VEER NARMAD SOUTH GUJARAT UNIVERSITY,SURAT

ENGINEERING PHYSICS

SEMESTER – II

TEACHING SCHEME	**L=3; P/D=2; TA=1**
EXAMINATION SCHEME	**Theory = 3hours; Marks= 100**
PRACTICAL / DRAWING	**Internal evaluation marks : 20** **External evaluation marks: 30**

(A) THEORY:

1. Thermodynamics:

First law of thermodynamics and its application , reversible and irreversible processes, second law of thermodynamics, entropy and its calculation in reversible and irreversible processes, Entropy and second law of thermodynamics, Entropy and disorder, Enthalpy and free energy.

2. Electromagnetism:

Ampere's theorem and its applications to determine magnetic induction in case

(i) Conductor carrying current.
(ii) Solenoid
(iii) Toroid

Lorentz force, wall effect in metals, High energy particles accelerators, Cyclotron and Betatron.

Gauss's law for magnetism, Types of matter magnetism, Diamagnetism, Paramagnetism, Ferromagnetism, Nuclear Magnetism, three magnetic vectors.

3. Optics:

Spatial and termporal coherence, Interference by division of wave front and amplitude, interference by thin films, measurement of film thickness, Michelson's Interferometer, and light propagation, Frensel and Fraunhofer diffraction Fraunhofer diffraction at double slits, Multiple slits and circular
Aperture, Raylengh criterian, Resolving power of grating, telescope and prism.

Polarization, polarizing sheets, Nalus law, Polarization by reflection and Brewster's law, Polarization by scattering of light, Huygen's theory for uni-axial and bi-axial crystals. polarization by double refraction, Circular & ellipitical polarization by scattering of light.