Code No: 5215AM

R15

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M. Tech I Semester Examinations, February - 2017
MECHATRONICS
(Machine Design)

Time: 3hrs

Max.Marks:75

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A

5 × 5 Marks = 25

1.a) Write about significance of mechatronics system. [5]
  b) Write about solenoids and relays. [5]
  c) Describe about encoders. [5]
  d) Write about PLC sizes. [5]
  e) Write about the features of various analog sensors. [5]

PART - B

5 × 10 Marks = 50

2. Explain about history and elements of mechatronics systems. [10]

OR

3. Explain about RVDT, laser interferometer transducer and laser doppler anemometer with neat diagrams. [10]

4. Explain about DC motor, servo motor and stepper motor. [10]

OR

5. Describe about modeling dynamic systems, first order systems and second order systems in brief. [10]

6. Explain about design of combinational circuits and arithmetic circuits. [10]

OR

7.a) Write about multiplexer.
  b) Explain about closed loop and open loop systems. [4+6]

8. Explain about PLC hardware components, I/O section and Analog I/O section. [10]

OR

9. Describe about module programming, ladder Programming and ladder diagrams. [10]

10. Explain about the sensors for condition monitoring in detail. [10]

OR

11. Explain about artificial intelligence in Mechatronics. [10]

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