Physical Quantity and Measurement

Marks: 40   **Time: 1 hr 15 mins**

1. **MCQ Questions**   **1×15=15**
   https://docs.google.com/forms/d/e/1FAIpQLSdNS2d5VjWaKwZYzZ_oPo31cyOglPwjRVyaVCJ JhQZj6tY13A/viewform?usp=sf_link

2. **Short questions**   **1×15=15**
   a. How does the density of a liquid change with a decrease in temperature?
   b. State Archimedes' principle.
   c. What is the meaning of the statement, "The density of lead is 11.34 g/cm^3"?
   d. What is relative density?
   e. The density of water is 1 g/cm^3 and the density of alcohol is 0.79 g/cm^3. Will ice with a density of 0.9 g/cm^3 float on a) water; (b) alcohol? Give reasons.
   f. What is a measuring cylinder?
   g. Why Relative Density has no unit?
   h. Show how you will convert density from kg/m^3 to g/cm^3
   i. What is a eureka can used for?
   j. The degree of immersion of Solid depends on which factors?
   k. How will you use a measuring cylinder to determine the volume of a solid?
   l. What is buoyant force?
   m. Define density. What is its SI unit?
   n. How can we measure the density of Gas?
   o. What is a density bottle?

3. **Numerical problems**   **2×5=10**
   a. An iron object has a volume of 25 cm^3.Given that the density of iron is 7.87 g/cm^3 What is the mass of the object?
   b. Calculate the relative density of liquid A from the following information.
      Mass of 1 cm^3 of water is 1 g; mass of an empty density bottle is 22.5 g, mass of the density bottle filled with water is 47.5 g mass of the density bottle containing liquid A is 59.5 g
   c. A density bottle of capacity 25 ml weighs 50 g when empty and 100 g when filled with a liquid. What is the density of the liquid?
   d. A metal sphere of mass 200 g displaces 10 mL of water. What is the density of the density of the sphere?
   e. The relative density of an object is 3 and it has a mass of 600 g What is the volume of water it will displace if it is immersed in the water?