R18 Regulation *Subject code: 2P3BE*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech III Semester Supplementary Examinations, July 2024

ELECTROMAGNETIC FIELDS

(EEE)

Maximum Marks: 70 Date:27.07.2024 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 which carries 10M.
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)		CO	Bloom Tx
1	What are the source of electric field.	1	L1
2	State divergence theorem.	1	L1
3	Name 3 coordinate systems used in electromagnetic engineering?	2	L1
4	Define point charge.	2	L1
5	Define magnetic flux density	3	L1
6	Define magnetic dipole.	3	L1
7	What Is significance of displacement current	4	L1
8	What is self inductance	4	L1
9	Define skin depth.	5	L1
10	Define Polarization	5	L1
	Part-B		
Answer All the following questions. (5X10M=50Marks)			
11	State and proof divergence theorem. [10M]	1	L2
	OR		
12	Explain the rectangular co-ordinate system with neat diagram. [10M]	1	L2
13	Find the electric field intensity produced by a charge distribution at p(1,1,1)caused by four identical 3nc point charge located at $P_1(1,1,0)$, $P_2(-1,1,0)$ $P_3(-1,-1,0)$ $P_4(1,-1,0)$. [10M]	2	L2
	OR		
14	What are the charge distributions, explain the electric field intensity due to various charge distributions. [10M]	2	L2
15	State Gauss law and mention few applications of it. [10M]	3	L2
	OR		
16	Using ampere's circuital law, find MFI due to an infinite sheet of current. [10M]	3	L2
17	Derive an expression for self and mutual inductance of a coil. [10M]	4	L2
	OR		

18	Find the force between two straight long and parallel current carrying conductors in the same and opposite directions. [10M]	4	L2
19	Derive General field relation for time varying electric and magnetic fields using Maxwell's' equations. [10M]	5	L2
	OR		
20	Discuss about the plane waves in lossy dielectrics. [10M]	5	L2