ST. LAWRENCE HIGH SCHOOL
A JESUIT CHRISTIAN MINORITY INSTITUTION
First Term Examination – 2018
Class : 7

SUB: Physical Science

DURATION: 2 Hrs30Mins

F.M.90

DATE:21.04.2018

GROUP A (25 MARKS)

A.**FILL IN THE BLANKS:** (1X5=5)

1. The density of water at 4^0C is _____ kg/m^3.

2. _____ is used for measuring the density of milk.

3. When ignited in air, magnesium burns with a dazzling _____ flame.

4. The volume ratio of the Hydrogen and oxygen obtained from water is _____ .

5. Sodium atom has _____ protons.

B.**CHOOSE THE CORRECT OPTION** (1X5=5)

1. The shortest distance between the initial & final positions of an object is called

a.distance   b.velocity   c.acceleration   d.displacement

2. The SI unit of velocity is

a.m/s^2 b.km/s   c.m/s   d.dcm/s

3. The density of mercury is 13600 kg/m^3.Its relative density is

a.136   b.13.6   c.1.36   d.13600

4. Which of the following species cannot exist independently?

a.H_2O b.CO_2 c.N   d.HCl

5. Which of the following equation represent a displacement reaction?

a.$2H_2+O_2 \longrightarrow 2H_2O$ b.$N_2+3H_2 \longrightarrow 2NH_3$

c.$2H_2O \longrightarrow 2H_2+O_2$ d.$Mg+H_2O \longrightarrow MgO +H_2$

C.**STATE WHETHER THE FOLLOWING STATEMENT IS TRUE OR FALSE:** (1X5=5)

1. The mass of iron decreases when rusted.

2. Neutrons reside in the nucleus and so they are positively charged .

3. Equal volume of different substances have the same mass.

4. A mango falling from a tree is an example of rectilinear motion.

5. The time period of a seconds pendulum is 1 s.

(1X5=5)

D. NAME THE FOLLOWING:

1. Name the motion which is the combination of rotatory motion and translatory motion.
2. What is mass per unit volume of a substance called?
3. Name the smallest part of an element that takes part in a chemical reaction.
4. Name the equation by which a chemical change is represented?
5. Name the type of reaction in which a substance is broken down into simpler substances.

(1X5=5)

E. MATCH THE FOLLOWING:

1 .Hydrometer	a.chemical change
2. Motion of a swing	b.electrovalent compound
3. Burning of coal	c.relative density of liquids
4. Carbonate	d.oscillatory motion
5. MgO	e.divalent radical

SECTION - B

2x5=10

I. **Very short answer Type Question :**

1. Which of the following are phyical and which are chemical changes :-

    (a) Melting of ice.

    (b) Freezing of Water

2. What is the valency of the underlined element -

    (a) Pcl₃   (b) Cucl

3. What do we observe when carbondioxide is passed through lime water ?

4. What is random motion ? Give one example.

5. Give two instances (examples) when an object shows both rotatory and translatory motions.

SECTION - C

3x5=15

I. **Short answer type question. : (any five)**

1. State the factors which affect the time period of simple pendulum.

2. It is easier to swim in Sea water why ?

3. Explain why a person weighs 600N on the Earth and 100N on the Moon.

4. The mars of lead is 232g and its volume is 20cm^3. Find the density of lead in kg/m^3.

5. A boy is running at a constant speed of 5 m/s. Find the time taken to cover a distance of 80m.

6. Mention three differences between physical and chemical changes.

7. Give one example for each -

    a. Rotatory motion.

    b. Vibratory motion.

    c. Periodic motion.

SECTION - D

I. **Long answer type questions (any eight)**   5X8=40

1. Differentiate between uniform and non-uniform motion.

2. What is simple Pendulum ? Dram a proper labelled diagram of simple pendulum.

3. What do you mean by anomalous expansion of water ?

4. Describe how the fundamental particles are arranged in an atom.

5. A measuring cylinder cortains water upto the level 24ml. When a stone of mass 72g is lowered into it, the water level rises to 42ml. Find the density of stone.

6. What is a hydrometer ? Dram a labelled diagram of hydrometer.

7. Explain convection current give two examples of natural convection currents.

8. Explain rest and motion are relative terms.

9. Differentate between scalar and vector quantity.

10. A body starting from rest, goes a velocity of 50m/sec to cover a distance of 200m. Find the acceleration of the body.

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Physical science TERM I 2018

MODEL ANSWERS

Group A

A.1 1000 kg/m

2.lactometer

3.white

4. 2:1

5.11

B.

1. (d) displacement

2. (C) m/sec

3. (b) 13.6

4. (c) N

5. (d) Mg + H   MgO + H

C.

1.True

2.False

3.False

4.True

5.False

D .

1.Multiple motion

2.density

3.atom

4.chemical equation

5.decomposition reaction

E.

1 relative density of liquids

2.oscillatory motion

3.chemical changes.

4.divalent radical

5.electrovalent compound

Section-B

I.

1.a) physical change

b) physical change

2.a) 3

b) 1

3.Lime water turns milky when cabondioxide is passed forming calcium carbonate.

4.Motion in which an object changes its direction frequently. Example – motion of a flying mosquito,motion of a football player. Any such example.

5.Two Examples

1.drill used by carpenter

2.pulley used to draw water from well

Any other examples.

Section-C

1.Factors Affecting the time period of simple pendulum are:

a) length of the pendulum-time period is directly proportional to the square root of the length of the pendulum.

b) time period is inversely propotional to the square root of acceleration due to gravity.

2.The density of sea water is greater than the density of fresh water due to dissolved salts.Thus it is easier to swim in sea water.

3.The weight of a body on surface of moon is 1/6 th of its weight on the Earth's surface.This is because the gravitational force of moon is $1/6^{th}$ of gravitational force of the Earth.

4. Mass = 232 g,volume = 20 cubic centimetres. Density =mass/volume =232/20 = 11.5 g/c.c.=11.5 ×1000 = 11500.0g/c.c

5.time = distance / speed = 80 / 5 =16 sec.

6.Physical changes:

It is temporary. It is reversible.no new substances are formed.mass remains the same.

Chemical change:

It is permanent. It is reversible. New substance formed. mass of a substance changes.

7.a . a spinning top.

b. string of sitar when plucked

c. motion of hands of clock.

SECTION D

I.

UNIFORM MOTION – a body moving along a straight line,covers equal distance in equal intervals of time. Example- a car moving on a straight road with no traffic.

NON UNIFORM MOTION - when a body moves along a straight line it covers unequal distances in equal intervals of time . example- a car is moving on a straight road in peak hours covering unequal distances every 30 minutes.

Any other example can also be given.

2.It is an arrangement that consists of a small heavy mass which is suspended by a weightless, in extensible and perfectly flexible string from a rigid support. This heavy mass is called a bob.
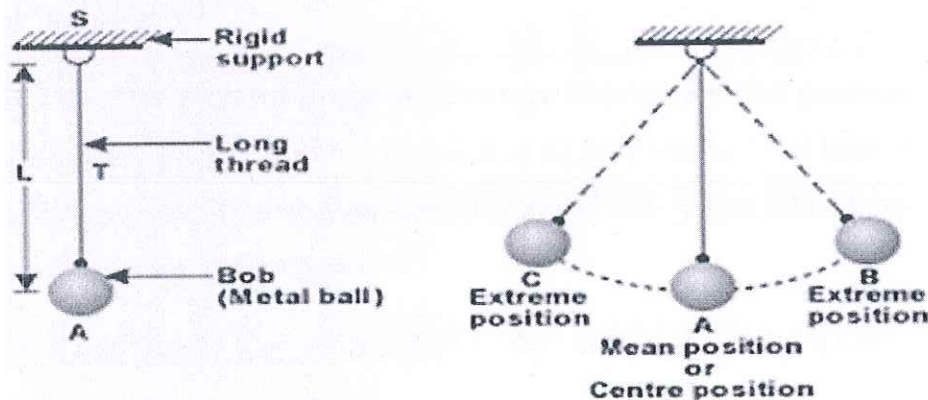
3.Water contracts when heated from 0° C to 4 °C , water expands and hence it's density decreases.This is called anomalous expansion of water.

4.Fundamental particles arrangements-At the centre atom, there is a nucleus, made up of protons and neutrons.The electrons revolves in their orbits round the nucleus.nucleus is positive charged but atom as a whole is neutral.

5. Volume of the stone = 42- 24= 18ml = 18 c.c (1 ml= 1c.c)

Mass of stone = 72 g

Density = mass / volume = 72/ 18 = 4 g/ c.c

6.It is a device used to measure the relative density of liquids.

Low density liquid

High density liquid

Hydrometer

Bulb

Car battery acid
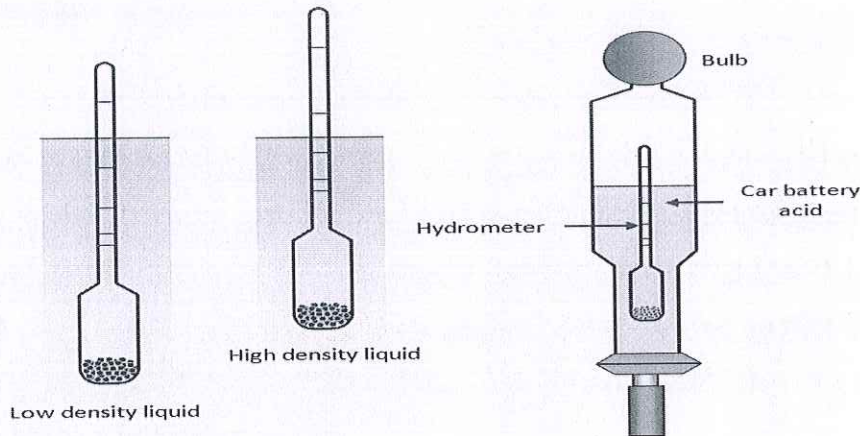
7. Two examples are – blowing of wind. , land breeze and sea breeze.

8.If we r sitting inside a moving train then we will observe that we r in motion with respect to lamppost, houses outside .But we are at rest with respect to the seats and roof of the train.tjus body may be at rest with respect to one object and at the same time in motion with respect to another.Thus rest and motion are considered to be relative terms.

9.Scalar quantity- physical quantity which are described only by their magnitudes . It has no direction.example- length, mass .

Vector quantity- physical quantity which need both magnitude and direction for their complete description. Direction property is there . examples-velocity,acceleration.

10.u= 0 ,v = 50 m/sec, distance= 200 m

$v^2 = u^2 - 2as$

$a = v^2 - u^2/2s$

$= 6.25 \text{ m/s}^2$