

B.Sc. (Part—III) Semester—V Examination

5S : ELECTRONICS

(Measuring Instruments)

Time : Three Hours]

[Maximum Marks : 80

Note :— (1) Question No. 1 is compulsory.

(2) Draw diagrams wherever necessary.

1. (A) Fill in the blanks :—

(i) The transducer converts Physical quantity into equivalent _____ .

(ii) LVDT stands for _____ .

(iii) Pyrometer uses thermal radiation for measurement of _____ .

(iv) DCM stands for _____ .

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(B) Choose the correct alternative :—

(i) Electrical activity of brain is measured by using :

(a) ECG

(b) EMG

(c) EEG

(d) None

(ii) Free running multivibrator is also known as _____ multivibrator.

(a) Monostable

(b) Bistable

(c) Astable

(d) None

(iii) RTD stands for :

(a) Resistance temp. detector

(b) Resistance thermal detector

(c) Radiant temp. detector

(d) Resistance temp. device

(iv) Output voltage at null position of LVDT is known as _____ .

(a) Null Voltage

(b) Residual Voltage

(c) Effective Voltage

(d) None

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(C) Answer in one sentence each :

(i) What is the function of reset input in IC555 ?

(ii) What is actuator ?

(iii) What is transducer ?

(iv) What is Pyrometer ?

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2. (a) Explain construction and working of capacitive transducer. 6
(b) State classification of transducers and explain with examples. 6
- OR**
- (p) Draw block diagram of generalised instrumentation system and explain each block. 6
(q) Explain measurement of displacement using potentiometer. 6
3. (a) Explain measurement of temperature using thermistor. 6
(b) Explain construction and working of total radiation pyrometer. 6
- OR**
- (p) Explain LM34 and its features. 6
(q) Explain temperature measurement using thermocouple. 6
4. (a) Explain IC 555 with neat block diagram. 6
(b) Explain working of IC 555 as astable multivibrator. 6
- OR**
- (p) Draw and explain block diagram of PLL. 6
(q) Explain working of monostable multivibrator using IC 555. 6
5. (a) Explain segmental and dot matrix display. 6
(b) Draw block diagram of digital frequency meter and explain function of each block. 6
- OR**
- (p) Draw functional diagram of magnetic tape recorder and explain its working. 6
(q) Explain working of ramp type digital voltmeter. 6
6. (a) Explain fiber optic temperature sensor. 6
(b) Explain construction and working of strain gauge. 6
- OR**
- (p) Explain bent beam electro-thermal actuator. 6
(q) Explain working of phototransistor as optical sensor. 6
7. (a) Explain the working of EEG with neat block diagram. 6
(b) Explain working of blood pressure meter. 6
- OR**
- (p) Draw block diagram of ECG machine and explain each block. 6
(q) Explain pulse oximeter. 6