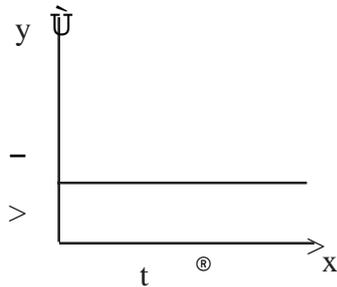


DEVAMATHA CMI PUBLIC SCHOOL
MID TERM EXAMINATION 2017 - 18

Std. IX**SCIENCE (086)****Time : 3 h.****PART A - PHYSICS (25 marks)****Marks : 80****SECTION A**

I Answer the following questions:

1. How does the force of gravitation between two objects change when the distance between them is reduced to half? (1)
2. Velocity time graph of a body is given below. What conclusion can be drawn about the velocity of the body from this graph. (1)



3. A hammer of mass 0.5kgg moving at 50m/s. strikes a nail. The nail stops the hammer in a very short time of 0.01s. What is the force of the nail on the hammer? (2)
4. Distinguish between Speed and Velocity. (2)
5. A motorboat starting from rest on a lake accelerates in a straight line at a constant rate of 3ms^{-2} for 8s. How far does the boat travel during this time? (3)
6. Study the given graph and answer the following questions from it:

- i) Which part of the graph shows accelerated motion?
- ii) Which part of the graph shows retarded motion?
- iii) Calculate the distance travelled by the body in first 4 seconds of journey, graphically. (3)

7. Derive the relation between Force and Acceleration. Define one Unit of Force. (3)
8. Give reason:
- a) While getting down from a bus, it is necessary to run along with the moving bus in the same direction.
- b) A cricket player lowers his hand while catching a fast moving ball. (3)
9. a) If the moon attracts the earth, why does the earth not move towards the moon? (5)
- b) State the Universal Law of Gravitation. Express it mathematically.
- c) A ball is thrown vertically upwards with a velocity of 49m/s. Calculate:
- i) the maximum height to which it rises.
- ii) the total time it takes to return to the surface of the earth.

Section B

- I Find the least count of the spring balance and the measuring cylinder shown:

PART B - CHEMISTRY (25 marks)

Section -A

- I Answer the following questions in two or three sentences each : (2x1=2)
1. Benzene is liquid at 80°C, liquid benzene is in equilibrium with its vapours. It is found that particles of benzene vapour are more energetic than particles of liquid benzene. Explain the observation and define it.
- II Answer the following questions in four or five sentences: (3x3=9)
1. Give reasons for the following statements:
- a) A liquid generally flows easily.
- b) Doctors advise to put strips of wet cloth on the forehead of a person having high fever.
- c) When sugar crystals dissolve in water, the level of water does not rise properly.

2. a) How much water should be mixed with 12mL of alcohol so as to obtain 12% of alcohol solution?
 b) Differentiate between saturated and unsaturated solution.
4. Complete the following table based on:
 a) separation techniques.

Sl. No.	Mixture	Separation technique	Principle
1.	Cream from Milk		
2.	Pigments of flower		
3.	Ammonium chloride from a mixture of ammonium chloride and salt		

b) Type of colloid

Sl. No.	Type of Colloid	Dispersed phase	Dispersion Medium
1	Foam		
2	Gel		
3	Sol		

III Answer the following questions briefly: (5x2=10)

1. Amit was asked by his teacher to separate a liquid mixture of acetone and ethyl alcohol. He set up a distillation apparatus and tried to distill the mixture, to his surprise both liquids got distilled.
- a) What is wrong with the separation technique?
 b) Suggest another technique to separate the components of the mixture.
 c) Write the principle of the separation technique and its applications.
 d) Draw a neat and labelled diagram of the correct separation technique.
2. a) What is the reason for the existence of the three states of matter?
 b) Account for the following:
 i) The temperature of ice remains constant during melting process.
 ii) Evaporation is a surface phenomena.
 c) How can you liquify gas?

Section -B

1. A student was determining the melting point of ice in the laboratory. While doing the experiment his teacher asked him to use a glass stirrer and then determine the temperature. (2)
- a) What is its purpose?
 b) Write one more precaution to be observed during melting point of ice.

2. Neetha heated a mixture of Iron filings and sulphur powder in a hard glass test tube for some time till a grey -black powder was formed. (2)
- a) Identify the grey-black product
- b) What will happen when this product is heated with acid?

PART C - BIOLOGY (30 marks)

- I Answer the following questions in one or two sentences each: (2x1=2)
1. a) Name the plant tissue found in the husk of coconut and identify the chemical which is responsible for its stiffness.
- b) Give one way in which it differs from parenchymatous cell.
- II Answer the following questions in three or four sentences each: (3x3=9)
2. a) How can Crop variety improvement methods come to the rescue of farmers facing repeated failures? Describe three factors for which they could do crop improvement.
- b) Which is the most common method of obtaining improved variety of crop?
3. Give reason:
- a) Water Hyacinth floats on water surface.
- b) What happens when dry apricot are left for sometime in pure water and later transferred to sugar solution?
- c) Cell is called the structural and functional unit of living organisms.
4. a) How do you differentiate amongst capture fishing and mariculture?
- b) List the nutrients supplied by air, water and soil.
- III Answer the following questions briefly: (5x3=15)
5. Draw a well labelled diagram of animal cell and mention one function each of any three cell organelles.
6. a) Identify the figure:

- b) Label the parts marked 1 to 3.
- c) Write the function of parts marked 1,2,3.

7. a) What are the scientific names of Rock bee, Little bee and Indian bee.
b) Name one Italian bee variety. Also justify the use of Italian bee for honey production giving two reasons.
c) State one factor which affects the quality of honey production.

Section B

8. Name the constituent which gives positive test with Iodine solution. Which colour is developed if test is positive. (2)
9. A student recorded the mass of dry raisins as 2.0g. and the mass of raisins after soaking as 3.5g. Calculate the percentage of water absorbed by raisins. Write one precaution for this experiment. (2)

Section - A