Regulation R18 Subject Code:2E1AD

TKR COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous& Accredited with NAAC 'A' Grade)

B.TECH I SEMESTER SUPPLEMENTARY EXAMINATIONS, APRIL 2022

BASIC ELECTRICAL ENGINEERING

(Common to CE,EEE,ME &IT)

Max. Marks: 70 **Date: 07.05.2022 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 Discuss Faradays law of electromagnetic induction.
3 Change the following rectangular quantities into polar.
a) 15+j40 (b) 10-j20
4 Define the terms i)Time Period and ii)Average Value
5 Define Norton's theorem and draw the Norton's equivalent circuit.
6 State the Tellgen's theorem.
7 Define the EMF.
8 Compare ideal transformer and practical transformer.
9 Mention the importance of Earthing.
10 List the types of Cables.

Part-B

Answer All the following questions. Marks: 5X10M =50M

11 Explain KCL & KVL with an example 10M

OR

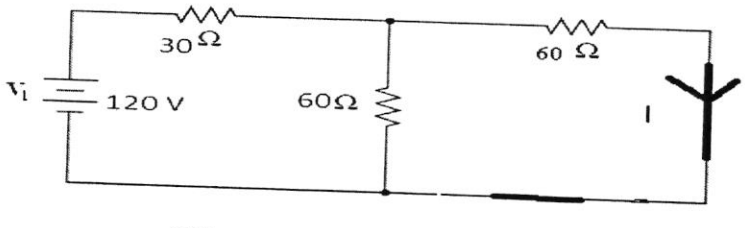
12 Build the expression for self-inductance, mutual inductance and coefficient of coupling of magnetic circuit. 10M

13 Derive the expression for Form factor and Peak factor value of sinusoidal waveform. 10M

OR

14 Estimate the Voltage, current and power equations and draw the phasor diagram of RL parallel ac circuit 10M

15 Find current through 60 Ohm resister for the following circuit using Norton's Theorem. 10M



OR

16 Explain maximum power transfer theorem with suitable example (AC) and derive the expression for maximum power delivered to the load. 10M

17 Explain the following terms in a DC machine with neat diagram 10M
i. Yoke
ii. Armature core
iii. Armature winding
iv. Commutator
v. Brushes

OR

18 Explain the operation of a single phase transformer under 10M
i)Lagging load
ii)Leading load
with neat diagrams

19 (i)Compare meter board and distribution board 5M
(ii)Explain about Battery backup. 5M

OR

20 Explain characteristics of Batteries. 10M