313334

12425

03 Hours / 70 Marks Seat No. | | | | | | | | |

Instructions – (1) All Questions are *Compulsory.*

(2) Answer each next main Question on a new page.

(3) Illustrate your answer with neat sketches wherever necessary.

(4) Figures to the right indicate full marks.

(5) Assume suitable data, if necessary.

(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following: **10**

a) Define measurement. State its need.

b) Explain the concept of multiplying factor.

c) Write any two applications of each of the following:

i) Function generator

ii) CRO.

d) State the advantages of digital measuring instruments.

e) State the difference between sensors and transducers.

f) Define temperature with its unit.

g) Explain the concept of variable area flow meter.

P.T.O.

Marks

2. Attempt any THREE of the following: **12**

a) Explain with neat diagram construction and working of PMMC instrument.

b) Explain with neat experimental setup measurement of power by two wattmeter method.

c) Explain the working of digital earth tester.

d) Describe with neat diagram capacitive level measurement method.

3. Attempt any THREE of the following: **12**

a) State and explain different types of torques in measuring instruments.

b) Explain with neat block diagram smart energy meter.

c) Explain with neat block diagram single phase digital energy meter.

d) Explain with neat diagram Resistance Temperature Detector (RTD).

4. Attempt any THREE of the following: **12**

a) Define – Accuracy, precision, dead zone and sensitivity.

b) Explain construction and working of maximum demand indicator.

c) State different types of errors in single phase energy meter and state its method of compensation.

d) Explain with neat diagram function generator.

e) Explain with neat diagram bourden tube with LVDT as secondary transducer.

5. Attempt any TWO of the following: **12**

a) Draw block diagram of CRO and explain the function of each block.

b) Explain with neat diagram:

i) Load cell

ii) Piezoelectric transducers.

c) State different methods of measurement of flow meter and explain electromagnetic flow meter.

Marks

6. Attempt any TWO of the following: **12**

a) Explain function with neat diagram:

i) Frequency meter

ii) Phase sequence indicator

iii) Synchroscope.

b) Define instrumentation system. Draw its block diagram and explain function of each block.

c) i) Explain working of ultrasonic flow meter with diagram.

ii) Explain radiation level measurement method.

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