

Code No.: AP102BS

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CMR ENGINEERING COLLEGE : HYDERABAD
UGC AUTONOMOUS
I-B.TECH-I-Semester End Examinations (Regular) - JULY- 2021
APPLIED PHYSICS
(Common to CSE, INF, CSD, CSC)

[Time: 3 Hours]

[Max. Marks: 70]

1. Answer Any **FIVE** Questions. Each Question Carries 14 Marks
2. Illustrate your answers with NEAT sketches wherever necessary.

5 x 14M=70M

1. a. Discuss the de Broglie's hypothesis of duality of material particles.
b. Determine the time independent wave equation?
2. a. Give brief account of Kronig-Penny model. What are its main conclusions?
b. Briefly, explain the formation of energy bands in solids.
3. a. Explain how a PN junction is formed. Draw IV characteristic curve of a PN junction diode and explain.
b. Explain the Hall Effect and its importance.
4. a. Determine the expression for the internal field in solids of dielectric materials?
b. Distinguish between the ferro electricity and pyro electricity?
5. a. Explain how ferrites are superior to ferromagnetic materials?
B.Explain the Domain theory of ferro magnetism on the basis of hysteresis curve.
6. a. Determine the relationship between Einstein's coefficients.
b. Discuss the construction and working principle of He-Ne laser.
7. a. Determine the equation for Acceptance angle and Numerical Aperture..
b..Explain the classification of optical fibers and mention the applications of optical fibers.
8. a. Why nanomaterials exhibiting different properties? Explain in detail
b. Discuss the Chemical Vapour deposition method of synthesis of nanomaterials.

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