

Roll No.

OLE-24007

B. Tech 1st Semester (Common for All Branches) Examination – April, 2021

ELECTRICAL 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 : (i) Question No. 1 is *compulsory*.

(ii) Attempt *four* more questions from four sections A, B, C & D by selecting at least *one* question from each Section.

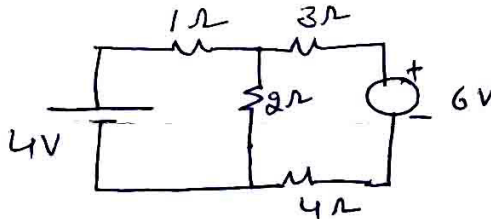
1. (a) What is power factor ? Explain physical significance of power system. 5

(b) Define Bilateral and unilateral Electrical network. 5

- (c) State and Explain Faraday's law of electromagnetic Induction. 5
- (d) Explain the significance of Damping Torque in measuring Instruments. 5

SECTION – A

2. State and Explain KCL. Explain nodal Analysis by taking some suitable example of Electric Network. 20
3. State and Explain Norton's Theorem. Find out the value of current flowing through 2Ω resistance by using Thevenin's Theorem in the given Network. 20



SECTION – B

4. Derive and explain the mathematical equation for RMS value of a sinusoidal AC signal. 20

5. What do you mean by acceptor and rejector circuits. Derive the mathematical formula for resonant frequency for both the circuits. 20

SECTION – C

6. Derive & Explain the equation for power in Three phase star connected AC system by using phasor diagram. 20
7. Draw and explain phasor diagram of a practical transformer on resistive load. 20

SECTION – D

8. Explain with the help of Double field revolving theory that single phase Induction motor is self starting or not ? Also Explain starting methods of 1-phase Induction motor. 20
9. Explain construction, working principle of single phase Energy meter with the help of neat diagram. 20
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