



R22 Regulation

Subject code: 405BB

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech V Semester Regular Examinations, December 2024

ELECTRICAL ENGINEERING MATERIALS

(EEE)

Maximum Marks: 60

Date: 06.01.2025

Duration: 3 hours

- Note:
1. This question paper contains two parts A and B.
 2. Part A is compulsory which carries 10 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		CO	Bloom Tx
All the following questions carry equal marks (10X1M=10 Marks)			
1.a)	What is meant by polarization in dielectric materials?	1	1
b)	List any four dielectric materials.	1	1
c)	Compare soft magnetic materials with hard magnetic materials in any three aspects.	2	2
d)	Mention the types of magnetic materials with examples.	2	1
e)	Define semiconductors and give examples.	3	1
f)	List any types of semiconductors and state their applications.	3	1
g)	What is meant by bimetal and mention its applications?	4	1
h)	What is the effect of moisture on insulation.	4	1
i)	What are refractive materials?	5	1
j)	Write short note on radioactive materials.	5	1
Part-B			
Answer All the following questions. (5X10M=50 Marks)		CO	Bloom Tx
2	Explain the terms piezoelectricity and ferroelectricity. Discuss the materials having these properties and their uses. [10M]	1	2
OR			
3	Explain properties of ferro magnetic materials. [10M]	1	2
4	Explain the classification of magnetic materials with comparison chart. [10M]	2	2
OR			
5	Explain soft and hard magnetic materials. [10M]	2	2
6	Explain the formation of N-type semiconductors in detail. [10M]	3	2
OR			
7	Write short note on large and very large-scale integration techniques (VLSI). [10M]	3	1
8	Describe the solid liquid and gaseous insulating materials. [10M]	4	3
OR			

9	Write one application for the given dielectric materials. (i) Mica (ii) PVC (iii) Polythene (iv) Glass (v) Rubber (vi) Cotton [10M]	4	1
10	Explain the properties and applications of mineral oils and transformer oil. [10M]	5	2
	OR		
11	Describe the testing of transformer oil as per ISI standards. [10M]	5	3