Assignment Topics for 21AY B.Sc Physics(I Sem) – Mechanics and Properties of Matter (UPHYCS1)

Unit I
1. Collision - Elastic and Inelastic collision
2. Newton’s law of impact – Direct and Oblique impact of moving two spheres

Unit II
3. Moment of inertia of circular disc about an axis passing through its center as perpendicular to its plane, through its diameter, through its tangent.
4. Kinetic energy of rotation and the work energy theorem – Conservation of angular momentum.

Unit III
5. Gravitation – Newton’s Law of gravitation – Kepler’s law of planetary motion
6. Determination of G (Boy’s Method) – Variation of ‘g’ with altitude, depth and latitude

Unit IV
8. Young’s modulus, Bulk modulus, Rigidity modulus – Bending of a beam

Unit V
10. Laminar and Vortex flow – Poiseuille equation for flow of liquid through a tube.
Unit I
1. S.I. Units – measurements of length, mass, time and other physical quantities
2. Dimensional formula for area, volume, density and force – Uses of dimension.

Unit II
4. Specific heat capacity – Specific latent heat of ice and steam.

Unit III
5. Kinds of energy – Mechanical energy, Thermal energy, Optical energy, Sound energy, Electrical energy.

Unit IV
7. Renewable and Non-renewable energy – fossil fuel – coal oil – Biomass

Unit V
9. Mirror – Laws of reflection – Image formation (Concave and Convex mirror) lens
10. Law of refraction – image formation(Concave and convex lens)
11. Defects of eye and rectification.
Assignment Topics for 21AY B.Sc Physics(I Sem) – Programming in C (UPHYDEC1)

Unit I
2. Introduction to C – History of C – Basics of C.

Unit II
3. Arrays, Functions and pointers: Arrays - one, two and multi-dimensional arrays
4. Structures – defining a structure – declaring structure variables – structure initialization – arrays of structures – arrays within structures and functions

Unit III
5. Operators, Expressions & I/O functions Types of operators - Arithmetic, Relational, logical, assignment, increment, decrement, conditional, bitwise, and special operators.
6. Arithmetic expressions - mathematical functions - priority of operators - data input and output – getchar(), putchar(), gets(), puts(), scanf(), and printf().

Unit IV
7. Control statements simple IF statement - simple IF-ELSE statement – Block IF statement – Block IF-ELSE statement

Unit V
11. Pre-processor derivatives, simple programs in arrays, functions, pointers, structures and union.