



R22 Regulation

Subject code:4B1AK

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech I Semester Supplementary Examinations, January 2026

APPLIED PHYSICS

(IT)

Maximum Marks: 60

Date: 07.01.2026

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

Table with 5 columns: Question ID, Question Text, Marks, CO, BTL. Contains 10 rows of questions related to matter waves, Fermi level, Bloch's theorem, drift current, Hall Effect, solar cell, luminescence, and quantum logic gate.

Part-B

Table with 5 columns: Question ID, Question Text, Marks, CO, BTL. Contains 7 rows of questions including Schrodinger wave equation, Davisson and Germer's experiment, material classification, Kronig-Penny model, and Hall Effect.

8	Describe the construction and working of solar cell with the help of neat labeled diagram.	10M	4	L2
OR				
9	What is electronic polarization? Derive an expression for electronic polarization.	10M	4	L2
10	Define acceptance angle. Derive an expression for Numerical Aperture of fiber.	10M	5	L2
OR				
11	Explain the CNOT Qubit gate with truth table.	10M	5	L2