

Subject: Science

Worksheets

Section-A: Physics

Q1. State and explain law of conservation of momentum.

Q2. Give reasons:

(1) On applying sudden breaks driver gets a forward jerk.

(2) A fielder lowers his hands while catching a ball.

Q3. Draw the graph for the following cases:

(1) Velocity time graph for body undergoing retardation.

(2) Distance time graph for a body at rest.

Q4. An object of mass 2kg moving with a velocity of 5m/s collides and sticks to a stationary wooden block of mass 5kg. They both move off together. Calculate the speed of the combined object.

Q5. Calculate the momentum of object of mass 5kg moving at a speed of 20km/hr.

Q6. Differentiate between homogeneous and heterogeneous mixture.

Q6. Define compound and give its characteristics.

Q7. Define evaporation and explain how temperature and surface area affect the rate of evaporation.

Q8. What is an aqueous solution? Give two examples.

Q9. A solution is formed by dissolving 50 gm of salt in 100 gm of water. Find the Concentration of solution in terms of mass percentage of solution.

Q10 What are pure substances? Give two examples.

Q11 What are pests? How do they attack our crops?

Q12 Differentiate between manures and fertilizers.

Q13 Write a short note on composite fish culture.

Q14 Name two indigenous and two exotic breeds of cow.

Q15 How can you say that an animal in zoo has fallen sick?

Section - B: Biology

Chapters - Biological Diversity, Health & Diseases, Our Environment (Biogeochemical Cycles, Greenhouse Effect) :

1. What is evolution? How is algae different from fungi? Draw diagram of any one member of Protista.

2. How are Pteridophytes different from Bryophytes? Write any four differences between angiosperms and gymnosperms.

3. Write the differences (any four) between the following groups

a) poriferans and coelenterates b) molluscs and arthropods

c) flatworms and roundworms d) aves and mammals

4. Explain the different means by which infectious diseases spread in the environment? List the preventive measures of such diseases.

5. Justify giving reasons why it is difficult to make antiviral medicines than antibacterial medicines.

6. Explain the different processes involved in oxygen and water cycle operating in nature.

7. Represent schematically the carbon cycle and nitrogen cycle operating in the biosphere. How is greenhouse effect caused?

8. Value Based Question :

Government officials often go from one house to another every year and request people to take their infants to the Pulse Polio booths to administer polio drops to them. However in a particular area few infants were not taken for polio drops.

Answer the following questions;

a) Why does the government take active part in administering polio drops to infants?

b) What values are being ignored by people who do not take their infants to the Pulse

Polio booths?

c) Government officials go from house to house for promoting polio drops vaccination. Besides doing their office duty, which values are promoted through their actions?

Section-C: Chemistry

1. What are polyatomic ions? Give examples.

2. a) Calculate the formula unit mass of $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$ and K_2CO_3 .

b) Calculate the molecular mass of $\text{C}_2\text{H}_5\text{OH}$ and H_2SO_4

3. What is the mass of

a) 0.2 mole of oxygen atoms?

b) 10 mol of Na_2SO_3

c) 1.5 mol of Na^+

ions.

d) 4 mol of Aluminum atoms (atomic mass of Al = 27)

4. What are isotopes ? Give one example.

5. The atomic number of Al and Cl are 13 and 17 respectively. What will be the number of electrons in Al^{3+} and Cl^- ?

6. Write the conclusions and shortcomings of Rutherford's model of an atom.

7. VALUE BASED QUESTION:

Rutherford's atomic model was a reasonably good model of structure of atom based on the famous particle scattering experiment. However it was modified by Neil Borh and later on by

others. The resulting improvements in the understanding of atomic structure have contributed to further scientific advancement. There are many examples in scientific field when original contributors happily accept modifications in their ideas.

Answer the following questions based on the above information:

a) Name the scientific values associated with the above anecdotes.

b) In what way such a personal attribute is likely to help you?

