**INDIA INTERNATIONAL SCHOOL MANGAF**

**SCIENCE -IX (HOLIDAY HOMEWORK)**

**PHYSICS**

1. Define Uniform Velocity and Uniform Acceleration?
2. Derive the equation for second equation of motion S = ut + ½ at2 graphically?
3. A car moving with a certain velocity comes to halt if the retardation was 5 m/s2, find the initial velocity of the car?
4. Two cars A and B are moving along a straight line. Car A is moving with a speed of 80KMph while car B is moving at a speed of 50KMph in the same direction find the magnitude and direction of the relative velocity of car A with respect to the car B?
5. A ball starts from rest and rolls down 16 m down an incline plane in 4s. What is the acceleration of the ball and what is the velocity of the ball at the bottom of the inclined plane?
6. A body start from rest and moves with uniform acceleration 4m/s2 until it travels 800m. Find the velocity.
7. Differentiate between Scalars and Vectors?
8. A car travels at a speed of 40Km/hr for two hours and then 60Km/hr for three hours. What is the average speed of the car during entire journey?
9. Derive the equation of motion v2-u2 = 2as numerically?
10. Derive the equation of motion v = u + at graphically?
11. Differentiate between Distance and Displacement?
12. The driver of a car travelling along a straight road with a speed of 72Km/hr observes a sign board which gave the speed limit to 54Km/hr. The signboard is 70m ahead when the driver applies the brakes, calculate the acceleration of the car which will cause the car to pass the signboard at the stated speed limit.
13. Calculate the acceleration and distance of the body moving with 5m/s2 which comes to rest after travelling for 6s?
14. Draw the graph for the Uniform retardation-
15. Position – time graph
16. Velocity – time graph
17. Acceleration – time graph
18. A body is dropped from a height of 320m. The acceleration due to gravity is 10m/s2..
19. How long it will take to reach the ground.
20. What is the velocity with which it strikes the ground?

**CHEMISTRY**

1. Define the following terms: i) Rigidity ii) Compressibility and iii) Density

Compare any two states of matter based on above defined properties.

1. a) Enumerate the change that takes place in a liquid during evaporation.

b) How is rate of evaporation affected by change in the following? Justify your answer.

i) Temperature ii) Wind speed iii) Humidity

3. Distinguish between solids, liquids and gases in tabular form under the following characteristics:

a) Interparticle force of attraction b) Diffusion c) Fluidity

4. a) What is matter? Write two properties of solids and liquids

b) Ramesh took two beakers A and B containing hot water and cold water respectively. In each

beaker he dropped a crystal of copper sulphate. He kept the beakers undisturbed. After

sometime what did he observe? Why?

5. A rubber band can change its shape on stretching. Will you classify it as solid or not?

6. What happens to the heat energy which is supplied to the solid once it starts melting?

7. Why are we able to sip hot tea or milk faster from a saucer rather than a cup?

8. Define boiling point of a liquid. At what temperature in the Kelvin scale does water boil? Explain,

what happens when we supply heat energy to water till it changes its state. What is this heat energy called?

9. What is the difference between boiling point and evaporation?

10. How do you differentiate between a gas and a vapour?

11. why different substance have different melting point?

12. Compare a block of wood, water and air on the basis of the following:

i) Compressibility ii) Particle motion iii) Rigidity

13. What is sublimation? With the help of an activity describe the sublimation of a solid substance.

Name two substances from our daily life that sublime on heating.

14. Explain, how are mixtures classified based on their physical properties.

15. Water is a compound and not a mixture. List two reasons to justify your answer.

16. State the difference between a pure substance and a mixture. Give one example of each.

17. Differentiate between a saturated solution and an unsaturated solution. How will you test

whether a given solution is saturated or not?

18. What are the two components of a solution? Write two properties of a solution.

19. Explain dispersed phase and dispersion medium in relation to colloidal solution.

20. Identify the solute and solvent in ‘tincture of iodine’. Why Tyndall effect is not seen in true

solution?

**Biology**

Name of Activity : The Naked Egg and Osmosis.

 Material required: 1 egg, Vinegar, Corn syrup, food colour, glass, old Appearances spoon and camera

Method: FirstStep - Gently put egg in a glass and pour vinegar on top of egg and KEEP it aside for 24 hours and note your observation. After 24 hours drain the vinegar and replace it with fresh vinegar. Keep it aside for further 24 hours. Then note your observation. Once the step is complete pour the vinegar in to a sink and gently hold the egg and give it a rinse with water. Note your observation.

 Second  Step - Place your naked egg in a glass then pour your corn syrup over top of it, bend your old spoon to gently submerge the egg into the syrup and make sure egg shouldn’t not float KEEP it aside for 48 hours. Note your observations after each 24 hours. Once the step is complete pour the corn syrup in a sink and gently hold the egg and give it a rinse with water. Note down your observation

Third step – Fill water in a glass and add food colour into it and stir well. Then gently put the egg into a glass and keep it aside for 24 hours. Note your observations. After 24 hour pour the coloured water in the sink and gently rinse the egg with water. Note down your observation.

Note: - Capture pictures while performing each step.

This activity will be graded for FA1 Task.

Answer the Following questions: -

1. Why the shell of egg is dissolved by the vinegar?
2. What changes Occurs when egg is put in corn syrup?
3. What changes Occurs when the egg is put in colored water?

Submit your result on or before 5th September 2016.

Second Assignment: - Complete your first and second term practical records with labelled diagram.

Third Assignment: -solve last five years question paper of SA1.Question from cell and tissue.