



2018 III 15

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Seat No. :

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Time : 2 Hours

**ELECTRONIC AND ELECTRICAL MEASUREMENTS
(New Pattern)**

Subject Code

V	3	4	1
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Total No. of Questions : 5

(Printed Pages : 3)

Maximum Marks : 50

- INSTRUCTIONS:**
- Answer **each** question on a **fresh** page.
 - Write the number of **each** question and sub-question **clearly**.
 - All** questions are **compulsory**.
 - Figures to the **right** indicate **full** marks.

1. A) Fill in the blanks : [2]
- The material used for shunts in DC instruments is _____
 - pH value of acidic solution lies between _____
- B) Answer the following : [6]
- Explain working of electro-dynamometer type of instrument with a neat diagram.
 - Draw a neat diagram of a single phase energy meter and explain its operating principle.
- C) Answer the following : [2]
- Describe Air friction damping used in measuring instruments with a neat diagram.
2. A) Define the following : [2]
- pH of a solution
 - Current sensitivity.



B) Answer the following : [6]

- i) Explain photoelectric transducer with a neat diagram.
- ii) Describe working of DC tachometer generator with a neat diagram.

C) Answer the following : [2]

- i) Draw neat diagram of potentiometric transducer and explain its working.

3. A) Fill in the blanks : [2]

- i) The instrument that is used to measure the ac current through line without any contact is _____
- ii) In strain gauge the unit change in resistance per unit change in length is called _____

B) Answer the following : [3]

- i) Draw a neat block diagram of AF signal generator and explain its working.

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

- i) Explain working of output power meter with a neat labelled block diagram and state its one application.

OR

- ii) Explain working of pH meter with a neat labelled diagram.

4. A) Answer the following : [2]

- i) Name the transducers that can be used to convert heat energy into electrical energy.
- ii) To which part of human body does the earth lead of ECG is connected ?

B) Answer the following : [3]

- i) Explain working of megger with neat diagram.



C) Answer **any one** of the following in detail

[5]

- i) Draw a neat block diagram of a Cathode Ray oscilloscope and explain sweep generator.

OR

- ii) Draw diagram of a CRT and explain electron gun assembly.

5. Answer the following :

[10]

- i) Explain Calibration of DC voltmeter with a neat diagram using potentiometer method.
 - ii) Enumerate any two applications of HVBT.
 - iii) Draw diagram of a single phase power factor meter.
 - iv) Draw neat circuit diagram of a Wheatstone bridge and state its one use.
 - v) State any four advantages of digital multimeter over analog multimeter.
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