# ST. LAWRENCE HIGH SCHOOL

A JESUIT CHRISTIAN MINORITY INSTITUTION

**Second Term Examination - 2018**

**Sub :Physical Science** **Class: 7** **FM:90**

**Duration:2hrs 30 Mins.** **Date: 07.08.2018**

## SECTION - A

(1X5=5)

**I. Choose the correct answer :**

1. Sounds of frequency less than 20 Hz are called.

a) Supersonic b) Ultrasonic

c) SONAR d) Infrasonic

2. Conduction takes place in

a) Solid b) Liquids

c) gases d) all three states

3. The unit of heat is

a) Joule b) neution

c) Volt d) kg

4. In which of the following cases will the mass of the substance change ?

a) The freezing of water

b) The burning of wood

c) The glowing of an electric bulb

d) The melting of ice

5. The pH of pure water is

a) 0.0 b) 1.0 c) 7.0 d) 14

**II. Fill in the blanks (1x10=10)**

1. The handle of a kettle is made of a_____conductor of heat.
2. All Metals are_____of heat.
3. Vibrations which are irregular and non-systematic are called _____
4. _____coloured bodies are good absorbers of heat.
5. The fixed temperature of which a liquid changes to gaseous state is called its _____
6. Sand waves with frequency around 200Hz is called _____
7. An acid salt can be formed by a_____acid.
8. _____is inversely proportional to time period of a vibrating particle.
9. A reaction between an acid and a base giving a salt and water, is called a_____reaction.
10. Soluble bases are called _____

**III.Write T for true and F for false statement of :** (1X10=10)

1. The hydrogen of an acid can be replaced by a negatve radical.
2. Acids react with carbonates to liberate carbon dioxide with effer vescence.
3. The mass of iron decreases when rusted.
4. The electrolyers of water involves a combination reaction .
5. Conduction is a slow process.
6. It is good to wear white clothes during summer.
7. Bats can emit and detect infrasonics.
8. The unit of velocity is second.
9. A mango falling from a tree is an example of rectilinear motion.
10. The S.I unit of distance is metre.

## SECTION - B

**IV.Very short answer questions:** (2X5=10)

1. Define liquefaction and convection.
2. Write the mathematical relationship between Fahrenheit and celsius scales.
3. What do you mean by rediation and radiant energy ?
4. What is frequency ? Give the mathematical relation between frequency and time period.
5. Name two inorganic and two organic acids.

**V.Short answer Question : (any 5)** (3X5=15)

1. Write one use of following salts :-

a) Bleaching Powder.

b) Calcium Carbonate

c) Sodium Carbonate

2. Mention three differences between physical and chemical changes.

3. What would you observe in the following cases ?

a) An iron knife is placed in a solution of copper (II) sulphate.

b) A jet of hydrogen is lit and introduced into a gas jar full of oxygen.

c) An ignited magnesium ribbon is placed in steam.

4. What are ultrasonic sound? State 2 uses.
5. List the factors on which the frequency of a vibrating string depends.
6. State the factors which affect the time period of a simple pendulum.
7. Why does the thick glass tumblers cracks when hot water is poured into it.

## SECTION - C

**VI.Long Answer type questions : ( any 8)** (5X8=40)

1. List 5 differences between heat and temperature.
2. Draw a proper labelled diagram of thermos flask.
3. Why is mercury use as a thermometric liquid ?
4. A man claps and hears the echo from a distant hill after 2 seconds. Is the speed of sound in air is 340 m/s, what is the distance of the hill from the man ?

5. Explain an activity (experiment) to prove that air is a bad conductor of heat.

6. Explain the reason :

1) Blocks of ice covered with sawdust.

2) There is a vaccum between the double walls of a thermo flask.

7. Explain 5 harmful effect of noise pollution.

8. Write five uses of ultrasonic sound.

9. What is echo ? state the conditions for echo to occur?

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

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FOR GOD AND COUNTRY

# ST. LAWRENCE HIGH SCHOOL

## Second Term Examination- 2018

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

**Duration: 2hrs 30 mins** **Date:07.08.2018**

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**SOLUTION**

**SECTION A**

**I.Choose the correct answer:**

1.d) Infrasonic

2.d) All three states

3.a) Joule

4.b) The burning of wood

5.b) 1.0

**II.Fill in the blanks:** (1x10=10)

| | | |
|---|---|---|
| 1. Non-conductor | 2. Good conductors | 3.Noise |
| 4.Dark/black/dull | 5.Boiling point | 6.Sonic sound |
| 7. Dibasic acid | 8. Time period | 9.Neutralisation reaction |
| 10.Alkalis | | |

**III.Write T for true & F for false:** (1x10=10)

| | | | | |
|---|---|---|---|---|
| 1.False | 2.True | 3.True | 4.False | 5.True |
| 6.True | 7.False | 8.False | 9.True | 10.True |

**SECTION B**

IV.

1. Liquefaction- condensation in which a substance changes from the gaseous state into its liquid state on cooling at a constant temperature.
   Convection- the mode of transfer of heat in a liquid or a gas by the actual movement of their molecules from hotter to the colder parts of the liquids or gas is called convection.
2. $c/5 = F - 32 / 9$

3. Radiation- t5he process of transmission of heat ,in which heat energy travels in straight lines from hotter to colder body without heating the intermediate medium.
   The heat energy so radiated is called radiant energy.
4. Frequency – the number of oscillations made by a wave in a unit time is called frequency.S.I. unit is hertz.
   F = 1/time
5. 2 inorganic acids-HCl, $H_2SO_4$ ; 2 Organic acids – lemon ( citric acid + ascorbic acid) ;grapes(tartaric acid)

V.

1 .a) bleaching powder- as disinfectant; as bleaching agent.

b) calcium carbonate- in construction of buildings; in cement industries;in metellargy.
c) sodium carbonate- as washing soda; in glass manufacture.

2. Physical change- temporary;reversible;no new substances formed;no mass change.

Chemical change- permanent;irreversible;new substances formed;mass changes.

3. a) brown red deposit of copper over iron object.formation of iron (II) sulphate ,green in coour.

b) hydrogen continues to burn with longer flame;;water vapour condense in form of dew.

c) magnesium burns with dazzling white flame forms magnesium oxide.

4.Sound of frequency higher than 20,000 Hz.

5.Factors-a) length of string-frequency decreases with more length. B) thickness-thick string- lower pitch

C) tension-tight string- higher frequency.

6.factors- a) length of pendulum

b) acceleration due to gravity.

7. this is because the inside of the glass expand s suddenly but outside does not,as glass does not conduct heat easily.

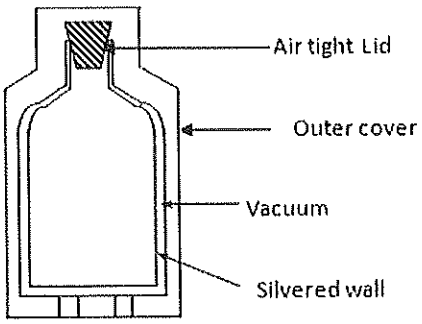
**SECTION- C**

VI.

1. HEAT- form of energy;not directly measurable; joule is s.i. unit ;calorimeter is used to measure heat.;calorimetry principle used.

TEMPERATURE- degree of hotness or coldness ;measurable directly ;Kelvin is S. I unit ;thermometer used ;principle of thermometry is used.

2.




3. Mercury does not stick to walls;it is silvery ; freezinf point is -39 degree celcius ,boiling point 357 degree celcius.;good conductor of heat;uniform expansion and contraction.;liquid in state.

4.V= total distance/time =2d / t

d= v t / 2 =340 x 2 / 2 =340 m

5.We put a piece of wax in the test tube and close its mouth with cork. We heat the tube near he mouth and will observe that cork blows away but wax at the mottom not melted,because the heat exerts high pressure .so air does not conduct heat as wax does not melt.digrram required.

6.It slows down the melting of ice as sawdust is bad conductor of heat.

ii) it prevents heat transfer by conduction or convection.

7.Can cause hearing loss; reduce concentration ;headache; high blood pressure; in infants harms a lot.

8.Bats dectect their prey;for scanning organs ;as SONAR ; dishwashers uses this ;fine faults in metals detected ;removal of grease;used by fishermen.

9.Sound heard by the observer after it is reflected from rigid surface.

Conditions- 1.size of reflector should be large;2.original sound should be of short duration ; 3.distance of riogid surface should be atleast 17 m.

10.$V^2 = u^2 + 2aS$

$a = v^2 / 2S = (50)^2 / 2 \times 200 = 6.2 \text{ m} / s^2$.