No. of Printed Pages : 4 120013

Roll No.

1st Sem/Common
Subject : Physics-I

ne : 3 Hrs. M.M. : 100

SECTION-A

Note: Very Short Answer type questions to be answered. Attempt any 15 parts. (15x2=30)

Q.1 i) Define stress with units.

ii) Write dimensional formula of work and momentum.

iii) What is fundamental unit.

iv) Define triangle law of addition of 2 vectors.

v) What is F.P.S system of fundamental unit.

vi) What is Gauge pressure.

vii) Define angular projection.

viii) Define Force with unit.

ix) Define Satellite.

x) Define Negative work.

xi) What is strain.

xii) Define Capillarity.

xiii) Define celcius scale of temperature measurement.

xiv) Define Viscosity.

xv) Define angular acceleration.

xvi) What is Escape Velocity.

xvii) Define Pressure with units.

xviii) What is a vector quality.

SECTION-B

Note: Short answer type questions to b e answered in 3-5 lines. Attempt any Four Questions. 10x4=40

Q.2 i) What is Principle of homogeneity of dimensions check homogenity of equation

$$E = mgh + \frac{1}{2} mv^2$$

ii) What are limitations of dimensional analysis.

iii) Derive Relation $v = rw$

iv) Define conduction and convection method.

v) Derive relation between frequency and time period.

vi) Define Rotational Kinetic energy and angular momentum.

vii) Write Note on typed of Pressures.

viii) What is Thermal conductivity and stefan's law.

ix) What is difference between heat and temperature.

x) Derive expression for K.E of a moving body.

xi) What are properties of heat radiations.

xii) Explain some principles for measurement of temperature.

xiii) Explain laws of friction for measurement of temperature.

xiv) Define centripetal ad centrifugal force with formula.

xv) What is effect of temperature and impurity on surface tension.

SECTION-C

Note: Long answer type questions. Attempt any 3 questions. 3x10=30

Q.3 State and prove law of conservation of energy of a freely falling body.

Q.4 a) Explain Banking of roads.

b) Write Note on Power.

Q.5 a) Calculate P.E. of a body of mass 15kg when raised through height 60 meter. $g = 10 m/sec^2$

b) Explain Resolution of force.

Q.6 Derive expression for Time of flight and Horizontal Range in angular projection.

Q.7 Find expression for magnitude and direction of resultant force in case of parallelogram law for addition of 2 forces.