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Total No. of Pages : 02

Total No. of Questions : 18

**B.Tech.(ECE) (E-I 2012 to 2017)/
(Automation & Robotics) (DE-I 2012 & Onward) (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.
4. **Make use of diagrams to explain.**

SECTION-A

Answer briefly :

1. What is Data acquisition system?
2. What is the use of data acquisition system in instrumentation system?
3. What is data logger?
4. What is the function of sample and hold circuit in DAS?
5. Name the PLC programming language.
6. What is expert system?
7. Explain fuzzy membership value. Why it is always between 0 and 1?
8. Give the structure of artificial neuron.
9. What is the function of signal converters?
10. What is the need of automatic control system?

SECTION-B

11. What is the function of :
 - a) Solenoid
 - b) Relay?
12. What are I/O converters? What is the need of actuators in pneumatic systems? What is the role of controller in automation systems?
13. What is the principle of operation of PLC? Explain.
14. How artificial neuron resembles biological neuron? Explain with diagram of both.
15. What is structure of direct digital control system? Name the software involved in their programming?

SECTION-C

16. What is an instrumentation system? Explain the working of each block of a data acquisition system? Design temperature measuring instrumentation system using DAS. What are the uses of instrumentation system and data acquisition systems?
17. Explain 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.
18. 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.