R22 Regulation *Subject code:4B1AL*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech I Semester Supplementary Examinations, January 2026

BASIC ELECTRICAL ENGINEERING

(Common to IT & CSE(DS))

Maximum Marks: 60 Date: 21.01.2026 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 (10X1M=10 Marks)		Marks	CO	BTL
1.a	Define Ohms law & Mention its limitation	1M	1	L1
b	Classify independent source	1M	1	L1
c	Define current	1M	2	L1
d	Define form factor	1M	2	L1
e	What is the other name for short circuit test	1M	3	L1
f	State the difference between ideal and practical transformer.	1M	3	L1
g	Write the construction parts of Dc Generator	1M	4	L1
h	Define Slip	1M	4	L1
i	Full form of ELCB	1M	5	L1
j	Application of primary batteries	1M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
2	State and explain the Norton's theorem with example.	10M	1	L2
	OR			
3	State and explain the Thevenin's theorem with example.	10M	1	L2
4	Derive the expression for average value, RMS value of sinusoidal waveform.	10M	2	L2
	OR			
5	Estimate the Voltage, current equations of RC series dc circuit.	10M	2	L2
6	a) Explain the principle of operation of transformer? b) Explain the Regulation and efficiency in a Transformer?	5M 5M	3	L2
	OR			
7	Build the equivalent circuit of single phase transformer referred to the Primary side.	10M	3	L2

8	Explain the construction of a DC generator with neat Diagram.	10M	4	L2
	OR			
9	An 8-pole d.c. generator has 500 armature conductors, and a useful flux of 0.05 Wb per pole. What will be the e.m.f. generated if it is lap-connected and runs at 1200 rpm?	10M	4	L2
10	Explain construction and working of MCB	10M	5	L2
	OR			
11	Explain construction & working of ELCB.	10M	5	L2