KNT/KW/16/5157

Bachelor of Science (B.Sc.) Semester–IV (C.B.S.) Examination

ELECTRONICS (Electronic Instrumentation)

Compulsory Paper–2

Time : Three Hours] [Maximum Marks : 50

N.B. :— (1) **All** questions are compulsory and carry equal marks.
(2) Draw neat diagrams wherever necessary.

EITHER

1. (A) Explain virtual instrumentation in brief. Describe PC based instrumentation system. 5+5

OR

(B) Explain electronic system and state any five characteristics of measuring instruments. Define : Analog and Digital electronic systems with suitable examples. 6+4

EITHER

2. (A) Explain active and passive transducers with examples. Give brief account on LM 35 temperature sensor. 5+5

OR

(B) Explain the concept of sensor and actuator. Describe working principle, types and characteristics of thermistor. 4+6

EITHER

3. (A) Explain the measurement of temperature using thermistor by Wheatstone Bridge method. Explain the construction and working of Luxmeter using LDR. 5+5

OR

(B) Draw the block diagram of colorimeter using LDR and explain it. Explain the principle of operation of insect repellent using piezobuzzer. 6+4

EITHER

4. (A) Explain the block diagram of EEG. List different types of brain waves and explain it. 5+5

OR

(B) Explain Man-Instrument System with its different components. Draw the block diagram of ECG and explain the function of each block. 5+5

5. Answer any **ten** of the following (each 1 mark) :

(A) What do you mean by calibration ?

(B) Define standalone system.

(C) State the significance of virtual instrumentation.

(D) Draw V-I characteristics of phototransistor.

(E) List any two uses of pressure sensor.

(F) What is the difference between photo transistor and conventional bipolar junction transistor ?

(G) Define piezoelectric transducer.

(H) State the applications of colorimeter.

(I) List any two features of LM 35.

(J) What is bioelectric potential ?

(K) Sketch the standard waveform of ECG.

(L) State the uses of EMG. 1×10=10