Students Copy

MANJARA CHARITABLE TRUST
RAJIV GANDHI INSTITUTE OF TECHNOLOGY, MUMBAI
Department of Applied Sciences & Humanities

INTERNAL ASSESMENT (IA) - II

Date: 06/12/2024

Max. Marks: 15 | Duration: 45 minutes

Name of the Course : Applied Physics (BSC102)

Branch: All

Instructions:

7. From Question 1 (Solve any two)
8. From Question 2 (Solve any one)
9. From Question 3 (Solve any one)
10. Figures to the right of the question indicate full marks.
11. Assume the suitable data wherever necessary.
12. Illustrate your answers using neat diagrams wherever necessary.

Questions	Maximum Marks	Bloom's Taxonomy Level	Course Outcomes
Q.1 Solve any 2			
a) State and explain Divergence and Stokes theorem used in electrodynamics?	3	1	CO4
b) Write properties of matter wave?	3	1	CO5
c) If intrinsic carrier density in Germanium is 2.5×10^{19}/m3, Calculate its resistivity at temperature 300°k? (Given: mobility of electrons is 0.39 m^2/V-Sec. & mobility of holes is 0.19 m^2/V-Sec.)	3	2	CO6
Q.2 Solve any 1			
a) What is divergence & curl of vector field? Show that divergence of the curl of a vector field is zero?	4	3	CO4
b) Differentiate between direct and indirect band gap semiconductors	4	2	CO6
Q.3 Solve any 1			
a) State De' Broglie's hypothesis & Show that De' Broglie's wavelength of electron is inversely proportional to square root of accelerating potential?	5	2	CO5
b) State Heisenberg's uncertainty principle? Show that electron cannot exist in the nucleus of an atom?	5	2	CO5