Engg Physics

Set-1

1) 2x10

(a) Write down the units of the following Physical Quantities

i) Power

ii) Wavelength

b) State parallelogram law of vector addition

c) What is electric current?

d) Define unit charge

e) Write down two application of ultrasonic

f) Define mechanical equivalent of heat

g) State lenz's Law

h) Define Specific heat

i) What Ohms Law

j) State the Laws of Reflection

2) 5x6

a) Check the correctness

$v^2 - u^2 = 2as$

b) State Kepler's laws of Planetary motion

c) Distinguish between longitudinal and transverse Wave

d) State and explain Coulomb's law of electrostatic

e) Define Critical angle and total internal reflection

f) Calculate the velocity of particle in shorter distance move 20 m Within time 4 minute.

3) State laws of limiting friction and discuss the methods of Reduce

4) Derive the expression for equation of trajectory, Time flight, maximum height for a projectile fired at angle θ with horizontale

5) State and explain Newton Law of Gravitation

Engg Physics
Set-2

2x10

1) a) Write down the dimensions of following quantities
   i) Energy
   ii) force
   b) Write two Property of charge
   c) What is total internal Reflection.
   d) State Triangle Law of vector addition
   e) Establish the Relation between velocity, angular velocity and Radius
   f) What is the unit of Resistance
   g) $\vec{A} = 4\hat{i} + 3\hat{j} + 2\hat{k}$, $\vec{B} = 5\hat{i} + 2\hat{j} + \hat{k}$ find $\vec{A} \times \vec{B}$
   h) Define unit Pole
   i) under what condition the range of a Projectile is maximum
   j) Define Work

2) a) Check the correctness 5x6

$$T = 2\pi\sqrt{\frac{l}{g}}$$

b) The potential due to a point charge is 6 V at a distance of 3 cm from it. Calculate the electric field due to the charge at the same point

c) Explain the heating effect of current

d) Derive the expression for effective capacitance of capacitor.

e) Explain SHM

f) What is superficial expansion

3) What is Heat and derive the Relation between superficial expansion cubical expansion and volume expansion

4) Write down Properties of magnetism and Coulomb law of magnetism

5) What is Refractive index and Derive $\mu = \frac{\sin(A+D_m)}{\sin\frac{A}{2}}$

Engg Physics

Set - 3

1 (a) Give the Dimensions of 2×10

i) electric field ii) electric current

b) What is Vector ? Give one example

c) How wave particle are vibrating on a medium during the propagation of wave

d) Give two use of dimensional analysis

e) State Polygon law of vector addition.

f) Why find the horizontale force required to move a body weighty 200 kg on a rough horizontale surface have co-efficient friction

g) Why weight of a body vanishes at center of earth

h) If Presure of sound of sound wave change to half of its original value then what happens to velocity

i) What is the Relation between Phase difference and Path difference

j) What is Snell's Law

5X6

2) a) $\vec{A} = \hat{i} + \hat{j} - \hat{k}$, $\vec{B} = 2\hat{i} + 2\hat{j} - 2\hat{k}$ find the angle betⁿ them

b) State and show 'g' varies with depth

c) State and explain Work energy principle

d) Write down 5 Properties of lines of forces

e) State and explain 1st Law of thermodynamics

f) Derive expression for Potential at any Point due to single point charge

3) Write down the Relation between Linear and angular velocity and Acceleration

4) State and explain Triangle law of vector addition

5) What is parallel plate capacitor and expression of the combination

Set-4

1 (a) the dimensional formula of
i) Power ii) Specific heat

b) What is the maximum and minimum value of Resultant vector P and Q

c) Why a body has less weight on a hill than on the surface of earth

d) Why two lines of force never intersect each other

e) Give two use of laser beam

f) What is mass and weight

g) What is Co-efficient friction

h) State 2nd Law of thermodynamics

i) Write two application of Optical fibre

j) State ohms Law

2)

a) State and explain series combination of Resistance

b) Derive formula of orbital velocity

c) Derive for expansion of solid

d) What is difference between electrostatic and magnetism

e) What are condition of total internal Reflection

f) Establish a Relation between wavelength and frequency of wave

g) What is Latent & Peeific heat

h) State faradys law of electromagnetic induction

3) What is magnetic dipole? Define expression for B at point on
   i) axial line
   ii) equitorial line

4) Distinguish between Progressive wave and Stationary wave

5) Define ultrasonic wave, write down the Properties and application