Delhi Public School, Jammu
Assessment
(FA-4), 2016-17

Class: 9th
Subject: Science
Physics:
Numericals:

1. A cube of wood, having dimensions $10cm \times 10cm \times 10cm$ is placed in a water tank. It is found 2cm of the cube remains outside the surface of water. Find the relative density of wood.
2. A metallic block of mass 5kg is dropped into a water tank. The volume of the block is given to be $2 \times 10^{-3}m^3$ and the density of water is $10^3 kgm^{-3}$. Find the (a) buoyant force on the block and (b) density of metallic block.
3. Define Archimedes's principle and give the factors affecting buoyant force.
4. The momentum of a body is increased by 10%. What is the percentage increase in kinetic energy of the body?
5. A rock climber of weight 600N climbs up a rock face of vertical height 300m in 3600s. What is the average power she generates against gravity during this time?
6. Two boys A and B are running, A over the smooth track with velocity $8ms^{-1}$ under frictional force of 10N and B over rough surface with velocity $3ms^{-1}$ under frictional force of 25N. Find which has more power?
7. A father racing his son has half the kinetic energy of the son, who has half the mass of the father. The father speeds up by 1m/s and then has the same kinetic energy as the son. What is the original speed of (a) father and (b) the son?
8. A force of 5N acts on a 15kg body initially at rest. Find the instantaneous power due to the force at the end of the third second.
9. A sound of frequency 500Hz travels in air with a speed of 360m/s. What is the minimum distance between two consecutive particles having phase difference of 180°?
10. A sound wave has frequency 4kHz and wavelength 25cm. How long will it take to travel 3km?

Chemistry:
Topic: Structure of atom

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Sub-Topics:

1. Thomsom model and drawbacks.
2. Rutherford experiment, observations and conclusions.
3. Achievements, model and drawbacks of rutherford model.
4. Bohr's model and achievements.
5. Discovery of neutron, discuss isobars and isotopes.

Biology:
Assignment topic:
Draw and explain carbon and nitrogen cycle.