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Total No. of Pages : 02

Total No. of Questions : 09

**B.Tech.(Automation & Robotics) (DE-I 2011 & Onward)****B.Tech.(ECE/ETE) (E-I 2011 Onwards)****(Sem.-6)****INTELLIGENT INSTRUMENTATION****Subject Code : BTEC-906****Paper ID : [A2394]****Time : 3 Hrs.****Max. Marks : 60****INSTRUCTION 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****Q1. Answer briefly :**

- i) What is the need for sample and hold circuit in A/D converter?
- ii) What are the types of DAC?
- iii) Draw the block diagram for 4 bit Analog to Digital Converter.
- iv) Give some applications of DAS.
- v) List the potential benefits of SCADA.
- vi) List the advantages of ANN over Fuzzy Logic system.
- vii) What is the use of computer supervisory control system?
- viii) What the data manipulation instructions allow the PLC to do?
- ix) Mention some of applications of DCS.
- x) What do you meant by data logger?

### SECTION-B

- Q2. Explain the successive approximation type A/D Converter.
- Q3. Compare SCADA and DDC.
- Q4. Explain in brief the basic architecture of DAS system.
- Q5. What do you mean by Artificial Intelligence? Explain how decision-making process is developed in the AI system.
- Q6. Enlist different types of temperature transducers and Explain the working temperature control using DAS.

### SECTION-C

- Q7. Compare PLC, SCADA, and DAS.
- Q8. i) Describe the Expert controller with neat sketch.  
ii) Explain the hardware architecture of PLC.
- Q9. Write short notes on following :
- i) Neuro-Fuzzy controller.
- ii) Signal Conditioner.