R22 Regulation *Subject code:4B1AL*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech I Semester Supplementary Examinations, June 2026

BASIC ELECTRICAL ENGINEERING

(Common to IT & CSE(DS))

Maximum Marks: 60 Date: 25.06.2026 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 (10X1M=10 Marks)		Marks	CO	BTL
1.a	Define Ohms law.	1M	1	1
b	Classify independent source.	1M	1	1
c	Define current.	1M	2	1
d	Define form factor.	1M	2	2
e	What is the other name for short circuit test?	1M	3	1
f	State the difference between ideal and practical transformer.	1M	3	1
g	Write the construction parts of Dc Generator.	1M	4	2
h	Define Slip.	1M	4	1
i	Full form of ELCB.	1M	5	2
j	Application of primary batteries.	1M	5	3

Part-B

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

8	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 Wave-connected and runs at 1200 rpm?	10M	4	2
	OR			
9	Explain the construction and working principle operation of DC generator.	10M	4	2
10	Explain construction and working of MCB.	10M	5	2
	OR			
11	a) Explain the important characteristics of batteries. b) What is the importance of power factor improvement.	5M 5M	5	2