Regulation R18 *Subject code:2E2AJ*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A' Grade)

B.Tech II Semester Supplementary Examinations, September 2023

BASIC ELECTRICAL ENGINEERING

(Common to ECE & CSE)

Maximum Marks: 70 Date:22.09.2023 Duration: 3 hours

Note: 1.This question paper contains two parts A and B.
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10x2M=20 Marks)

1 Distinguish between i) conductor ii)semiconductor iii) insulator
2 Define ideal voltage and current source.
3 What is polar form and rectangular form?
4 Define i) form factor ii) peak factor
5 Define superposition theorem.
6 Define Tellegen's theorem.
7 Write the difference between core and shell type transformers?
8 State Fleming's Right Hand Rule?
9 How you decide what size of electrical wire do you need?
10 List the types of cables.

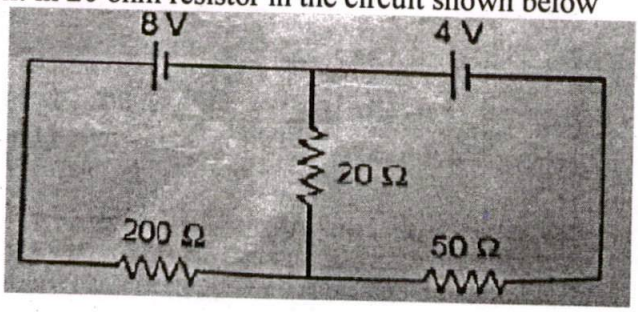
Part-B

Answer All the following questions. (5X10M=50Marks)

11 Explain derivation of delta-star conversion equations? 10M

OR

12 Calculate the current in 20 ohm resistor in the circuit shown below 10M

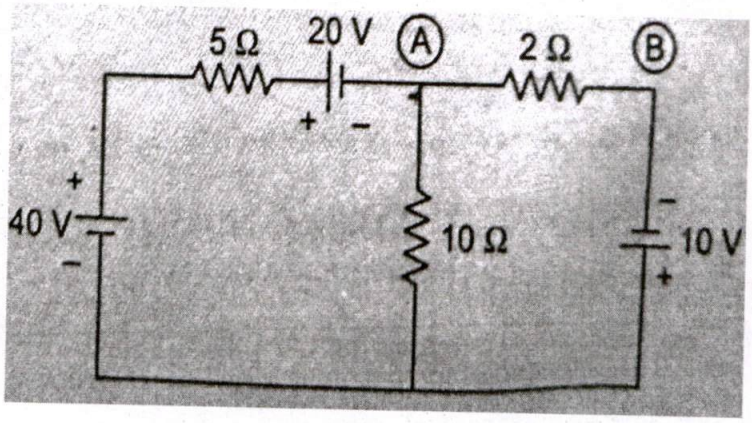


13 Define average value of an alternating quantity. Obtain the relation between average value and the maximum value of an alternating quantity. 10M

OR

14 A voltage V=141 sin{314t+π/3} is applied to i) resistor of 20 Ω ii) Inductance of 0.1 henry iii) capacitance of 100μF Find in each case rms value of current and power dissipated . 10M

15 Using superposition theorem, calculate current flowing in branch A-B for the circuit shown 10M



OR

16 State and explain millman's theorem and mention limitations of millman's theorem 10M

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

OR

18 Explain the principle of operation of transformer and losses. 10M

19 Explain the different types of MCB'S in details 10M

OR

20 a) Explain about meter board and distribution board in detail. 5M

b) Write short notes on Earthing? 5M