TEE-101   1227   Printed Pages : 3

Paper Code & Roll No. to be filled in your Answer Book

Roll No. ⬚⬚⬚⬚⬚⬚⬚⬚⬚⬚⬚

B. Tech. I Year (I Sem.)

Odd Semester Examination-2015

BASIC ELECTRICAL ENGINEERING

Time : 3 Hours]   [Maximum Marks :100

Answer any four (4*5=20)

1. State and prove Thevenin's Theorem with example.

2. Explain Norton's theorem with example.

3. State and explain Superposition Theorem with suitable example.

4. State and Explain the "The Maximum Power Transfer Theorem".

5. What is the maximum power that can be drawn from a 12-V battery that has an internal resistance of 0.25ohm?

Answer any four   **(4*5=20)**

1. Describe the the following in case of measuring instruments :

    (I)   Deflecting torque

    (II)   Controlling torque

    (III)   Damping torque

2. Discuss the advantage, limitation and limitation of MI instruments.

3. A single phase energy meter has a registration constant of 100rev/kWh. If the meter is connected to a load carrying 20 A at 230 V and 0.8 power factor for an hour. Determine consumed in one hour.

4. What do you mean by creep?

5. A moving-coil voltmeter gives full scale deflection at 1 mA. Calculate its sensitivity when used with multipliers giving full scale defection at 25 V.

Answer any two (2*10=20)

1. Define voltage regulation of a transformer and drive condition for zero regulation.

2. Describe open circuit test with a neat circuit diagram.

3. A 10 kVA, single phase transformer for 2000/400 V at no load, has R_1=5.5 ohm, X_1=12 ohm, R_2=0.2 ohm, X_2=0.45 ohm. Determine the approximate value of the secondary voltage at full load, 0.8 power factor (lagging), when the primary applied voltage is 2000 V.

Answer any two (2*10=20)

1. A 200 V d.c. series motor runs at 1000 r.p.m. and takes 20 A.Combined resistance of armature and field is 04 ohm. Calculate the resistance to be inserted in series so as to reduce the speed to 800 r.pm., assuming torque to vary as vary as square of the speed a linear magnetization curve.

2. Explain different methods of speed control of DC motors with neat diagrams.

3. Why is synchronous motor not self-starting? Mention various advantage, disadvantages and application of synchronous motor.

Answer any two (2*10=20)

1. Describe with the aid of diagram of connection and phasor diagrams two methods of producing starting torque in a single phase induction motor.

2. Draw the circuit diagram of a capacitor –start capacitor run single phase induction motor and explain its working. Where this type of motor is commonly used?

3. Explain simply why a universal motor can operate from dc as well as ac supplies. What are the chief differences in construction between ac series motor & dc series motors?

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