

Delhi Public School, Jammu
Cycle Test-II and Assignment (2018-19)

Subject: Science

Class: 9th

Physics:

1. Define acceleration due to gravity. Also give factors affecting 'g'.
2. Define buoyant force and Pressure. Also give their SI units.
3. Why an iceberg floats on sea water?
4. Define Kinetic energy and Potential energy and derive expression for both.
5. Define Law of conservation of mechanical energy and derive expression for it.
6. Define density and relative density and give mathematical relations for them.
7. Give two examples related to (a) Kinetic energy and (b) Potential energy.
8. Define work. Give two examples when work done by body is zero.
9. Define Power and average power. What is the SI unit of Power?
10. Convert 1kWh into joules and define 1kwh.
11. State and prove law of conservation of linear momentum with neat diagram.
12. A bullet of mass 10g is fired with a velocity of 400ms^{-1} from a gun of mass 4kg. What is the recoil velocity of the gun?
13. How much momentum will an object of mass 10kg transfer to the floor if it falls from a height of 0.8m?
14. Define Archimede's principle. What are the applications of Archimede's principle?
15. A body of mass 400g and volume 350cm^3 is immersed in water of density 1gcm^{-3} , and then find the
 - (a) Density of the body.
 - (b) Find the amount of water displaced by a body.
 - (c) Give reason whether the body sinks or floats?

Chemistry:

1. Draw a labelled diagram of the experimental set-up to study the latent heat of fusion of ice.
2. What is evaporation? State two factors which affect evaporation.
3. Explain why, when a bottle of perfume is opened in a room, we can smell it even from a considerable distance?
4. Explain why, we can easily move our hand in air but to do the same through plank of wood, we need a karate expert?
5. Give reason;
 - (a) Our palm feels cool when we put some acetone on it.
 - (b) A desert cooler cool better on a hot, dry day.
 - (c) The temperature remains constant during the boiling of water even though heat is supplied continuously.
 - (d) A small amount of salt dissolves in water.
 - (e) Water is a liquid at room temperature.
6. What is a physical change? Give two examples of physical change.
7. What is suspension? Discuss some of its properties.
8. Define solubility of the substance. How does it vary with temperature?
9. Draw a flow diagram of the processes involved in obtaining gases like nitrogen, oxygen and argon from air.
10. Give the difference between the following;
 - (a) Saturated and unsaturated solution.
 - (b) Compound and mixture.
 - (c) Suspension and colloids.
 - (d) Homogeneous and heterogeneous mixtures.
 - (e) Metals and non-metals.

11. State the postulates of Dalton's atomic theory of matter. Also give its limitations.
12. Calculate the molecular mass of the following;
(a) H_2SO_4 (b) $CaCO_3$ (c) $CHCl_3$ (d) $NaNO_3$
13. Derive the formulae of the following;
(a) Calcium phosphate (b) Aluminium sulphate (c) Sodium Nitride.
14. Define law of conservation of mass and law of constant proportion with example.
15. (a) Calculate the mass of carbon present in 121g of CO_2 .
(b) 4.90g of potassium chlorate when heated produces 1.92g of oxygen and x g of residue is left behind.
What is the mass of the residue if results follow law of conservation of mass?
(c) Copper oxide is prepared by two different methods. In one case 1.75g of metal gave 2.19g of oxide. In second case, 1.14g of metal gave 1.43g of oxide. Show that the given data illustrates law of constant proportion.

Biology:

1. Which cell organelle detoxifies poison and drugs in liver of vertebrates?
2. Name the cell organelles that help to keep the cell clear by digesting the worn out cell organelles.
3. In a cell what are the advantages of the following?
(a) Flexibility of cell membrane.
(b) Rigidity of cell wall
(c) Selectively permeability of cell membrane.
4. (a) Mention different types of blood cells.
(b) Which substances are transported by blood?
5. What is epidermis? What is its role?
6. Differentiate between;
(a) Aerenchyma and chlorenchyma
(b) Ligaments and tendons
(c) Bone and cartilage
7. Give reason for the following;
(a) Bark of a tree is impervious to gases and water.
(b) Epidermis cells of the roots generally have hair like parts.
8. Why bee-keeping should be done in good pasturage?
9. What is genetic manipulation?
10. What are xanthium, parthenium and cyperinees rothendus?
How do they harm the crop production?
11. How does nitrogen fixation take place during lightning?
How do plants make use of the nitrates and nitrites present in the soil?
12. What are the three ways by which carbon-dioxide is returned back into atmosphere?
13. What are biochemical cycles and explain nitrogen cycle with diagram?
14. Explain how soil pollution is caused? Write three ways to prevent soil pollution?
15. Define ozone layer and give harmful effects of ozone depletion.