

BB61

M. Tech. EXAMINATION, 2021

(Second Semester)

(Re-appear Only)

(ECE)

MTEC502B

ADVANCED ELECTRONICS INSTRUMENTATION

Time : 2½ 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 *Four* questions in all. All questions carry equal marks.

1. (a) What are sensors for transducers ? Explain eddy current and thermocouple sensors.
(b) What is a Potentiometer ?
2. (a) Compare the performance of RTD and thermo couple sensors.
(b) What do you understand by gauge factor with respect to resistance strain gauge ?
3. (a) With a neat block diagrams, explain the working of Digital Storage Oscilloscope. Also mention applications of DSO in communication.
(b) What are current trends in oscilloscope technology ?

4. Write a short note on intelligent and programmable instruments. Give their merits and demerits.
5. What are the communication technologies used in SCADA systems. What are the various elements of SCADA system ? Discuss the role of PLC in SCADA system.
6. (a) Explain Ladder diagram with an example. What is a Remote Terminal Unit ?
(b) What are the features and applications of a DATA Acquisition System ?
7. Explain Virtual Instrumentation. Discuss the architecture of Virtual Instruments. Discuss its merits and demerits.
8. Write short notes on any *two* of the following :
 - (a) Data Flow Technique
 - (b) Real Time Systems
 - (c) PLC Registers
 - (d) Industrial Applications of PLC.