R18 Regulation *Subject code:2E2AJ*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech II Semester Supplementary Examinations, June 2026

BASIC ELECTRICAL ENGINEERING

(Common to ECE & CSE)

Maximum Marks: 70 Date: 24.06.2026 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 Ohm's law?	2M	1	L1
2	Define the Lenz's Law?	2M	1	L1
3	Define frequency?	2M	2	L1
4	Convert the following rectangular quantity into polar quantity (20+j30)	2M	2	L1
5	Draw the Thevenin's equivalent circuit?	2M	3	L1
6	State Tellegen's theorem.	2M	3	L1
7	State the function of Commutator in DC Generator?	2M	4	L1
8	Define voltage regulation of a transformer?	2M	4	L1
9	Explain the importance of Earthing?	2M	5	L1
10	Explain the terms i) Meter Board ii) Distribution Board	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	Derive the Voltage, current and power equations and draw the phasor diagram of RL series ac circuit.	10M	2	L2
	OR			
14	Outline the resonance of series RLC circuit and derive expressions for resonance frequency, quality factor and bandwidth.	10M	2	L2
15	State and explain the Norton's theorem with suitable example.	10M	3	L2
	OR			
16	State and explain Millman's theorem and mention limitations of Millman's theorem.	10M	3	L2

17	Explain the principle and construction of a DC Generator? Derive the equation for induced EMF of a DC generator?	10M	4	L2
	OR			
18	Derive the approximate equivalent circuit of a single phase transformer?	10M	4	L2
19	Explain the different types of MCB'S in detail?	10M	5	L2
	OR			
20	Explain briefly the concept of Earthing and Grounding?	10M	5	L2