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V Semester Diploma Examination, April/May-2019

MECHATRONICS

Time : 3 Hours]

[Max. Marks : 100

- Note :** (i) Answer any **six** questions from PART – A.
(ii) Answer any **seven** questions from PART – B.

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PART – A

Answer any 6 Questions :

1. Define : 5
 - (i) Range
 - (ii) Span
 - (iii) Error
 - (iv) Repeatability
 - (v) Resolution
2. Explain the importance of Mechatronics. 5
3. Explain BCD system. 5
4. List the different data presentation elements. 5
5. List the different types of Solid-State Switches. 5
6. Explain 5 terms used in specifying stepper Motor. 5
7. Explain in brief Electro-Mechanical Systems. 5
8. Briefly Explain the requirement / Necessity of Mathematical Models. 5
9. Compare Microprocessor and Micro Controller. 5

PART – B

Answer any 7 questions :

10. (a) With a neat sketch explain the working of Turbine meter. Mention the advantages of it. 7
(b) State any three advantages of turbine meter. 3
11. (a) Explain with a neat sketch working of Bimetallic strips. 6
(b) Define Sensors & transducers with an example. 4
12. Sketch and Explain the working of LCD. Define analog signal. 10
13. Show the Representation of the following Gates. Also, construct the Truth Table. 10
(a) NOR
(b) NAND
(c) XOR
(d) NOT
14. (a) With a neat sketch, explain the working of Hydrodynamic bearing. 7
(b) List uses of bearing. 3
15. (a) Explain the working principle of DC Motor with a neat sketch. 7
(b) Mention different types of DC motor. 3
16. (a) Explain the Model of building up a thermal system. 7
(b) Explain briefly Control modes. 3
17. (a) Sketch and Explain Digital closed loop control system. 7
(b) Explain briefly Electrical System building blocks. 3
18. (a) Construct a PLC ladder diagram for Jumps. 7
(b) List selection factors of PLC. 3
19. (a) With a neat sketch, explain the design of Hard Disc drive. 7
(b) List different types network layers. 3