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Time : 2 Hours**Electronic & Electrical Measurements****Subject Code**

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Total No. of Questions : 5**(Printed Pages : 4)****Maximum Marks : 50**

INSTRUCTIONS :

- (i) Answer each question on a fresh page.
- (ii) Write the number of each question and sub-question clearly.
- (iii) All questions are compulsory.
- (iv) Figures to the right indicate full marks.

1. (A) Fill in the blanks : 2

(i) The current rating of Germanium diode is

(ii) A neutral solution like pure water has a pH value of

(B) Answer the following : 6

(i) Draw a neat block diagram of AF Signal Generator and explain in brief its working.

(ii) A moving coil voltmeter with an internal resistance of 400Ω has a range of 1 volt. The voltmeter range has to be increased to measure upto 10 volts. Calculate the value of series resistance required.

- (C) Answer the following : 2
- (i) With a neat diagram explain Eddy current damping.
2. (A) Define the following : 2
- (i) Shunt Resistance
- (ii) Gauge factor.
- (B) Answer the following : 6
- (i) Distinguish between single phase induction type Energymeter and single phase induction type wattmeter (**3** points).
- (ii) With a neat diagram explain DC Tachometer Generator.
- (C) Answer the following in short : 2
- (i) Draw a neat block diagram of Electrocardiograph (ECG).
3. (A) Fill in the blanks : 2
- (i) The CRO probe which is simplest and uses a shielded co-axial cable is
- (ii) The effect caused by contact potential at the junction in Thermocouple is known as effect.
- (B) Answer the following : 3
- (i) What is a Megger ? Mention any *four* precautions to be taken while using Megger.

(C) Answer any *one* of the following in detail : 5

(i) Draw neat labelled block diagram of Cathode Ray Oscilloscope (CRO) and explain Time Base Generator.

Or

(ii) Draw a neat diagram of Cathode Ray Tube (CRT) and explain Electron Gun Assembly.

4. (A) Answer the following : 2

(i) Define pH of a solution.

(ii) Name the bridge which is used to measure unknown inductance having Q less than 10 ($Q < 10$).

(B) Answer the following : 3

(i) With a neat diagram explain Potentiometric transducer.

(C) Answer any *one* of the following in detail : 5

(i) With a neat diagram explain current transformer. Mention one practical application of current transformer.

Or

(ii) With a neat diagram explain Photo-electric Tachometer. Mention any one advantage of this Tachometer.

5. Answer the following :

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- (i) With a neat circuit diagram explain calibration of Ammeter using potentiometer method.
- (ii) Mention any *four* advantages of Digital multimeter over Analog multimeter.
- (iii) Draw a neat block diagram of output power meter.
- (iv) With a neat diagram explain thermocouple.
- (v) Draw a neat circuit diagram of Wheatstones bridge.