

S.B. Roll No.....

APPLIED PHYSICS-I
1st Exam/Common/5752/Jan'2022
(FOR 2018 BATCH ONWARDS)

Duration: 1.15Hrs.

M.Marks:25

SECTION-A

Q1. Attempt any three questions.

3x5=15

- a. Differentiate between scalar and vector quantities.
- b. Write a note on banking of roads.
- c. A point on the rim of a wheel 4m in diameter has a linear velocity of 16ms^{-1} . Find the angular velocity of wheel in rad/second.
- d. At what temperature both Fahrenheit and Celsius scales will give same reading of temperature?
- e. Define coefficient of viscosity and give its CGS and SI units.
- f. What torque will produce an acceleration of 2 rad/s^2 in a body of Moment of Inertia of 500 kg/m^2 ?
- g. What is the difference between heat and temperature?

SECTION-B

Attempt any one question.

1x10=10

- Q2.** a) Prove that $1\text{ Joule}=10^7\text{ ergs}$ using dimensional equations.
b) Define Power and give its units and dimensions.
- Q3.** State and prove law of conservation of linear momentum.
- Q4.** a) Establish the relation between KWh and Joule.
b) Define Bulk Modulus of Elasticity. Give mathematical expression, dimensional formula and SI unit of Bulk modulus.
- Q5.** Show that for a freely falling body, total mechanical energy remains constant.