[Total No. of Questions - 9] [Total No. of Printed Pages - 2]
(2066)

16046(J) J-16

B. Tech 4th Semester Examination

Electrical Measurement and Measuring Instruments (NS)

EE-224

Time : 3 Hours **Max. Marks : 100**

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Candidates are required to attempt five questions in all selecting one question from each of section A, B, C & D and all subparts of section E. All questions carry equal marks.

SECTION - A

1. What are the characteristics performance parameters of instruments? Explain, it for the static as well as dynamic performances. (20)

2. What are the components of measuring instruments? Explain its importance in details. (20)

SECTION - B

3. Write down principle, construction and operation of a voltmeter. How range is extended for the meter? (20)

4. Write down the principle construction and operation of PMM types measuring instrument with example. (20)

SECTION - C

5. Draw and explain the method for measurement of power using two wattmeter method. (20)

[P.T.O.]

6. Draw and explain the principle construction and operation of a power factor meter. (20)

SECTION - D

7. Explain the Ammeter Voltmeter method of resistance measurement. What are the errors induced in this method? How do you correct them? (20)

8. A cable is tested by loss of charge method using a ballistic galvanometer with following results: Discharged immediately after electrification deflection 200 divisions. Discharged after 30s and after electrification (a) deflection 126 divisions (b) when a parallel with a resistance of 10 MΩ, deflection 100 divisions. Calculate the insulation resistance of the cable. (20)

SECTION - E

9. (a) Compare electronic voltmeters with conventional voltmeters.

   (b) What are main component of an electronic meter?

   (c) Compare Moving coil and moving magnet type instruments.

   (d) What do you mean by resonance?

   (e) What are differences between electrodynamics and moving iron type instruments?

   (f) Draw De Sauty's bridge measurement system.

   (g) What are importances of calibration of a meter?

   (h) How potentiometer is used for measurement of displacement?

   (i) What is basic principle of self balancing potentiometer?

   (j) What are various types of bridge used in measurement system? (2×10=20)