



VP & RPTP Science College

Vallabh Vidyanagar-388120

B.Sc. (Semester - 4) Subject: Physics Course: US04CPHY01
Title of the paper: Electromagnetic Theory and Spectroscopy
Internal Test March 2015

Date: 13-03-2015, Friday

Time: 10.30 am to 12.00 noon

Total Marks: 25

Q-1 MCQs:

[3]

1. $\nabla^2 V = - \frac{\rho}{\epsilon_0}$ is called _____.
(a) Poisson's equation (b) Laplace's equation
(c) Coulomb's equation (d) Gauss's Equation
2. Two wire hang from the ceiling, a few centimeters apart the current passing in opposite direction then two wires _____.
(a) Repel each other (b) Attract each other (c) Remain steady (d) None of these
3. The effect of electric field on the spectrum is known as _____.
(a) Zeeman effect (b) Stark effect (c) Hall effect (d) None of these

Q-2 Short Questions [Attempt any TWO]

[4]

1. State Coulomb's law of electrostatics.
2. Prove that magnetic forces do not work.
3. Name three luminescence methods of production of spectra.

Q-3 Write a note on electric field.

[6]

OR

Q-3 Explain electric potential and give comments on the potential.

[6]

Q-4 Discuss: Ampere's law related to magnetic field.

[6]

OR

Q-4 State the Biot-Savart law. Using the Biot-Savart law, find the magnetic field a distance s from a long straight wire carrying steady current I.

[6]

Q-5 Describe: Line spectra and band spectra.

[6]

OR

Q-5 Name various quantum numbers and explain their physical interpretation.

[6]

=====All the best.