NKT/KS/17/5157

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

(Electronic Instrumentation)

ELECTRONICS

Paper—II

Time : Three Hours] [Maximum Marks : 50

N.B. :— (1) **ALL** questions are compulsory.

(2) All questions carry equal marks.

EITHER

1. (A) Explain various calibration standards.

Explain static and Dynamic system characteristics of the instrument. 3+7

OR

(B) Enlist various types of instrumentation systems.

Explain the following :

(i) Analog instrumentation system

(ii) PC based instrumentation system. 2+3+5

EITHER

2. (A) What is transducer ?

Give the classification of transducer and explain and six characteristics of transducer. 1+3+6

OR

(B) State various features of temperature sensor LM35.

Differentiate between PTC and NTC thermistors.

Explain pressure sensor MPXV 4006 DP. 2+3+5

EITHER

3. (A) Explain temperature measurement using Thermistor also state disadvantages of thermistor. Draw the block diagram of colorimeter using LDR and explain it. 5+5

OR

(B) Explain temperature measurement using LM35.

Explain Lux meter using LDR. 5+5

EITHER

4. (A) Explain various components of Man-Instrument system.

Discuss the problems encountered during measurement of Living system. 5+5

OR

(B) Draw the block diagram of ECG and explain it.

Explain basic recording system. 5+5

5. Answer any **ten** :

(a) What is calibration of instrument ?

(b) What is virtual instrumentation system ?

(c) Define data acquisition system.

(d) State the difference between, Sensor and Actuator.

(e) If temperature of surrounding is 31°C. What will be the output of LM35 ?

(f) Why base terminal is kept open (not-connected) in phototransistor ?

(g) What is thermistor ?

(h) What is LDR ?

(i) State the principle of operation of electronic insect repellent.

(j) What do you mean by bio-medical instrumentation ?

(k) State any two objectives of bio-medical instrumentation system.

(l) State any one method of accident prevention in biomedical instrument. 1×10