

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

APPLIED PHYSICS-II
2nd Exam/Common/2753/Jun'2022
(For 2018 Batch Onwards)

Duration: 3Hrs.

M.Marks:75

SECTION-A

Q1. a) Fill in the blanks.

15x1=15

- i. SI unit of magnetic field is_____
- ii. _____band of insulators is completely filled.
- iii. The base of the transistor is _____doped.
- iv. Output of He-Ne Laser is a _____wave.
- v. _____are the majority charge carriers in p-type semiconductors.

b) State True or False.

- vi. Refractive index of vacuum is 1.
- vii. On doping, the conductivity of the semiconductor decreases.
- viii. 1 picofarad is a bigger unit than 1 nanofarad.
- ix. A wheatstone bridge is used to determine resistance.
- x. A charge at rest experiences no magnetic force.

c) Multiple Choice Questions.

- xi. The velocity of sound is maximum in a)water b)air c)steel d)vacuum
- xii. The radius of curvature of a plane mirror is a) 0 b) between 0 and 1 c) varies from surface to surface d) infinite
- xiii. Which of the following is not a unit of magnetic induction? a) Gauss b) Tesla c) Oersted d) Weber/m²
- xiv. Which of the following is not a semiconductor? a) Au b) Si c) Ge d) Ti
- xv. Which of the following is a paramagnetic substance? a)Bismuth b)Antimony c)Water d)Chromium

SECTION-B

Q2. Attempt any six questions.

6x5=30

- a. What is the difference between light waves and sound waves?
- b. What is Total Internal Reflection? Give essential conditions for its observation.
- c. Derive an expression for electric field intensity due to a straight charged conductor.
- d. What are the different types of charge distributions?
- e. Write down Faraday's laws of electromagnetic induction.
- f. Define specific resistance of a conductor.
- g. Differentiate between intrinsic and extrinsic semiconductors.
- h. Write a short note on Optical Fibre Communication.

SECTION-C

Attempt any three questions.

3x10=30

Q3. a) What are the characteristics of LASER Light.

b) Find equivalent resistance when 3 resistances are connected in series.

Q4. a) What is Simple Microscope? Find expression for its magnifying power.

b) What are the properties of electric lines of force?

Q5. a) Differentiate between Electromotive force (e.m.f.) and potential difference.

b) If length and area of cross-section of a conductor are doubled, find the net resistance of the conductor.

Q6. Explain the principle, construction and working of moving coil galvanometer.

Q7. Explain the working of p-n junction diode in detail.