CODE NO: 3441/BL

FACULTY OF Engineering & Technology

B.E / B.Tech (Bridge Course) I-Sem.(Backlog) Examination,June 2017

Subject: Engineering Physics

TIME: 3 HOURS **MAX: MARKS: 75**

Note: Answer All Questions From Part-A, & Any Five Questions From Part-B.

PART-A (10 X 2= 20 Marks)

1. A Soap film (μ= 1.33) in air is 320 nm thick. If it is illuminated with white light at normal incidence, what colour will it appear in reflected light?.

2 A 15 cm tube containing cane sugar solution (specific rotation 66^0) shows optical rotation of 7^0. Calculate the strength of the solution.

3. Define the terms Numerical Aperture (NA) and "Acceptance angle" of an optical fibre.

4. What are the basic principles of Holography.

5. Match the following

1. Electronic polarizability	(a) Ferro Magnetism
2. Weiss Molecular field theory	(b) Meissner's effect
3. Super conductors	(c) Nano Materials.
4. Ball Milling	(d) Volume of the atom
	(e) Thin Film

6. Distinguish good conductors, semi conductors and insulators on the basis of band theory of solids.

7. What are Type –I and II super conductors.

8. Explain the Hysteresis curve of Ferro magnetic materials.

9. What is quantum confinement of nano materials.

10. Define the Principle of X-ray Fluorescence .

Part-B (5 X 10= 50 Marks) All Bits carry equal marks

11(a) Explain the interference due to thin films and derive the conditions for maxima and minima
(b) Describe the construction and working of Nicol's prism.

12(a) Discuss the construction and reconstruction of image on Hologram.
(b) Apply the Schrodinger's wave equation to particle in an infinite square well potential and derive the expression for the energy of the particle.

13(a) Explain the terms, Atomic radius, coordinator number and no.of atoms per unit cell for SC, BCC & FCC systems.
(b) Derive the expression for conductivity of intrinsic semi conductors.

14(a) Explain the different mechanisms of dielectric polarization
(b) Discuss the domain theory of Ferro magnetism.

15(a) Describe the preparation of nano materials by sol-gel method
(b) Explain the working of TEM.

16(a) Discuss diffraction due to double slit and what are missing orders in it.
(b) Explain the construction and working of solid state Ruby laser

17(a) What is LED? Discuss its working principle
(b) What are General properties of super conductors.