



St. Lawrence High School



A JESUIT CHRISTIAN MINORITY INSTITUTION

Subject – Physical Science Model Answer

Full Marks : 90 TIME : 2Hrs30mins. CLASS – VII Date: 10/11/2018

SECTION - A

Choose the correct option :

1x10= 10

1. The image formed by a convex mirror

- a) Real
- b) **Virtual**
- c) Inverted
- d) none of these

Ans (b) Virtual

2. A switch is connected to a

- a) **live wire**
- b) earth wire
- c) neutral wire
- d) none of these

Ans a) live wire

3. Object that do not produce their own light are said to be

- a) bioluminescent
- b) **non-luminous**
- c) luminous
- d) fluorescent

Ans b) non-luminous

4. Which of the following metals is a liquid under ordinary conditions ?

- a) Aluminium
- b) zinc
- c) Iron
- d) **Mercury**

Ans d) Mercury

5. Which of the following kinds of glass is used for making spectacles ?

- a) Soda glass
- b) Potash glass
- c) Borosilicate glass
- d) **Crookes glass**

Ans d) crookes glass

6. At which of the following temperatures is the density of water is maximum ?

- a) 0 °c
- b) **4 °c**
- c) 100° c
- d) 120° c

ans b) 4 C

7. 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

Ans b) the burning of wood

8. Which of the following species cannot exist independently?

- a) H_2O b) CO_2 c) N d) HCL

Ans c) N

9. Sound waves travel fastest in

- a) **air** b) metals
c) vacuum d) liquids

Ans a) air

10. Which of the following is a scalar quantity ?

- a) **distance** b) velocity
c) acceleration d) displacement

Ans a) distance

I. Fill in the blanks :

- Speed is a ..scalar quantity.
- All metals areconductor of heat.
- A shadow is formed in the directionopposite..... to the source of light .
- A combination of two or more cells is called ...battery ..
-soluble bases..... bases are called alkalis .
- Pure water iscolourless ../tasteless ... and odourless .
- Thermal pollution leads to an ..decrease in the dissolved oxygen of water body .
- Relative density is also known asspecific gravity
- ..vector quantities require both magnitude and direction of their complete description.
- The frequency of a seconds pendulum is0.5.. Hz..... hertz.

II. Write true (T) or false (F) against the following statement : 1x5 = 5

- The SI unit of speed is m/s. true
- Excessive noise can cause deafness . True
- The laws of reflection do not hold good for spherical mirrors. False
- Hard water is injurious to health . True
- All non-metals are good conductor of electricity. False

SECTION – B

III. Very short answers question: $2 \times 5 = 10$

1. Name the constituents of the following alloys –

a) Brass

b) Bronze

Ans : a) Brass – copper and zinc;

b) Bronze- copper and tin

2. Mention one use of –

a) Teflon

b) Lexan

a) non-stick kitchenware

b) Bulletproof glass

3. What is electrochemical cells ? What type of energy transformation takes place using such cells ?

Ans : It is a small source of electricity used to operate devices such as clocks, calculator.

It converts chemical into electrical energy.

4. What is bioluminescence ? Name one example of bioluminescence .

Ans: The phenomenon by which living organism emit light due to certain chemical processes is called bioluminescence. E.g

Glow worms.

5 . State two differences between translatory and rotatory motion .

Ans: Translatory- object moves through the same interval of time extension. E.g a bullet fired from a gun.

Rotatory – motion of an object about a fixed point without changing its position. E.g a spinning top.

SECTION – C

IV. Short Answer Question : (any five) $3 \times 5 = 15$

1. The mass of the lead is 232g and its volume is 20cm^3 . Find the density of lead in kgm^{-3} .

Ans: $M = 232\text{ g}$, volume = 20 cubic centimetres. $D = M/V$

= 11.6 g per cubic centimetres = $11.6 \times 1000 = 11600\text{kg}$ per cubic meters.

2 . State 3 differences between real and virtual images .

Real image-when two or more reflected light rays actually intersect .It can be obtained on a screen. Always inverted .

Formed on same side of the mirror.

Virtual images- when two or more rays intersects only on extending them backwards and virtual image formed. It cannot be obtained on the screen. It is always erect.It is formed behind the mirror.

3. How is an MCB better than fuse ?

Ans: After sorting out the problem in the circuit the MCB it can be easily reset whereas in case of fuse it has to be replaced.

4 . What are wind instruments ? Give one example . What is shrillness of sound ?

Ans sound in which instruments is produced due to vibration of air columns when air is blown into them.e.g flute.

It is that characteristic of sound which determines the pitch of sound.

5.State reason –

a) The image become blurred when size of a hole in a pinhole camera is increased. This is because a bigger hole is equivalent to a large number of pinholes .Each of these will produce images which will overlap each other.

6. How does a fuse works ?

A fuse wire has low melting point so that when current rises The heat developed melts the fuse wire and breaks the circuit.

7.Why plants require potassium ?

To fight diseases; in synthesis of carbohydrates; in proper formation of roots.

SECTION – D

V. Long Answer Question-

5 x 8 = 40

1. Explain the type of medicines with one example for each type .

Ans types are – Analgesics – these are painkillers.

E.g aspirin.

Antipyretic drugs – it is used for fever.e.g paracetamol.

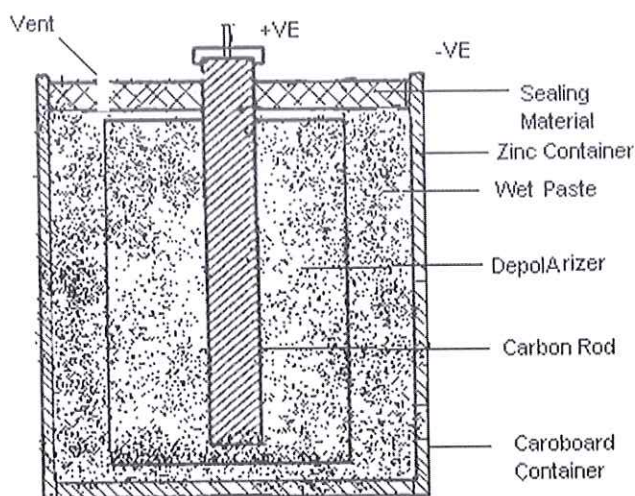
Antimalarial- used to treat malaria.e.g chloroquine.

Antibiotics- chemicals produced by some microorganisms kills disease causing bacteria. E.g penicillin.

2.. Wri.te. 5 pollution steps to curb water.

- 1.sewage should not be discharged directly into water bodies
- 2.oil spills should be avoided far
3. Synthetic organic chemical should not be discharged into water bodies.
- 4.limited use of pesticides.
- 5.treatment of industrial waste.

3.Discuss use construction and working of dry cell with a diagram.



DRY CELL

Construction. All the parts in diagram.

Working when dry cell connected a potential difference is produced in cell causing a current flow.

4. How is rainbow formed ? The focal length of aconcave mirror is 18cm .Find its radii & curvature .

Ans it is caused by dispersion of sunlight by tiny water droplets Present in the atmosphere. The water droplets act like small prisms.

$$\text{Focal length} = \text{radius}/2$$

$$\text{Radius} = 2 \times \text{focal length} = 2 \times 18 = 36\text{cm}$$

5. List one practical application each of conduction , convection and radiation.

A woman's voice is shriller than a male voice .Why ?

Conduction- metals , aluminium and iron.

Convection- sea and land breeze.

Radiation- radiators of cars.

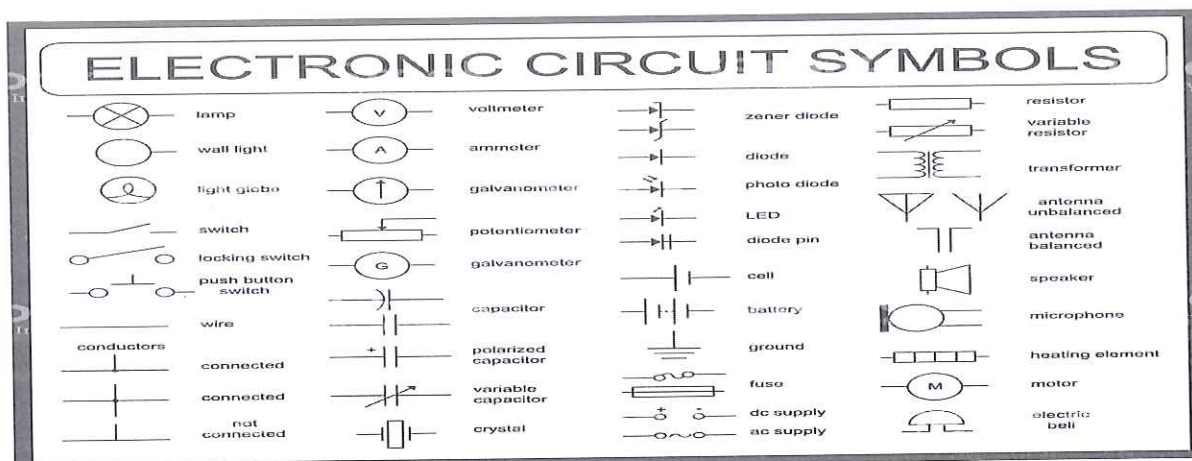
Women have high pitch so voice is shriller than male.

6. An electric heater is rated as 1500 watts .What will be the electricity consumed (in KWp) by it in 3hrs ?

$$\text{Power} = 1500/1000$$

$$\text{Energy} = \text{power} \times \text{time} = 1500 \times 3/1000 = 4.5 \text{KWh}$$

7. State the symbol and one function of –



a) Cell

Use- a source of electric current.

b) Switch

use – helps in making and breaking of the circuit

c) Fuse

Use- helps to limit the flow of current.

d) Electric bulb

Use-an electric appliance that produces light

e) Connecting wire

use- connect two points of the circuit

8. How will we determine the density of irregular solids denser than water and Insoluble in it ?

Ans Take a measuring cylinder and fill it partially with water.

Note initial volume.tying the given solid with string immerse it into measuring cylinder and note the new level.Find the difference between the two levels. Find the mass of the solid using physical balance.Find the density = $M \div \text{new volume} - \text{initial volume}$.

9. Write 5 differences between mass and weight .

Ans Mass- matter contained in a body.it is constant.it can never be zero. It is a scalar.

S I unit is kg.measured by beam balance.

Weight- force with which earth attracts. It is not constant.It can be zero.

It is vector.S.I unit is newton.measured by spring balance.