බස්නාහිර පළාත් අධ්‍යාපන දෙපාර්තමේන්තුව
Department of Education - Western Province

පළමු වාර ඇගයීම - 2018
First Term Evaluation - 20

ශ්‍රේණිය Grade	විෂයය Subject	පත්‍රය Paper	කාලය Time
11	science	I	01 Hour

★Underline the correct answer.

(01) Choose the disaccharide from the following compounds.
1. Sucrose 2. Cellulose 3. Starch 4. Glycogen

(02) ${}^{1}{}^{4}_{6}X$ is a neutral atom. What are the values of neutron, proton and electron of it?
1. 6,6,8 2. 6,14,6 3. 8,6,6 4. 6,6,14

(03) A piece of wood with a mass of m kg is accelerating on a table under F N force. It's accelearation is a ms^{-2}. What is the acceleration of it when the mass is doubled?

1. a/2 ms^{-2} 2. a × 2 ms^{-2} 3. a/4 ms^{-2} 4.a × 4 ms^{-2}

(04) What is the Lactose percentage of human breast milk?
1. 2-3 % 2. 4-5 % 3. 5-6 % 4. 6-7 %

(05) What is the value of atomic mass unit, if the mass of an atom of ${}^{12}_{6}C$ is 1.99×10^{-23} g?
1. 1.99×10^{-23} g / 6
2. 1.99×10^{-23} g / 12
3. 1.99×10^{-23} g $\times \frac{12}{6}$
4. 1.99×10^{-23} g $\times \frac{6}{12}$

(06) What is the SI unit of moment of force?
1. $kgms^{-1}$ 2. Nm 3. N 4.Ns^{-1}

(07) Which of the following is a unicellular fungus?
1. Amoeba 2. Chlamydomonas 3. Yeast 4. Paramecium

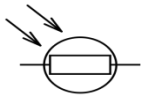
(08) The electronic configuration of neutral atom of Z is 2, 8, 1. What is the <u>incorrect</u> statement about Z?
1. The atomic number is 11.
2. Z belongs to second period.
3. Z belongs to first group.
4. Z always forms +1 ions.

(09) What is the type of electromagnetic wave used in mobile phones in the current world mostly?
1. X rays 2. Gamma rays 3. Micro waves 4. Ultra violet rays

(10) Select another feature of a tree which has trimerous flowers.
1. Parallel venation
2. Taproot system
3. Secondary growth of the stem
4. Branched stems

(11) Which of the following answers correctly shows the components that are collected from the top and the bottom of the fractional distillation tower respectively.
1. LP gas, Lubricating oil.
2. Petrol, Tar
3. LP gas, Tar.
4. Tar, Lubricating oil.

(12) What is the device shown in the figure?



1. Light dependent resistor
2. Junction diode
3. Light Emiting Diode
4. Variable resistor

(13) Which of the following hormone contributes in releasing an ovum after the graafian folicle is fully matured?

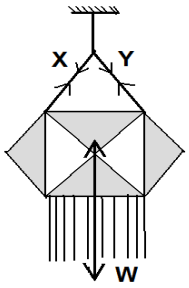
1. Oestrogen hormone
2. Progesterone hormone
3. Luteal hormone
4. Follicle -stimulating Hormone

(14) What are the polar covalent compounds out of the following compounds?

A. HF B. CH_4 C. H_2O D. O_2

1. A and B
2. A and C
3. B and D
4. B and C

(15)



A Vesak lantern with the weight of W is hanging by a string to keep balanced position as shown in the figure. The tensions applied by the strings are X and Y. Here,

A. X, Y and W lie on the same plane.
B. The summation of X and Y is equal to W.
C. The resultant of X and Y acts in the opposite direction of W.

What are the correct statements?

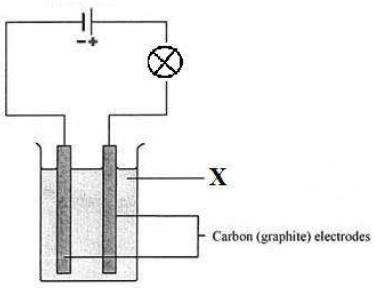
1. A and B
2. A and C
3. B and C
4. A,B and C

(16) What is the correct statement regarding asexual reproduction?

1. Formation of gametes
2. Meiosis
3. Producing organisms identical to mother
4. Involvement of maternal and paternal organisms

(17) A student arranged a set up using two carbon electrodes, connecting wires, a bulb and batteries as shown in the figure. The beaker contains solution "X". Which of the following cannot be X?

1. Sugar solution
2. Salt solution
3. Lime juice
4. Dilute HCl solution



(18) An object that is three meters above from the ground has a potential energy of 270 J. What is the mass of that object? (g = 10 ms^{-2})

1. 9 kg
2. 10 kg
3. 11 kg
4. 12 kg

(19) Which of the following features belong to mammalian?

A. Skin is covered by hairs.
B. Poikilothermic
C. Four chambered heart.
D. Possess a light bony endoskeleton.

1. A and B
2. A and C
3. B and C
4. B and D

(20) What is the composition of the solution which is made by dissolving 3 g of NaCl in 250 cm^3 water in m/ v?

1. 1/12 g dm^{-3}
2. 3 g dm^{-3}
3. 6 g dm^{-3}
4. 4 g dm^{-3}

(21) A fruit in a tree that detaches from the stalk takes 5 s to fall to the ground. What is the height that it fell from? (g= 10 ms^{-2})

1. 2.5 m 2. 0.5 m 3. 50 m 4. Cannot say

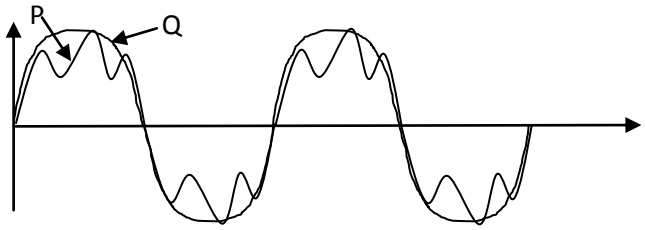
(22) Who is the scientist that showed the genes that present in the same chromosome do not segregate always independently and they result unexpected phenotypic ratios?

1. Mendel 2. Morgon 3. Mendelieve 4. Newton

(23) Out of the following compounds which pair of compounds has equal relative molecular masses? (C= 12, O = 16, H= 1, N= 14, Ca= 40, Cl= 35.5)

1. $CO(NH_2)_2$ and CH_3COOH
2. NaCl and CH_3COOH
3. CaO and $CO(NH_2)_2$
4. NaCl and CaO

(24) P and Q are shapes of two acoustic waves as shown in a cathode ray oscilloscope. Choose the correct statement a



1. P and Q have different pitch, but equal loudness.
2. P and Q have different loudness, but equal pitch.
3. P and Q have different quality of sound, but equal pitch.
4. P and Q have equal loudness, but different quality of sound.

(25)

♀ \ ♂	T	t
T	1	2
t	3	4

What are the genotypes relavent for 1, 2, 3 and 4 given in this Punnett square?

1. Tt, TT, Tt, tt
2. TT, Tt, Tt, tt
3. Tt, Tt, TT, Tt
4. TT. tt. Tt. T

(26) A. $CaO + CO_2 \longrightarrow CaCO_3$

B. $CuSO_4 + Mg \longrightarrow MgSO_4 + Cu$

C. $2\ KClO_3 \longrightarrow 2\ KCl + 3\ O_2$

D. $FeSO_4 + 2\ NaOH \longrightarrow Fe(OH)_2 + Na_2SO_4$

What is the answer that consits of combination, decomposition, single displacement and double displacement reactions in order?

1. A, B, C, D 2. D, C, B, A 3. A, C, B, D 4. D, B, C, A

(27) What are the optical devices related to the instances given below?

- Obtain a very large image of your face.
- Obtain a converged light beam after refraction.
- Able to view a larger area with a diminished image.

What are the optical devices related with the above instances?

1. Convex mirror, convex lens, concave mirror
2. Concave mirror, convex lens, convex mirror
3. Concave mirror, concave lens, convex lens
4. Concave lens, concave mirror, convex lens

(28) Choose the correct order of animal groups which have two chambers, three chambers and four chambers in the heart.

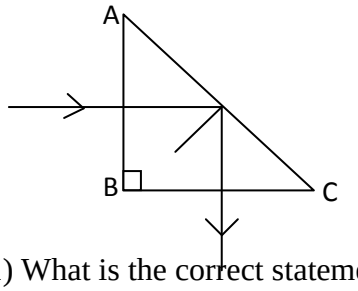
1. Pisces, Amphibian, Aves
2. Aves, Amphibian, Pisces
3. Amphibian, Aves, Pisces
4. Pisces, Aves, Amphibian

(29) $CaCO_3 \longrightarrow CaO + CO_2$

What is the mass of CaO that can be obtained from 50 g of $CaCO_3$ by burning?
(Ca – 40, O – 16, C – 12)

1. 28 g
2. 50 g
3. 56 g
4. 100 g

(30) The diagram shows how a light ray bends by 90^o from a right angle prism. What is the correct statement about the critical angle of the glass and angle of incidence on the AC surface?

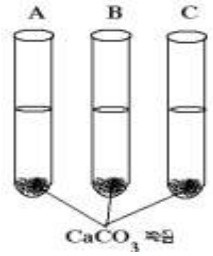


1. Critical angle = angle of incidence
2. Critical angle > angle of incidence
3. Critical angle < angle of incidence
4. Critical angle = angle of incidence = 90^o

(31) What is the correct statement about sex linked inherited disorders?

1. Linked genes are always located on the X chromosome and patients are always males.
2. Linked genes are always located on the X chromosome and carriers are always males.
3. Linked genes are always located on the X chromosome and carriers are always females.
4. Linked genes are always located on the Y chromosome and patients are always females.

(32)



A, B and C tubes contain equal volume of water and equal mass of $CaCO_3$ powder. What is the order in which the reactions end, when the same HCl acid is added as below?

A- 5 drops of HCl
B- 10 drops of HCl
C- 15 drops of HCl

1. A, B and C
2. B, A and C
3. C, B and A
4. B, C and A

(33) An hawk grabbed a prey and flew with an initial velocity of 4 ms^{-1} while obtaining 40 J kinetic energy. If the mass of the prey is 1 kg, what is the weight of the hawk?

1. 4 N
2. 40 N
3. 5 N
4. 50 N

(34) Which of the following is not a characteristic of neuron?

1. Made up of cell body and nerve fibres.
2. Axons carry the nerve impulse away from the cell body.
3. Dendrons carry the nerve impulse towards the cell body.
4. The resource of myelin sheath reduces the speed of nerve

(35) Given below are the chemical changes of metals X, Y and Z.

- Metal X does not react with cold water, but releases gas bubbles by reacting with hot water.
- Metal Y does not react with either cold water or hot water, but reacts with steam.
- Metal Z shows a faster reaction with a hissing sound when it is put into cold water.

What is the descending order of X, Y and Z metals according to their reactivity?

1. X, Y, Z
2. X, Z, Y
3. Z, Y, X
4. Z, X, Y

(36) Consider the following statements.

A. Opening a tap

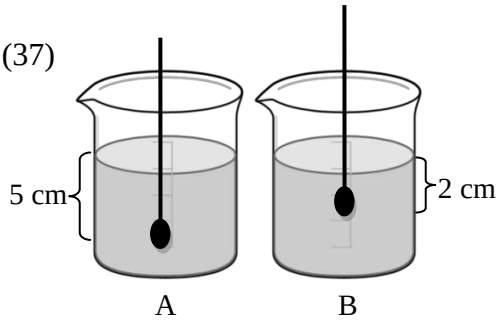
B. Detaching a nut using a spanner

C. Opening a door using a key

In which of the above instances a couple of forces acts?

1. A and B 2. B and C 3. A and C 4. A, B and C

(37)



The figure shows the levels of two hydrometers which are immersed in A and B solutions. Following are some suggestions made to take the hydrometers to an equal level.

P- Add more solute to the solution A.

Q- Add more solvent to the solution B.

R- Add more solvent to the solution A.

S- Add more solute to the solution B.

What are the correct suggestions?

1. P and Q 2. Q and R 3. R and S 4. P and S

(38) Given below are few statements on element Carbon.

A - Amorphous Carbon is used as a rubber filling agent.

B - Graphite is used as a fuel.

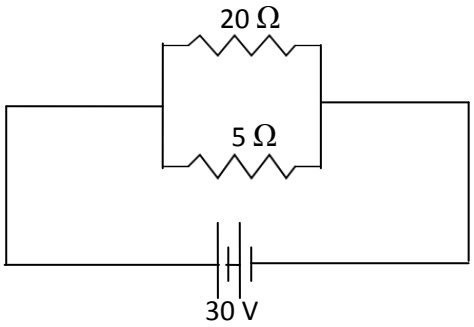
C - Charcoal is used to absorb gases.

D - Dimond is used for electrodes in cells.

The correct statements are,

1. A & B 2. B & C 3. C & D 4. A & C

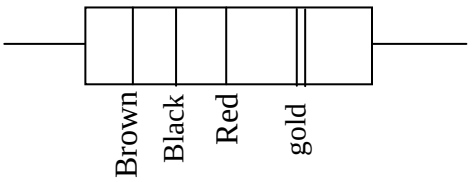
(39)



What is the equivalent resistance and current flow through the circuit?

1. 25 Ω and 7.5 A 2. 30 Ω and 6 A
3. 6 Ω and 7.5 A 4. 4 Ω and 7.5 A

(40)



Brown - 1
Black- 0
Red – 2
Gold – 5%

What is the resistance value, tolerance value and range of the true value?

1. 1000 Ω, 5%, (950 – 1050) Ω
2. 102 Ω, 5%, (102 – 152) Ω
3. 100Ω, 5%, (105 – 110) Ω
4. 102Ω, 5%, (950 – 1050) Ω

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Department of Education - Western Province

පළමු වාර ඇගයීම - 2018
First Term Evaluation - 2018

ශ්‍රේණිය Grade	විෂයය Subject	පත්‍රය Paper	කාලය Time
11	science	II	03 Hours

Name:- .....

Instructions:
(i) *Answer **four** questions in Part **A**, in the space provided.*
(ii) *Answer **three** questions in Part **B**.*

Part A- Structured Essay

(01) (A) A student made a solution of equal amounts of Starch solution and Amylase solution. Then he got a drop from the solution after 2 minutes and placed it on a white porcelain tile and added a drop of Iodine onto the drop of mixture and observed the colour change. He continued the same procedure for about 20 minutes in 2 minute intervals. The following table was made according to the observations.

Time	2	4	6	8	10	12	14	16	18	20
Colour change	brown ↓ blue	brown ↓ blue	brown ↓ blue	brown ↓ blue	brown ↓ blue	brown ↓ blue	brown ↓ blue	brown ↓ brown	brown ↓ brown	brown ↓ brown

1.What are elements present in starch?
.....
2.Why was it only the brown colour of Iodine obtained during the time 16 – 20 min?
.....
3.Which compound was re solution during the time 16 – 20 min?
.....

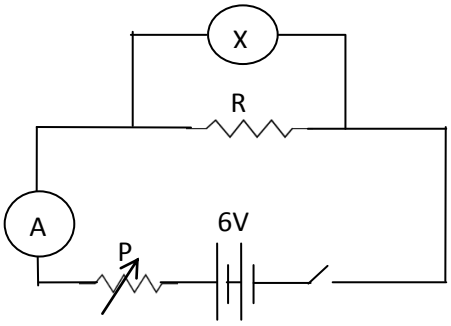
(B) 1. Which kingdomsbelong to the domain Eukarya?
.....
2. Name a seedless non- flowering plant that belongs to the kingdom Plantae.
.....
3. Which invertebrate group contains an exoskeleton made up of chitin
.....
4. Name an organism belonging to the above group.
.....

(C) Given below is a table showing acids of three different compositions prepared by group of students.

solution	A	B	C
water(ml)	7.5	5.0	2.5
Acid(ml)	2.5	5.0	7.5

1. When equal lengths of Magnesium strips were added into the above three acids separately, write the descending order of their reactivity in the above three acids.
.....
2. Explain the above order of reactivity considering the number of collisions that takes place between particles.
.....
.....

(D)



1. Name the device X shown in the above circuit.

.....

2. Which device of the circuit should be set up to increase the reading from 2 A to 3 A? How should it be set up?

.....

.....

3. What is the value of R when the ammeter reading is 2 A?

....

.....

(02) (A)Living matter is built up of Carbohydrates, Proteins, Lipids and Nucleic acids. In addition vitamins, minerals and water also help to build up living matter.

1. What is the basic unit of nucleic acids?

.....

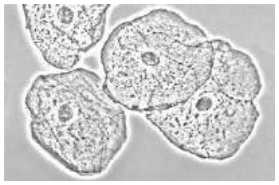
2. Write the functions of nucleic acids.

.....

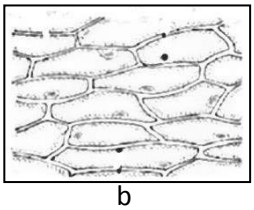
3. What is the mineral that affects mental development and intelligence?

.....

(B) The basic structural and functional unit of life is the cell. Following are two types of cells which can be observed through a light microscope.



a



b

1. Name the letters denoting animal cell and the plant cell.

i. Plant cell .....ii. Animal cell .....

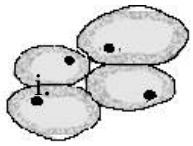
2. Name the membranless cellular organelle that is important in protein synthesis.

.....

3. Write one feature that helps to differentiate a plant cell from an animal cell.

.....

(C) A group of cells with a common origin that has been modified to perform a specific function in the body is known as a tissue.



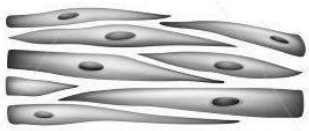
1. Name the following tissue

.....

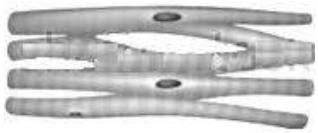
2. What is the tissue that helps in increasing the diameter of the stem of a plant?

.....

3. a and b are two types of animal tissues.



a



b

i. Name an organ in which tissue ‘a’ can be observed.

.....

ii. Write a difference between tissues ‘a’ and ‘b’.

.....

(D) 1. Write a living cell in the xylem tissue.

.....

2. Write 2 types of cells in leaves where photosynthesis takes place.

.....

.....

3. How does the process of photosynthesis contribute to the existence of life?

.....

.....

(03) (A) A student made two mixtures as follows.

X – The mixture made by dissolving 10 g of NaOH in 250 cm^3 of water.

Y - The mixture made by dissolving 10 g of $CaCO_3$ powder in 250 cm^3 of water.

1. From the above mixtures, which one is the heterogeneous mixture?

.....

2. a) How many moles of NaOH is used to make X mixture?

(Na = 23, O = 16, H =1)

.....

.....

.....

b) Find the composition of X mixture in n/v.

.....

.....

3. “Although jak glue is not soluble in water, it dissolves in kerosene oil”. Explain this statement scientifically.

.....

.....

.....

4. You are provided with a sugar solution. What is the solute of it?

.....

(B) The raw material of salt production in Sri Lanka is sea water.

1. Name the method of producing salt.

.....

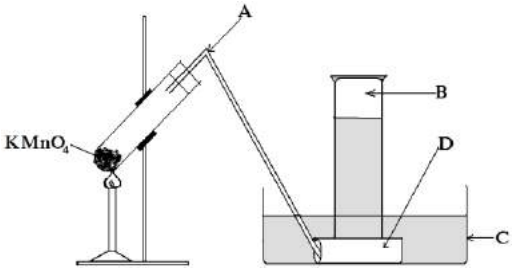
2. What is the strategy used to eliminate the bitter taste of salt?

.....

3. What is the reason for the insoluble property of salt?

.....

(C) Following is a set up used to produce Oxygen gas.



1. Name A,B,C,D

A - .....

B - .....

C - .....

D - .....

2. What is the above method of collecting gas known as?

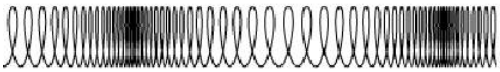
.....

3. What is the observation obtained when the residue that remains after all the Potasium Permanganate has demopsed, is let to react with water.

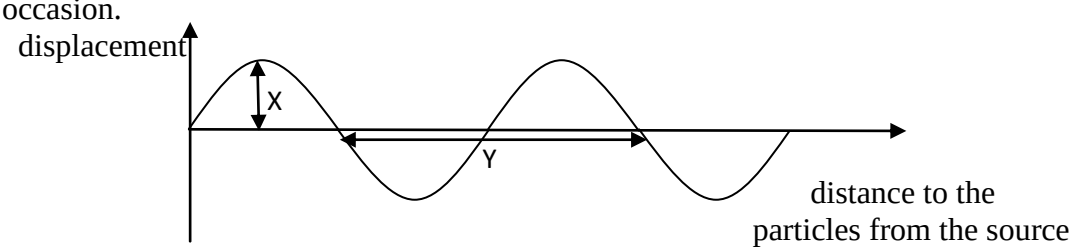
.....

.....

(04) (A) 1. Following is a type of mechanical wave demonstrated by a slinky. Name the type of wave.

 .....

2. Following is a representation of the position of particles of the above wave at one occasion.



i. Name X and Y.

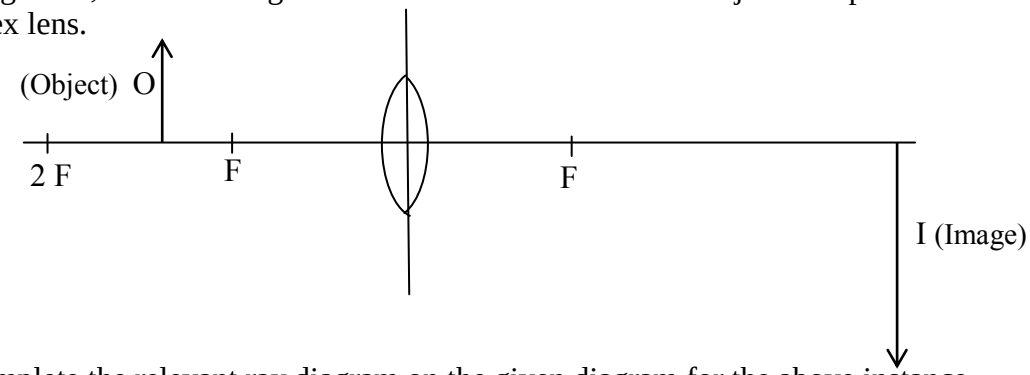
.....

ii. Find the frequency of this wave if it makes 12000 oscillations per minute.

.....

.....

(B) A magnified, inverted image is formed on a screen when an object is kept infront of a convex lens.



1. Complete the relevant ray diagram on the given diagram for the above instance.
2. How is an electromagnetic wave formed?

.....

.....

3. Name the zones of the following electromagnetic spectrum.

Radio waves	Micro waves	X	visible rays	Y	X ray	Gama ray

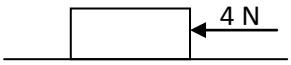
X - …… Y - ……

(C) 1. Name an animal that makes use of echo sound. .....

2. Write an instance where ultra sound is made use by men.

.....

(D) When the unbalanced force acting on a stationary object is gradually increased, the object starts to move when the applied force is 4 N.



1. What is the limiting frictional force? .....

2. Will the force applied when the object is moving be greater than or less than the initial force? .....

3. Write a method to increase and decrease the frictional force.

i. Increase frictional force- .....

ii. Decrease frictional force- .....

Part B- Essay

(05) (A) The life process that gives rise to a new generation from an existing generation is referred to as reproduction.

1. Name one plant doing vegetative propagation by following plant parts.
   i. Roots
   ii. Runners
   iii. Rhizome
2. Write two adaptations shown by plants to avoid self pollination and promote cross – pollination.
3. i. Name 2 glands associated with the male reproductive system.
   ii. Name the follicle stimulating hormone.
   iii. Write a function of epididymis of male reproductive system.
   iv. Where does fertilization of ova takes place in the female reproductive system?

(B) Photosynthesis produces food in green plants.

i. What are the two external factors affect for the photosynthesis process?

ii. Following are several steps followed in an experiment which is done to show the sunlight is essential for photosynthesis. Complete the steps.

a. Pick a plant leaf which is exposed to sunlight.
b. .....
c. Warm in alcohol.
d. .....
e. .....
f. Obtain a dark purple colour.

(C) 1. The dominant gene for Hemophilia is H and recessive gene is h. When a carrier female is married to a healthy male, how does the inheritance of Hemophilia happen? Show in a genetic diagram.

2. Genes of which plant inserted into the paddy to produce golden rice?
3. Write one common inherited characteristic among human.

(06) (A) Iron is extracted from the iron ore mined from the soil.

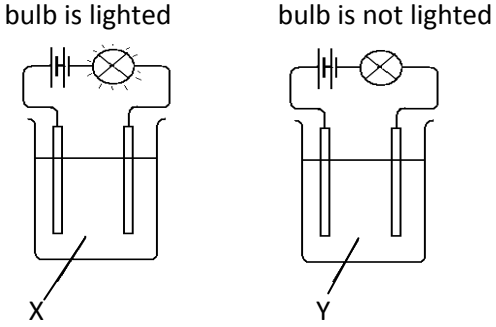
1. What is the instrument used for this process?
2. Following is one of the reactions happens inside it. (Fe = 56, O = 16)

$$Fe_2O_{3\,(s)} + 3\,CO_{(g)} \longrightarrow 2\,Fe_{(l)} + 3\,CO_{2\,(g)}$$

i. Find the molar mass of Hematite.

ii. What is the mass of Fe_2O_3 to be reduced to obtain 112 g of Fe?

(B) Given below A and B set ups are prepared in the laboratory to identify types of bonds.



1. Write the types of bonds in X and Y separately.

2. Write 2 compounds used for X and Y separately.
3. Write 2 physical properties in compound X.

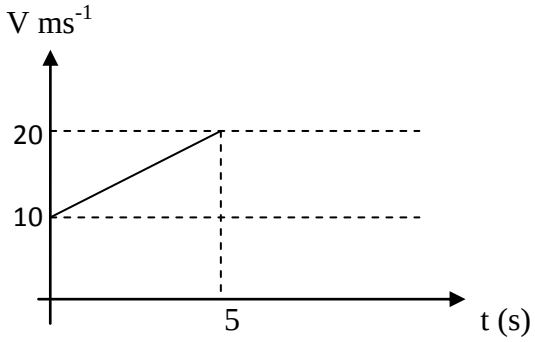
(C) A, B, C, D, E, F, G and H are 8 consecutive elements that belong to second and third periods of the periodic table. B is a noble gas.

1. Which element has the highest electro negativity?
2. Which element has the highest first ionization energy?
3. What is the formula of the compound made by C and A?
4. Which element makes a strong basic oxide?

(D) Salt is extracted by collecting sea water in tanks.

1. What is the salt deposited in the first tank?
2. What is the concentration of mother solution when NaCl deposition takes place?

(07) (A) Following graph shows how an elevator with people moving at a constant velocity of 10 ms^{-1}, increased its velocity up to 20 ms^{-1} within 5 s.

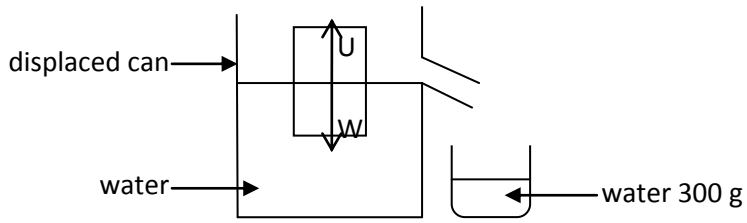


1. Find the acceleration of the elevator.
2. Find the displacement of the elevator during that time.
3. If the mass of the elevator with the people is 500 kg, what is the unbalanced force act on the elevator to move in acceleration? (g = 10 ms^{-2})

(B) A space shuttle without people with the mass of 600 kg moved out from the earth's gravity to land on the moon.

1. What is the weight of it at the earth?
2. What is the reason for decreasing the weight of it at the moon?
3. Write down the Newton's law of motion of the rocket when it take off from the earth.

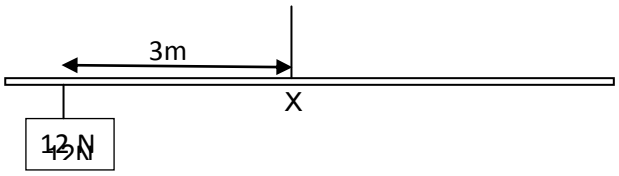
(C)



Above is a set up arranged to demonstrate Archimedes Law. When the block of wood is immersed in the vessel X, 300 g of water got displaced. (g = 10 ms^{-2})

1. Write the Archimedes Law.
2. Find the up thrust acts on the block of wood.
3. Find the weight of the block of wood.

(D)

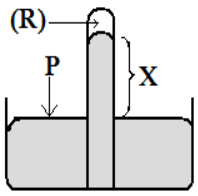


1. Find the anti – clockwise moment of force.
2. Without removing 12 N weight and hanging 6 N weight at the right side it is expected to be balanced. How far the weight should hang from the point X?

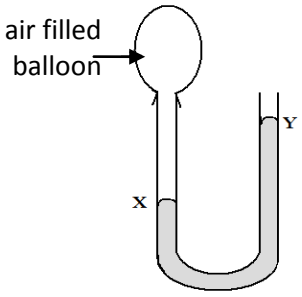
(08)(A) When more than one force is applied, the single force that gives the same result as that of all the contributing forces is known as the resultant force.

1. Find the resultant force in following instances.

(B) Given below is a set up prepared with a liquid of 1500 kgm^{-3} density.
(P= atmospheric pressure= 1 x 10^5 Nm^{-2}, g = 10 ms^{-2})



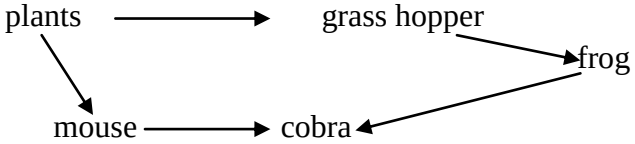
1. Find the height of the liquid column in the above given atmospheric pressure.
2. What has happened to set up when it takes 1 km above the sea level?
3. What is indicated by 'R' in the above set up?
4. Give 2 examples where atmospheric pressure is used.
5.



If this set up is exposed to sunlight about an hour what can you observe? Write 2 observations.

(C) All living units show one or few living characteristics.

1. What do you mean by growth?
2. Given below is a food web.



i. Name two organisms show heterotrophic mode of nutrition.
ii. What is the energy source used by plants in their mode of nutrition?

(D) 1. Write one function of each of the following organelles.
   i. Mitochondria
   ii. Endoplasmic reticulum
2. Name the chemical compound made of plant cell wall.
3. Name a place where meosis takes place in a living organism.
4. What the type of division responsible for new characteristics?

(09) (A) If the time taken by ultrasound waves transmitted by a ship which was in an exploration of debris of a ship to reach the detector again after reflection from the sea bottom is 3 s. (speed of sound in sea water is 1400 ms^{-1})

1. Find the depth of the sea.
2. What is known as the Lithotripsy technology?
3. Write 2 common characteristics of electro-magnetic waves.
4. Write down the type of electro-magnetic waves used in following instances.
   a) To check hidden symbols in currency notes.
   b) To take photographs of internal organs of the human body.
5. Write down the optical device used in following instances.
   a) To diverge a parallel light beam.
   b) To prepare a solar hearth.

(B) You are provided with following metals and answer using them only.
Na, Mg, Cu, Zn, Fe, Pb

1. Which metal is stored in paraffin oil?
2. Name 2 metals which can displace Cu from $CuSO_4$ solution.
3. Write 2 uses of Magnesium metal.
4. Name the metal which is not reacted with dilute acids.
5. Write observations when a small piece of Sodium is put into the water.
6. Write the method of extracting Sodium and Magnesium.