

GURU GOBIND SINGH PUBLIC SCHOOL
SECTOR 5/B, BOKARO STEEL CITY
PRE HALF YEARLY ASSIGNMENT (LEVEL-1) 2018 Class: IX
Subject: Physics

1. Define the following terms
a) Uniform velocity b) Uniform acceleration c) acceleration
2. Derive the formula of 3rd equation of motion i.e. $v^2 = u^2 + 2as$ (By graphical method).
3. Differentiate between the following:
a) Speed and velocity b) G and g c) Mass and Weight
4. What is Inertia? Write two effects of inertia.
5. State Newton's 2nd law of motion and explain it mathematically.
6. Derive the law of conservation of momentum.
7. State Newton's law of gravitation and explain it mathematically.
8. Show that gravity of moon is $1/6^{\text{th}}$ that of the earth.
9. State Archimedes's Principle. Give its application.
10. What do you mean by buoyancy? Write the factors on which does it depends.
11. Why iron nail sink but iron ship float in water?
12. a) State Newton's 1st law of motion.
b) Define one Newton.
13. The radius of the earth is about 6400 km and that of mars is about 3200 km. The mass of the earth is about 10 times the mass of mars. If an object weighs 200 N on earth's surface, then what would be its weight on the surface of mars?
14. Define momentum. The change in momentum of a body in 0.01 second is 10 kg m/s. Find the force acting on the body.
15. When a carpet is beaten with a stick, dust comes out of it. Explain.
16. State three equations of motion which of them describes:
a) Velocity-time relation b) Position –time relation
17. Prove that if the earth attracts two bodies placed at the same distance from the centre of earth with equal force, then their masses will be same.
18. The weight of a boy on the surface of the earth is 294 N. Find his mass.
19. a) Define Free Fall. Write equations of motion of a freely falling body.
b) A boy drops a ball from the top of a tower. Calculate the velocity of the ball after 2 seconds.
20. a) Why is the weight of a man less on a mountain than at sea level?
b) A cubical block of mass 2 kg with each side of 2 cm is lying on the ground. Calculate the pressure exerted by the block on the ground.

Subject :- Chemistry

1. What is fractional distillation? Write its application and draw the diagram.
2. Convert the following :-
(a) 100 °C (b) 270 K
3. What are the characteristics of particles of matter?
4. Explain sublimation with the help of diagram?
5. How can we separate two miscible liquid?
6. Explain latent heat of fusion & latent heat of vaporization.
7. Write postulates of Dalton's atomic theory.
8. Define atomic mass unit.
9. Write the properties of colloid.

10. 30 g of sugar is added in 120 g of water. Calculate the concentration of solution.
11. Calculate molar mass of (a) CaCO_3 (b) H_2SO_4
12. Give two examples of (a) Monoatomic Molecule (b) Diatomic Molecule
13. Differentiate between (a) Compound and Mixture (b) Physical Change and Chemical Change
14. Which gas is called dry ice?
15. Define evaporation. Write the factors affecting evaporation.
16. How many moles are present in 4g of sodium hydroxide?
17. Find the ratio of mass of the combining elements in the following compound:-
(a) CaCO_3 (b) CO_2 (c) H_2O (d) H_2S
18. Find the valency of :
(a) HCl (b) NaOH
19. Explain law of chemical combination. Write the names of scientist who discovered :-
(a) Law of Constant Proportion
(b) Law of conservation of Mass
20. What happens when you open a bottle of perfume?

Subject: BIOLOGY

1. How the chromatin, chromatid and chromosome are related to each other?
2. Name two organelles in the plant cell that contain their own genetic material and ribosome.
3. How do substances like CO_2 and water move in and out of the cell? Discuss.
4. Why are lysosomes known as suicidal bags?
5. Where do the lipids and proteins constituting the cell membrane get synthesized?
6. (i) Where is meristematic tissue found in plants?
(ii) Write the names of cells found in the matrix of connective tissue?
(iii) What is the specific function of the cardiac muscle?
(iv) Name the elements found in phloem.
(v) Give the functions of sclerenchyma.
(vi) State the functions of parenchyma.
7. Differentiate between
(i) Xylem and phloem
(ii) Blood and lymph
8. Identify the type of tissue is the following:
a) skin b) bark of tree c) bone d) lining of kidney tubule e) vascular bundle
9. Water hyacinth floats on water surface. Explain.
10. Name the following:
(i) tissue that forms the inner lining of our mouth
(ii) tissue present in the brain
(iii) tissue that stores fat in our body
(iv) tissue that transports food in plants
(v) connective tissue with a fluid matrix
(vi) tissue that connects muscle to bone in humans
11. What is inter – cropping and mixed cropping?
12. Differentiate between:
(i) Macronutrients and micronutrients
(ii) Manure and fertilizer
(iii) Capture fishing and mariculture
13. What are the desirable characteristics of a bee for honey production?
14. What are the desirable agronomic characteristics for crop improvement?
15. Write 3 advantages of crop rotation and intercropping.
16. What are the benefits of cattle farming?
17. Draw a neat and well labelled diagram of:
(i) Neuron
(ii) Animal cell/ plant cell
(iii) Mitochondria

- (iv) Tracheids
- (v) Xylem parenchyma
- (vi) T.S of a phloem tissue

18. Define :

- (i) Artificial insemination
- (ii) Cross breeding
- (iii) Lactation
- (iv) Animal husbandry

19. Explain with the help of examples the process of osmosis and diffusion.

20. Name the following:

- (i) Tissue that contains chlorophyll and performs photosynthesis.
- (ii) Husk of a coconut is made of which tissue.
- (iii) Tissue that allows easy bending of various plant parts without breaking.
- (iv) Tissue with large air cavities that provide buoyancy to the plant.