Roll No. .....

24007

B. Tech. 1st Sem.
(Common for All Branches)
Examination – March, 2021

ELECTICAL TECHNOLOGY

Paper : EE-101-F

Time : Three Hours] *[Maximum Marks : 100*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all, selecting ***one*** question from each Section. Q. No. 1 is ***compulsory***. All questions carry equal marks.

1. (i) Define Mesh, Loop, Node, Bilateral Network and Active Network. 5

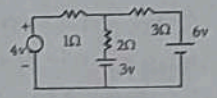
(ii) Define power factor. What is physical significance of power factor. 5

(iii) Derive e.m.f. equation of D.C. generator. 5

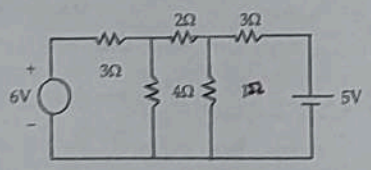
(iv) Explain the terms controlling torque and damping torque. 5

SECTION – A

2. State and explain Thevenin's theorem. Find the value of current through 3Ω by using Thevenins theorem in given network. 20



3. State Kirchoff's current law. Solve the given network by using nodal analysis and find value of current through 2Ω resistance. 20



SECTION – B

4. Derive the mathematical equation of Average value of sinusoidal AC signal. 20

5. Write short note on : 20

   (a) Series Resonance

   (b) Active power

   (c) Reactive Power

   (d) Earthing

SECTION – C

6. Explain, how the rotor of 3-ϕ induction motor rotate ? 20

7. Discuss Double field revolving theory in detail. 20

SECTION – D

8. Draw and explain equivalent circuit of 1-ϕ transformer in detail with phasor diagram on inductive load. 20

9. Derive the equation of power in 3-ϕ delta connected system. 20