draw the functional block diagram of automobile engine control. *7*

4. What do you mean by "Closed Loop Controller" ? What are the merits and demerits of this controller ? Explain in detail. *14*

5. (a) Explain the working principle of "DC Stepper Motors". *7*

   (b) What are the limitations and applications of "DC Stepper Motors" ? *7*

6. Differentiate between the following : *2×7=14*

   (a) Fluid and Hydraulic Systems

   (b) Position and Proximity Sensor

7. (a) Explain the working of an industrial robot. *7*

   (b) What are the merits and demerits of industrial robot ? *7*

8. Explain the construction and working of the following : *2×7=14*

   (a) Solenoid operated solid state switches

   (b) Electro-mechanical disc-control

9. Write short notes on any *two* of the following :

   2×7=14

   (a) Ratchet and Pawl

   (b) Pressure and Level Measurement

   (c) Sensors and Transducers

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