Code No: R1622021 **R16** SET - 1

II B. Tech II Semester Supplementary Examinations, November - 2018
ELECTRICAL MESUREMENTS
(Electrical and Electronics Engineering)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**

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PART –A

1. a) What is spring control and gravity control? (2M)
   b) A 3-phase, 440V motor load has a power factor of 0.6. Two watt-meters connected to measure the power show the input to be 25kW. Find the readings on each instrument. (3M)
   c) How the phase angle is measured in polar type potentiometers. (2M)
   d) Discuss briefly about the constructional features of ohmmeter? (3M)
   e) A solenoid 50 cm long and 2.2 cm in diameter is uniformly wound with 500 turns of insulated wire. Find the magnetic field strength at the centre of the solenoid when carrying a current of 2A. (2M)
   f) What is a digital instrument? (2M)

PART -B

2. a) Describe the constructional details and working of a moving iron attraction type meter. Derive its torque equation. (7M)
   b) Explain in detail about the working principle of dynamometer. (7M)

3. a) Explain about electrostatic wattmeter and discuss its merits over other Wattmeter's. (7M)
   b) A dynamometer type wattmeter with its voltage coil connected across the load side of the instrument reads 250 watts. If the load voltage be 200 volts, what power is being taken by load? The voltage coil branch has a resistance of 2000Ω. (7M)

4. a) Describe the construction and working of a simple D.C. potentiometer. (7M)
   b) Explain how the potentiometer may be used for precise measurement of voltage for example if it is 240V D.C. (7M)

5. a) Discuss how Hay bridge can be used for the measurement of inductance. (7M)
   b) Explain with a neat circuit diagram the working of a Wagner earthing device. (7M)

6. a) Discuss the procedure for the determination of flux density in a ring specimen. (7M)
   b) Describe a method for the measurement of B-H curve of a magnetic substance of a bar form. (7M)

7. a) Describe the function of attenuators and vertical amplifier in CROs. (7M)
   b) Discuss in detail about the block diagram and working of a digital multimeter. (7M)

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