Program: B.Tech CE (Batch 2018 onward)

Semester: 2nd

Name of Subject: Basic Electrical Engineering

Subject Code: ESC-101

Paper ID: 15929

Scientific calculator is Not Allowed

Time Allowed: 03 Hours   **Max. Marks: 60**

NOTE:

1) Parts A and B are compulsory
2) Part-C has Two Questions Q8 and Q9. Both are compulsory, but with internal choice
3) Any missing data may be assumed appropriately

Part – A   [Marks: 02 each]

Q.1

a) What do you mean by electric resistance? Mention the factors on which it depends?

b) Distinguish between node and junction?

c) Define peak factor and form factor of an alternating quantity?

d) Which losses occur in a dc machine?

e) Define damping torque?

f) Give concept of work and energy.

Part-B   [Marks: 04 each]

Q2. Explain the concept of generation of rotating magnetic fields in electrical machine.

Q3. Explain the working principle of fuse and MCB.

Q4. Describe BH characteristics in magnetic material.

Q5. Discuss how do you analyse series R-C circuit? Draw its phasor diagram?

Q6. Explain the principle of operation and construction of a dc generator.

Q7. Explain the classification of electrical instruments.

Part-C   [Marks: 12 each]

Q8. (a) Derive the necessary equations for converting a delta network into an equivalent star network and also converting star network into an equivalent delta network.

or

(b) Explain the construction and operating principle of a Permanent magnet moving coil.

Q9. (a) Discuss construction and working of Transformer ?

or

(b) State and explain the Thevenin and Norton theorems with suitable example.

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