

Code : 15ME54T

Register  
Number

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V Semester Diploma Examination, Oct./Nov.-2019

**MECHATRONICS**

Time : 3 Hours ]

[ Max. Marks : 100

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

**PART – A**

1. List the factors for selection of sensors. 5
2. Explain the measurement systems with block diagram. 5
3. Describe, briefly the digital signals. 5
4. Explain, briefly data acquisition system. 5
5. Define stepper motor. List it's types. 5
6. Explain the working of Hydrostatic bearing. 5
7. List different control modes. 5
8. Explain continuous control systems with example. 5
9. Explain input/output processing. 5

**PART - B**

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|---------|---|----|
| 10. (a) | Explain the working of pneumatic sensor with sketch.  | 5  |
| (b)     | Explain temperature bimetallic strips with sketch.  | 5  |
| 11. (a) | Explain with a sketch strain gauge load cell.   | 5  |
| (b)     | Explain with sketch proximity switches.   | 5  |
| 12. (a) | Explain dot matrix print head mechanism with sketch.  | 5  |
| (b)     | Explain with sketch LCD.  | 5  |
| 13. (a) | Explain with sketch SR-Flip-Flop.   | 5  |
| (b)     | Explain with sketch sequential logic system.  | 5  |
| 14. (a) | Explain with sketch working principle of the Ratchet and Pawl.                              | 5  |
| (b)     | Explain with sketch solenoids.  | 5  |
| 15. (a) | Explain with sketch MOSFETS'.   | 5  |
| (b)     | Explain with sketch plain journal bearing.  | 5  |
| 16.     | Explain with sketches different mechanical building block systems spring, dashpot and mass. | 10 |
| 17.     | Explain with sketch Digital closed loop control system.                                     | 10 |
| 18.     | Explain with a flow and ladder diagram 'Jumps'.   | 10 |
| 19.     | Explain with Sketch, Design of Car Park barrier System.                                     | 10 |
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