R18 Regulation Subject Code:2E1AD

TKR COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous& Accredited with NAAC 'A' Grade)

B.Tech I Semester Supplementary Examinations, April 2023

BASIC ELECTRICAL ENGINEERING

(Common to CE,EEE,ME & IT)

Max. Marks: 70 **Date:15.04.2023 Duration: 3 hrs**

NOTE: This question paper contains two parts A&B. Part A is compulsory which carries 20 marks. Answer all questions in part A. Part B consists of 5 units. Answer any one full question from each unit Each question carries 10 marks and may have a,b,c

Part-A

Answer all the following 10X2M=20M

1 Define Ohms law & mention its Limitations.
2 Define Faradays law.
3 Assess the expression for RMS value of sinusoidal quantity
4 Define Form factor and RMS Value.
5 State Reciprocity theorem.
6 Contrast Thevenin's and Nortons theorem.
7 Assess the expression for generated EMF in a dc machine
8 List the losses exists in the transformer
9 List power factor improvement methods
10 List the types of Cables.

Part-B

Answer All the following questions. 5X10M =50M

11 Explain KCL & KVL with an example. (10M)

OR

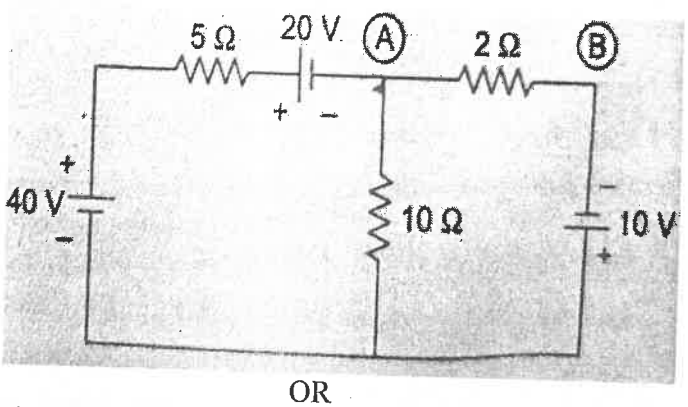
12 Build the expression for self-inductance, mutual inductance and coefficient of coupling of magnetic circuit. (10M)

13 Analyze voltage , current relationship in parallel RC circuit and draw its corresponding phasor diagrams. (10M)

OR

14 A coil has a resistance of 4 Ω and an inductance of 9.55 mH are connected in series. Find (i) the reactance (ii) the impedance and (iii) the current taken from a 240V, 50 Hz supply also the phase angle between the supply voltage and current. (10M)

15 Using superposition theorem, estimate current flowing in branch A-B for the circuit shown. (10M)



OR

16 State and explain Millman's theorem (DC & AC). (10M)

17 Derive the equation for induced EMF of a DC generator? (10M)

OR

18 Explain the principle of operation of transformer? Draw the phasor diagram for no load condition. (10M)

19 Explain Different Types of Batteries. (10M)

OR

20 Explain plate Earthing and pipe Earthing in detail. (10M)