B.E. Instrumentation Engineering (Model Curriculum) Semester-VI

IN601M3 - Elective-II : Smart Sensors

P. Pages : 2 **GUG/W/23/14028**

Time : Three Hours * 7 6 1 5 * Max. Marks : 80

Notes : 1. Same answer book must be used for each section.
2. All questions carry equal marks.
3. Due credit will be given to neatness and adequate dimensions.
4. Assume suitable data wherever necessary.
5. Diagrams and Chemical equation should be given wherever necessary.
6. Illustrate your answers wherever necessary with the help of neat sketches.

1. a) Draw block diagram of quasi digital sensors. Explain the classification quasi Digital Sensors. **8**

b) Describe with Working Principles following Categories Sensors with examples. **8**
i) Parametric Sensor
ii) Self Generating Sensors.

OR

2. a) Draw block diagram and explain the functionality of MEMS. **8**

b) Describe the working principle of system on clip. **8**

3. a) What are MST, how it is useful for Smart Sensor. **8**

b) Describe the different output from frequency time domain signals. **8**

OR

4. a) Illustrate the classification of quasi digital sensors. **8**

b) Illustrate in detail program oriented conversion method. **8**

5. a) Describe the main features of PCM. **8**

b) Explain in brief Interface Productivity. **8**

OR

6. a) Illustrate Integrated circuit bus standards used for smarts sensors. **8**

b) Describe the basic functionality of LAB view software. **8**

7. a) Illustrate the three main components of (ABS) anti breaking system with diagram. **8**

b) Explain the role of Software and Hardware in virtual Instrumentation. **8**

OR

8.	a)	Describe the basic mathematical model definition of virtual Instrument.	**8**
	b)	Explain the basic parameters requirements for Network Protocols.	**8**
9.	a)	Describe with block diagram different technologies used for Smarts Sensors.	**8**
	b)	Describe RS-232 interface standard used with smart sensors.	**8**

OR

10.	a)	Describe with block diagram DAQ system for Temperature sensors.	**8**
	b)	Illustrate working of universal sensors and transducer interface.	**8**

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