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B.Tech.(Automation & Robotics) (DE-I 2011 & Onwards)**B.Tech.(ECE/ETE) (E-I 2011 Onwards)****(Sem.-6)****INTELLIGENT INSTRUMENTATION****Subject Code : BTEC-906****M.Code : 71235****Time : 3 Hrs.****Max. Marks : 60****INSTRUCTIONS TO CANDIDATES :**

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **FIVE** questions carrying **FIVE** marks each and students have to attempt any **FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

SECTION-A**1. Answer briefly :**

- a) What is instrumentation system?
- b) What is the use of data acquisition system in instrumentation system?
- c) What is solenoid?
- d) Draw sample and hold circuit.
- e) Name the PLC programming language.
- f) What is actuator?
- g) How fuzzy value differs from crisp value?
- h) What is neuron?
- i) What is the role of signal converters?
- j) How automatic control system differs from simple control system?



SECTION-B

2. What is data logger? How many inputs can be handled with data acquisition system at a time? Explain Data logger with neat block diagram.
3. What is controller? What are the types of controllers? What is the role of controller in automation systems?
4. What is PLC and what is the principle of operation of PLC?
5. How artificial neuron resembles biological neuron? Explain with diagram of both.
6. What is the need of ADC and DAC in instrumentation?

SECTION-C

7. What is data acquisition system? Explain the working of each block involved in making data acquisition system. Design a pressure and temperature measuring data acquisition system.
8. Elaborate the architecture of programmable controller. Also discuss the industrial uses of PLC ladder programming with suitable example of a programme to control dc motor working.
9. What is the fuzzy logic controller and how it differs from Neuro fuzzy controller? Explain seven methods of defuzzification?

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.