Unit IV

7. Enlist the salient features of PLC registers. Also explain PLC function as timer and counter and their industrial applications.   **15**

8. What do you mean by term 'virtual instrumentation' ? With the help of a block diagram, discuss the architecture of virtual instruments. Also discuss merits and demerits of virtual instruments.   **15**

BB-61

M. Tech. EXAMINATION, Dec. 2018

(Second Semester)

(B. Scheme) (Re-appear Only)

(ECE/Industry Integrated)

MTEC502B

ADVANCED ELECTRONICS
INSTRUMENTATION

Time : 3 *Hours*]   [*Maximum Marks :* 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. (a) What is LVDT ? Describe the construction and basic principle of working of a LVDT. How the magnitude and direction of the displacement of core of an LVDT can be detected ? **8**

(b) Compare the performance of photoelectric and piezoelectric sensors. **7**

2. (a) What are various types of digital to analog converters ? Explain the working principle of any method with its specifications/features. **8**

(b) With the help of neat block diagram, explain the working of universal counter. Mention its applications. **7**

Unit II

3. (a) With a neat block diagram, explain the working of sampling oscilloscope. Mention its applications. **7**

(b) What is wave analyzer ? Give the classification of wave analyzers depending upon the frequency ranges used. **8**

4. (a) What is FET analyzer ? On what principle it is based ? Mention its applications. **8**

(b) What do you mean by the term 'Computer Aided Software Engineering (CASE)' tool ? Mention its applications. **7**

Unit III

5. (a) What do you mean by the term 'data acquisition system' ? Explain its elements. **6**

(b) What are various communication medium used in SCADA system ? Discuss advantages and disadvantages. **9**

6. (a) Enlist various SCADA architectures and its advantages and disadvantages. **5**

(b) Explain the various components of PLC with the help of a neat block diagram. What is significance of ladder diagram in PLCs ? **10**