Debjani Chakraborty 5.8.19

FOR GOD AND COUNTRY

ST. LAWRENCE HIGH SCHOOL

A JESUIT CHRISTIAN MINORITY INSTITUTION

SECOND TERM EXAMINATION– 2019

Sub: Physical Science **Class: VII** **F. M.-90**

Duration: 2hrs 30mins **Date: 3.08.2019**

GROUP A (25 MARKS)

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

1. An acid when reacts with a base gives salt & water.
2. Oxygen is Slightly heavier than air.
3. Motion of a potter's wheel is an example of circulatory motion.
4. The type of energy stored in diesel is an example of chemical energy.
5. Blue colour +Green colour = Cyan colour.

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

1. A clinical thermometer is having the markings from
   a. 0^oC-100^oC b. -10^oC-110^oC c. 35^oC-42^oC d. 34^oC-100^oC
2. Uniform speed is also known as
   a. same speed b. normal speed c. constant speed d. None of these
3. Graduated beakers,flasks & burettes are apparatus to measure liquids in
   a. home b. shop c. laboratories d. both a & b
4. Which of the following has an atomicity of 3?
   a. nitrogen b. chlorine c. ozone d. sulphur
5. This acid is found in lead storage batteries.
   a. HCl b. H_2SO_4 c. H_3PO_4 d. H_2CO_3

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

1. Acids turn red litmus blue. False
2. Respiration is an exothermic process. True
3. The process of conversion of liquid into gas is called sublimation. False
4. The three primary colours are red,green & magenta. False
5. In photosynthesis electrical energy is converted into chemical energy. False

D.NAME THE FOLLOWING: **(1X5=5)**

1. Name the type of energy stored in the nucleus of atoms. Nuclear energy
2. Name the phenomenon in which a gas is evolved with a hissing sound forming bubbles. Effervescence
3. What are soluble bases known as? Alkali
4. An instrument used by submarines to observe objects above the water surface. Periscope
5. A special type of bottle which keeps hot liquids hot. Thermos Flask

E.MATCH THE FOLLOWING: **(1X5=5)**

1. Convection	a. tomato(3)
2.Radical	b. catalyst(4)
3.Oxalic acid	c. HCO_3^- (2)
4. Manganese dioxide	d. respiratory problem(5)
5.Oxygen	e. heat is transferred vertically upwards(1)

GROUP B (25 MARKS)

F.VERY SHORT ANSWER TYPE QUESTIONS: **(2X5=10)**

1.Write one daily life application of Convection current.

Monsoon-It is a convection current set due to the temperature difference when during the summer hot air rises from the land & cooler air from the ocean filled with water vapour, takes its place causing monsoon rains.

2.Write two factors responsible for the colour of an object.

- The colour that the object reflects or absorbs
- The colour present in the light that is thrown on the object

3.Differentiate between Renewable & non-renewable source of energy.

Renewable energy-The energy which will never get exhausted even with repeated use are called renewable sources of energy. ex: energy from Sun, water, wind, biomass .

Non-renewable energy- They get exhausted with use take millions of years to form again & cannot be renewed. ex: fossil fuels such as coal & petroleum.

4.What do you mean by Rusting?

When a piece of iron is left in moist air for some time a red brown solid is deposited over it.When iron combines with oxygen and water vapour of the air to form a new substance called rust.

5.What is an Acid –base indicator?

An acid –base indicator is a substance that gives different colours in acidic & basic (alkaline) media.

G. SHORT ANSWER TYPE QUESTIONS (ANSWER ANY FIVE) **(3X5=15)**

1.Write three points of difference between Burning & Respiration.

BURNING	RESPIRATION
1.Burning is a fast process. 2.It generally takes place in high temperature. 3.Burning does not need a catalyst.	1.Respiration is a slow process. 2.It takes place at ordinary temperature. 3.Respiration needs certain enzymes as catalysts.

2. What is Neutralisation reaction?What is a pH scale?(1+2)

A reaction between an acid & a base giving rise to a salt & water is called neutralisation reaction.

The measurement which tells us how much acidic or alkaline a solution is known as pH scale which was given by the Danish scientist Sorensen,& the scale runs from 0-14 from acidic to alkaline in between which 7 indicates a neutral solution.

3. What happens when Dilute hydrochloric acid is added to washing soda in a test tube?

When dilute hydrochloric acid is added to washing soda ($Na_2Co_3.10H_2O$),CO_2 evolves with effervescence which turns lime water milky.

4.Write three points of difference between Conduction & Radiation.

CONDUCTION	RADIATION
1.It is a slow process. 2.Medium is necessary to transfer heat. 3.Heat can be transferred in any direction.	1.It is a very fast process. 2.No medium is necessary to transfer heat. 3.Heat is transferred in a straight path.

5. State the Laws of Reflection of light.

- The incident ray, the reflected ray,& the normal at the point of incidence always lie in a same plane.
- The angle of incidence & the angle of reflection are always equal.

  Angle of incidence *Li=Lr* (angle of reflection)

6.Give examples of the following:(1x3=3)

a.Sound energy to electrical energy-Microphones

b.Heat energy into electrical energy-Thermal power stations

c.Light energy into chemical energy-Photosynthesis

7.A boy is running at a constant speed of 10m/s.Find the time taken to cover a distance of 90km.

Speed =10m/s,Distance-90 Km=90x1000m=90000m
Time =Distance/speed time=90000/10=9000s=15hr

GROUP C (40 MARKS)

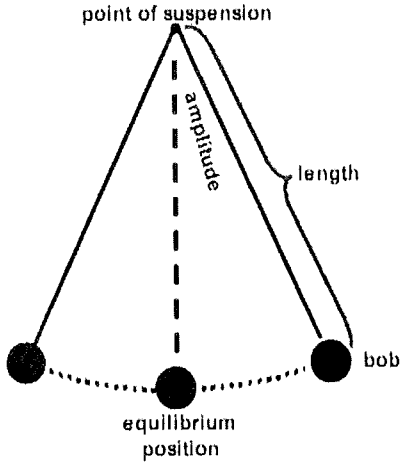
H.LONG ANSWER TYPE QUESTIONS: (ANSWER ANY EIGHT) **(5x8=40)**

1.Why does the spring of a spring balance stretch & make the pointer move? State the working principle of a spring balance? (3+2)

This is due to the fact that the gravitational pull of the earth pulls the object towards its centre, which causes the spring to stretch. The pointer attached to the bottom of the spring moves over the markings & enables us to take the reading of the object's weight.

The spring balance works on the principle that the extension produced in a spring is directly proportional to the gravitational force acting on it.

2.Draw the diagram of a simple pendulum. Define one oscillation & time period of a pendulum.(3+2)



Oscillation-One complete to & fro motion of the pendulum about its mean position is called one oscillation.
Time period –The time taken by the pendulum to complete one oscillation .

3. Define Atomicity. What are Radicals? Give an example.(2+3)

The number of atoms contained in a molecule of an element or a compound is called its atomicity.

Radicals are a kind of entity that can be an atom with a charge on it or a group of atoms behaving as a single atom with a charge on the group,ex:NH_4^+(Ammonium),PO_4^{3-} etc.

4.Compare between Atoms & Molecules with suitable examples.

PROPERTY	ATOMS	MOLECULES
1.Independent existence	Not capable	Capable
2.Charge	Not charged	Not charged
3.Valency	Has a valency	Has no valency
4.Number of constituent elements	Only one	One or more
5.How it takes part in a chemical reaction	Directly	Breaks into atoms, which takes part in chemical reaction

5.How does a thermos flask work?

A thermos flask is designed to reduce gain or loss of heat by conduction, convection & radiation.

- The vacuum between the double walls of the flask prevents heat transfer by conduction or convection.
- Glass, cork or rubber are bad conductors of heat due to which heat neither escapes from within nor escapes from outside.
- Thus heat transfer from all the three modes of transmission is minimised & the temperature of the liquid inside the flask is maintained for a long time.

6. What are the characteristics of the image formed by a plane mirror? Name the two different types of mirror?(3+2)

- The size of the Image is same as that of the object.
- The image formed is laterally inverted, virtual & erect.
- The distance between the image and the mirror is same as that of the distance between the object & the image.

The two types of mirror are:plane & spherical

7.State three important characteristics of acids. Give example of an organic & inorganic acid.(3+1+1)

- They have a sour taste
- They turn blue litmus paper red
- They corrode most metals

Organic acids-Ascorbic acid,citric acid,acetic acid

Inorganic acids-Hydrochloric acid,nitric acid,sulphuric acid.

8.Compare between the processes of Burning & Rusting.

BURNING	RUSTING
1.It is an oxidation process. 2.It is an exothermic process. 3.It is a fast reaction. 4.It takes place at high temperature. 5.It doesn't require anything other than the combustible substance and air 6.The ;residue doesn't contain water.	1.It is an oxidation process. 2.It is an exothermic process. 3. It is a slow reaction. 4. It takes place at ordinary temperatures. 5. it requires moisture apart from iron & oxygen. 6.The residue left contains water molecules.

9.What do you mean by Flammable substance. Give one example. Write an experiment to test Oxygen.(1+1+3)

A flammable substance is the one which catches fire and burns easily.

Ex:alcohol,diesel,petrol

A glowing splinter burns brightly in oxygen.When a glowing splinter is inserted into a conical flask containing manganese dioxide & hydrogen peroxide.The oxygen produced by their reaction will cause the splinter to burn brightly.

10.What is Kaleidoscope ?State four uses of plane mirrors.(1+4)

A Kaleidoscope is used for produce colourful patterns.

Uses of Plane mirrors:

- They are used as a make up mirror or a looking glass.
- They are used in barber shop.
- They are used in laboratories.
- They are used in solar cookers & solar geysers.