



R18 Regulation *Subject code: 2B2AF*
TKR COLLEGE OF ENGINEERING AND TECHNOLOGY
(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech II Semester Supplementary Examinations, June 2024

APPLIED PHYSICS-II
(Common to EEE,ECE,CSE & IT)

Maximum Marks: 70

Date:26.06.2024 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 is diffusion and drift?	1	L1
2	Write the applications of Hall effect.	1	L1
3	What is radiative & non – radiative recombination's?	2	L1
4	Write the applications of LED	2	L1
5	Write laws of electrostatics.	3	L1
6	What is Biot – Sawarts law	3	L1
7	Draw the BaTio ₃ structure?	4	L1
8	Define Dipole moment	4	L1
9	What is Bohr magneton?	5	L1
10	Write the applications of super conductivity.	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)			
11	(a) Calculate the carrier concentration for p- type semiconductor. [5M] (b) Explain V-I characteristics of p-n junction diode in forward bias and Zener diode in reverse bias. [5M]	1	L2
OR			
12	Describe the construction and working principle of BJT[10M]	1	L2
13	What is solar cell? Explain the V- I characteristics & applications of solar cell. [10M]	2	L2
OR			
14	(a) Write the working principle & characteristics of LED. [7M] (b) Calculate the wavelength of light emitted by an LED with band gap of energy 1.8ev. [3M]	2	L2
15	(a) What are Maxwell's equations. [5M] (b) Derive the continuity equation using laws of electrostatics. [5M]	3	L2

	OR		
16	(a) Explain Stoke's theorem [5M] (b) Calculate vector potential for a given magnetic field using Stoke's theorem [5M]	3	L2
17	Explain electronic polarization & derive electronic polarizability? [10M]	4	L2
	OR		
18	(a) Derive Clausius – Mossotti relation. [7M] (b) Explain internal field in dielectrics. [3M]	4	L2
19	(a) What is Bohr magneton. [5M] (b) Write a note on soft & hard magnetic material [5M]	5	L2
	OR		
20	(a) Explain hysteresis curve based on domain theory. [5M] (b) Differentiate type-I and type –II super conductors. [5M]	5	L2