TKN/KS/16–5872

Fourth Semester B. Sc. Examination

ELECTRONICS

Paper – II

Electronic Instrumentation

Time : Three Hours] [Max. Marks : 50

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

EITHER

1. (A) Differentiate between Analogue and digital Instrumentation system.
Draw the block diagram of PC–based instrumentation system and state the function of each block. 4 + 6

OR

(B) Draw the block diagram of Instrumentation System and explain the working of each block in brief. List the various classification of calibration standards. 2 + 6 + 2

EITHER

2. (A) Write short note on digital Pressure Sensor MPXV 4006 DP.
Give the construction and working of Piezo – electric transducer.
State the materials that shows Piezo – electric – effects. 5 + 5

OR

(B) What is transducer ?
List and explain the basic characteristics of transducer.
Differentiate between active and passive transducer with examples. 1 + 6 + 3

EITHER

3. (A) Explain the principle used in insect repellent. Draw the block diagram of insect repellent using Piezo buzzer and explain its working.
State the advantages of IC LM 35 over Thermistor for measurement of temperature. 6 + 4

OR

(B) Draw the block diagram of temperature measurement system using Thermistor and explain its working.
Discuss the temperature measurement system using IC LM 35 with the help of block diagram. 5 + 5

EITHER

4. (A) Draw the block diagram of ECG machine and state the function of each block. Mention the point of difference between ECG Electrode and ECG – lead. 2 + 6 + 2

OR

(B) With block diagram, explain the components of Man – Instrument system.
Explain resting and action potentials of cells and their propagation. 5 + 5

5. Answer any **ten** from following questions :—

(a) Define Accuracy of instrument ?

(b) What is virtual instrumentation system ?

(c) State the necessity of calibration in instrument.

(d) What is actuators ?

(e) What is PTC and NTC with reference to thermistor ?

(f) State characteristics of sensors.

(g) What for LUX meter is used ?

(h) What is calorimeter ?

(i) State the need of cuvette chamber in calorimeter.

(j) What is leakage current ?

(k) What is the source of Bio – electric Potentials ?

(l) Draw the block diagram of EEG system.

1 x 10