B.E. Electronics & Communication/Telecommunication Engineering (Model Curriculum) Sem-VI
ET602M4 - Open Elective-II : Mechatronics Systems

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Notes : 1. All questions carry marks as indicated.
2. Assume suitable data wherever necessary.
3. Illustrate your answers wherever necessary with the help of neat sketches.

1. a) What is meant by Mechatronics system? Explain any one example of Mechatronics system. **4**

b) Explain Mechatronics design approach. **6**

c) Explain the concept of HMI in detail. **6**

OR

2. a) Explain in detail what is the difference between traditional and mechatronics design with one example. **8**

b) State key elements of Mechatronics system. **8**

3. a) A LVDT has a secondary voltage of 5 volt and a range of $\pm 25\,mm$. Find
i) The output when the core is $-18.75\,mm$ away from the centre. **5**

ii) The output voltage change when the core is moving from $\pm 18.75\,mm$ to $-10\,mm$.

b) State classification of sensor. **5**

c) Explain machine vision system. **6**

OR

4. a) Write short note on: **8**

i) LVDT

ii) Thermistor

b) Explain transducer selection factor. **8**

5. a) What is drive system and its types? **4**

b) What is an Electrical actuator and how does it works. **6**

c) Compare open loop and close loop control system. **6**

OR

6.	a)	Explain advantages and application of Electric actuators.	**8**
	b)	Explain open loop and close loop control system with one example.	**8**
7.	a)	Explain Hardware parts of Embedded system.	**4**
	b)	Explain PLD.	**4**
	c)	Explain Embedded Firmware Design and Development.	**8**

OR

8.	a)	Explain quality attributes of Embedded system.	**8**
	b)	Explain any four types of I/O devices used in embedded system.	**8**
9.	a)	State the steps involved in Lithogrophy process.	**8**
	b)	Design a Mechatronics system for an automatic washing machine?	**8**

OR

10.	a)	What is etching? State different types of etching process.	**4**
	b)	Explain micro – fabrication technique in LIGA process.	**6**
	c)	What are the applications of chemical and biochemical microsensors?	**6**

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