1st Unit test- (Question Bank)
Class: For Mechanical (ME2K), Civil (CE2K) and Electrical (EE2K) branches.
(Second Sem K scheme)
Applied Science (ASC - 312308)-Physics

2 marks question on CO1
1) Define stress and strain.
2) State elasticity and plasticity.
3) State any two factors affecting elasticity.
4) State Newton's second law of motion with it's unit.
5) Define Angular velocity and angular acceleration with it's unit.
6) Calculate stress if a load of 10 N is attached to the lower end of wire of radius 1 mm.
7) Derive relation between angular velocity and linear velocity.
8) Define power and work with its S.I. Units.

4 marks question

1) Define Young's modulus, Bulk modulus and Modulus of rigidity. State relation between them.

2) A wire of diameter 4 mm and length 2 m extends by 2 mm when a force of 10 N is applied. Find Young's modulus of the wire.

3) Define (i) Elastic limit (ii) Yield point (iii) Poisson's ratio (iv) Factor of safety.

4) i) State the law of conservation of momentum for a system of two colliding bodies. Also state its mathematical formula.

ii) A bullet of mass 40gm is fired with a muzzle velocity of 500m/sec. from a gun of mass 4 kg. Calculate the recoil velocity of the gun.

5) Define:- i) Angle of projection   ii) Range of projectile.

   iii) Trajectory   iv) Time of flight

6) Define potential energy. A box of 15 kg falls down from a height of 400 cm. Calculate the loss of potential energy. (Take g = 9.81 m/sec^2)

7) Write any four Application of Newton's First law of motion.

8) Write three equations of angular motion. Give meaning of each symbol.

Unit IV. Metals And Alloys

2 marks question

1. Give reason with example,"All ores are minerals, but all minerals are not ores".

2. Define – (any two) Mineral, Ore, Gangue, Flux, Slag.

3. State the principle of Froth Floatation method.

4. Give alloys. Give two examples.

5. Give the composition of Duralumin and Tinman's solder.

6. Write the composition of Wood's metal and Gun Metal.

7. Give the classification of plain carbon steel.

8. Define- Soldering and Machinability.

4 marks question

1. Name the metal in the given ore/mineral and its chemical formula.

a. Hematite b. Bauxite c. Copper pyrite d. Tinstone

2. Explain gravity separation method for concentration of ore.

3. Discuss magnetic separation method for concentration of ore.

4. Differentiate between calcination and roasting.

5. Explain poling method of refining of metal.

6. Define – Hardness, Ductility, Malleability, Tensile strength.

7. Give the purposes of making alloys.

8. Explain fusion method for preparation of alloys.