INTERNATIONAL INDIAN SCHOOL, RIYADH

CLASS IX **SAII** **WORKSHEET - PHYSICS**

GRAVITATION - FLOATATION

1. **What you mean by buoyancy? What happens when buoyant force exerted by the fluid is equal to the weight of the body?**
2. **An object is suspended with a string, the string get stretched. When the object is completely immersed in water the extension of thread decreases. Explain why it is so happens.**
3. **Define the SI unit of pressure. The pressure exerted by the weight of a cubical block of side 4 cm on the surface is Pascal. Calculate the weight of the block.**
4. **A metallic block of 6 kg is dropped into a water tank. The volume of the block is given to be $3X10^{-3}$ m^3 and density of water is 10^3 kg/m^3. Find**
    a) **Buoyant force in the block.**
    b) **Density of metallic block.**
    c) **Whether it sinks in water.**
5. **A solid 'X', insoluble in water weighs 180gf in air and 150gf in water. What is the relative density of the solid 'X'?**
6. **Why do we use broad handle for suitcases?**
7. **Express the weight of an object of mass 100g in newton.**
8. **Write two precautions that should be taken while doing the experiment of determining the density of solid using a spring balance and a measuring cylinder.**
9. **State Archimedes' principle. How Archimedes principle is used to design ships and submarines. Mention the uses of lactometer and hydrometer.**
10. **A balloon filled with hydrogen gas floats in air. Explain this fact with reason.**
11. **a) Do all bodies immersed in a given fluid experience the same buoyant force? Explain.**
    b) A 100 cm^3 block has a mass of 395 g. find its relative density?
12. **Which of the two will double the pressure by doubling the area and force or by making the area half and why?**

WORK AND ENERGY

1. **When is work done by a force zero?**
2. **At what speed of a body of mass 1 kg will have a kinetic energy of 1J?**
3. **A man of mass 62 kg climbs up a staircase of 65 steps in 12s. If height of each step is 20 cm, find his power.**
4. **State the type of energy transformation in the following appliances**
   i) Loud speaker ii) microphone.
5. **When a force retards the motion of a body, what is the nature of work done by the force? State reason. List two examples of such a situation.**
6. **Derive an expression for the kinetic energy possessed by a moving body. What is the work to be done to increase the velocity of a car from 30 km/h to 60 km/h, if the mass of the car 1500 kg.**
7. **The engines of a public bus and a car moving with the same kinetic energy on a straight road are switched off simultaneously. Then which of the two will stop at a lesser distance?**
8. **Ramesh exerts a force of 150 N in pulling a cart at a constant speed of 15 m/s. Calculate the power spent by him.**
9. **Name the commercial unit of energy. Convert 1.8 X10^7 J of energy into kilowatt hour.**
10. **Justify that " a body at a greater height has larger energy"**

SOUND

1. **Why do we have two distinct sounds on placing our ears on a railway line when one hammers at some distance?**
2. **a) Define frequency and wave length of sound waves.**
   b) What is the frequency of the source of sound if the vibrating source sound makes 360 oscillations in minutes?
3. **Differentiate between transverse and longitudinal waves. Give one example of each.**
4. **What is the role of the three bones of middle ear?**
5. **If an observer standing between two cliffs receives echo at 1.5s and 4 s after clapping. Find the distance between the cliffs if the velocity of sound is 320 m/s.**
6. **What is the basic factor on which the speed of sound in a medium depend?**
7. **Define pitch of a sound. How will you differentiate a high pitch sound from a low pitch sound with the help of a graph?**
8. **Explain any one use of ultrasound.**
9. **Write two sources of error that can occur during the experiment of verification of laws of reflection of sound.**
10. **With the help of a diagram explain how the SONAR method is used to locate the underwater objects.**
