

S. B. Roll. No.....

**APPLIED PHYSICS-II**  
**2<sup>nd</sup> Exam/Common/2753/Jun'2021**  
**(For 2018 Batch Onwards)**

**Duration: 1.15Hrs.**

**M.Marks:25**

**SECTION-A**

**Q1. Attempt any three questions.**

**3x5=15**

- i. Differentiate between transverse and longitudinal waves. Give one example of each.
- ii. Derive an expression for velocity of a particle executing S.H.M.
- iii. The velocity of light in glass is  $2 \times 10^8$  m/s. Find the refractive index of glass.
- iv. Write five properties of electric lines of force.
- v. Define resistance. What are the factors upon which resistance of a conductor depends?
- vi. State Kirchhoff's laws of electricity.
- vii. Differentiate between Intrinsic and extrinsic semiconductor. Give five differences.
- viii. What do you mean biasing of a p-n junction diode? Explain its types.

**SECTION-B**

**Attempt any one question.**

**1x10=10**

- Q2.** Derive lens formula for the convex lens when image formed is virtual.
- Q3.** State and prove Gauss law in electrostatics.
- Q4.** Find the equivalent resistance when three resistances are connected in (a) in series (b) in parallel
- Q5.** What is a Simple microscope? Draw optical diagram. Define magnifying power and find an expression for magnifying power of simple microscope.