

Reg. No:

--	--	--	--	--	--	--	--	--	--

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

B.Tech I Year I Semester Supplementary Examinations November-2022

PRINCIPLES OF ELECTRICAL ENGINEERING

(Common to CSE, CSIT, CSM, CIC, CAD & CCC)

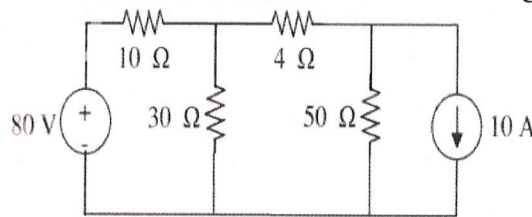
Time: 3 hours

Max. Marks: 60

(Answer all Five Units 5 x 12 = 60 Marks)

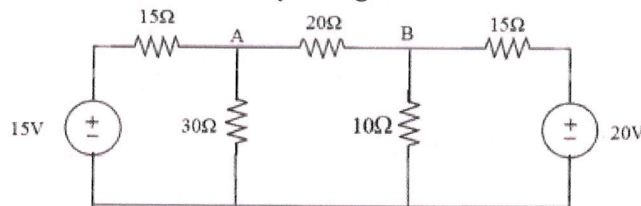
UNIT-I

- 1 a State and explain Norton's Theorem. L1 6M
b Verify Superposition Theorem for 4Ω resistor for the following circuit. L4 6M



OR

- 2 a State and explain Kirchhoff's laws. L1 6M
b Determine the current in branch A-B by using KVL L4 6M

**UNIT-II**

- 3 A series RLC circuit of $R=40\ \Omega$, $L= 50.07\text{mH}$ and a capacitor is connected across a 400V, 50Hz, A.C supply. This RLC combination draws a current of 10A. Calculate (i) Power factor of the circuit. (ii) Capacitor value. L2 12M

OR

- 4 a Derive an expression for RMS value of sine wave form. L2 6M
b An alternating current is expressed as $I = 14.14 \sin 314t$. Determine. (i) Maximum current (ii) RMS current (iii) Frequency (iv) Instantaneous current when $t = 0.02\text{msec}$. L4 6M

UNIT-III

- 5 List the various types of DC. Generators and Explain in detail. L2 12M

OR

- 6 a What is the necessity of speed control? L2 6M
b How to control the speed of DC Shunt motor? Explain it with any one example. L1 6M

UNIT-IV

- 7 Explain Working Principle of 3-Ø Induction Motor in detail. L2 12M

OR

- 8 Draw and Explain the constructional diagram of a single phase transformer. L2 12M

UNIT-V

- 9 Explain construction and operation of attraction type Moving Iron Instrument. L2 12M

OR

- 10 a Classify different types of measuring instruments. L1 6M
b Explain operating principles of Moving Iron and PMMC instruments. L2 6M

*** END ***

