

Code No: **R31022**

R10

Set No. 1

III B.Tech I Semester Supplementary Examinations, October/November - 2017

ELECTRICAL MEASUREMENTS

(Electrical and Electronics Engineering)

Time: 3 hours**Max. Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks

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| 1 | a) | Explain the necessity of damping system for any indicating instrument and explain in detail about Eddy current damping. | [8M] |
| | b) | State the causes of change of accuracy in moving coil instruments with change of temperature and how the compensation is attained. | [7M] |
| 2 | a) | List the advantages and disadvantages of Instrument transformers. | [7M] |
| | b) | Explain the working of Single phase dynamometer type power factor meter with a neat diagram and give its significance. | [8M] |
| 3 | a) | Explain how creep, lag adjustment and temperature compensation adjustments are done in single – phase induction type energy meters. | [8M] |
| | b) | A three phase motor draws a line current of 46A from 415 V source while starting. The power factor is 0.6. Find the readings of two wattmeter's connected to measure power. | [7M] |
| 4 | a) | Explain how “true zero” is obtained in a Crompton's potentiometer | [7M] |
| | b) | With the help of neat diagrams, explain how a dc potentiometer can be used for calibration of ammeter and measurement of unknown resistance. | [8M] |
| 5 | a) | List the different methods for measurement of Low resistances and explain any one method with a neat diagram. | [8M] |
| | b) | Calculate the insulation resistance of a length of cable in which the voltage falls from 110 to 75 volts in 18 seconds, the capacity being 0.0004 μ F. | [7M] |
| 6 | | Explain the Schering Bridge for measurement of capacitance using a neat circuit diagram and drive the necessary equation for dissipation factor with a neat phasor diagram under balanced condition. | [15M] |
| 7 | a) | Discuss about the measurements of core loss using Bridge method. | [8M] |
| | b) | Explain the principle of operation of flux meter with neat sketch. | [7M] |
| 8 | | Write short notes on the following:
i) Digital Tachometer ii) specifications of Digital meters | [15M] |

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