



R18 Regulation

Subject code:2E2AJ

# TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

**B.Tech II Semester Supplementary Examinations, January 2026**

## BASIC ELECTRICAL ENGINEERING

(Common to ECE & CSE)

Maximum Marks: 70

Date:27.01.2026

Duration: 3 hours

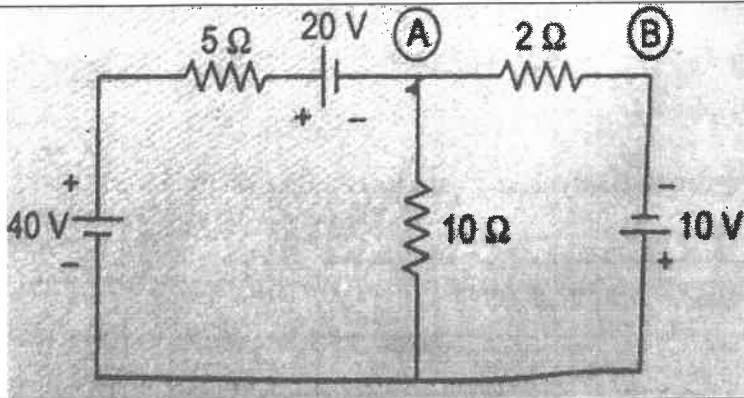
- Note:
1. This question paper contains two parts A and B.
  2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
  3. Part B consists of 5 Units. Answer any one full question from each unit.
  4. Each question carries 10 marks and may have a, b, c, d as sub questions.

### Part-A

All the following questions carry equal marks (10X2M=20 Marks)		Marks	CO	BTL
1	State Ohms law.	2M	1	L1
2	State Faradays law of electromagnetic induction.	2M	1	L1
3	Explain polar form and rectangular form.	2M	2	L1
4	Define i) form factor ii) peak factor	2M	2	L1
5	State Reciprocity theorem.	2M	3	L1
6	State Tellgen's theorem.	2M	3	L1
7	Write expression for generated EMF in a dc machine.	2M	4	L1
8	List the losses exist in the transformer.	2M	4	L1
9	List power factor improvement methods.	2M	5	L1
10	List the types of MCB's.	2M	5	L1

### Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	Explain mesh Analysis with an example.	10M	1	L2
OR				
12	Derive the expression for self-inductance, mutual inductance and Draw the B-H Curve.	10M	1	L2
13	Explain average value, RMS value in Graphical Method & Analytical method.	10M	2	L2
OR				
14	A coil has a resistance of 4 $\Omega$ and an inductance of 9.55 mH. Are connected in series Determine (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	2	L2
15	Using superposition theorem, calculate current flowing in branch A-B for the circuit shown.	10M	3	L2



	OR			
16	State and explain millman's theorem with example.	10M	3	L2
17	Derive the EMF equation of a Transformer.	10M	4	L2
	OR			
18	Obtain the equivalent circuit of single-phase transformer referred to the primary side.	10M	4	L2
19	Explain the function of circuit breaker and describe about MCB, ELCB and MCCB.	10M	5	L2
	OR			
20	Define Power Factor & Explain the methods for the improvement of power factor.	10M	5	L2