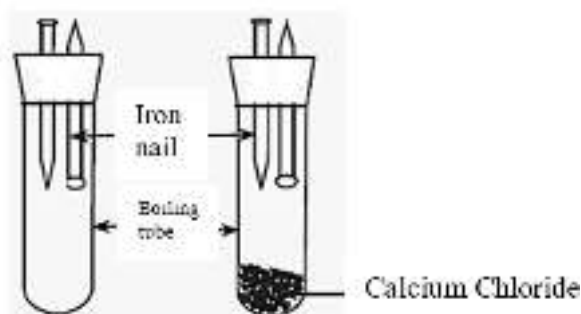
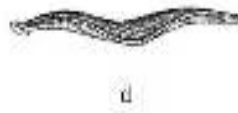
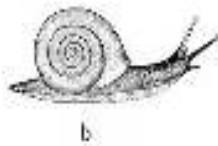


9. An apparatus of a test designed to test for a factor required rusting of metal is given. What factor is tested?



- 1) Water 2) Bases 3) Acids 4) Air
10. Among the following diseases, a disease related to the blood circulation system.
- 1) Gastritis 2) Bronchitis 3) Nephritis 4) Thrombosis
11. The most suitable lamps to use electricity efficiently in obtaining light.
- 1) Light Emitting Diode 3) Compact florescent lamp
2) Florescent lamp 4) Filament lamp
12. What are the Cnidarians of followings?



- 1) a and b 2) a and c 3) b and c 4) a and d
13. The conversion of a liquid to a gas at temperatures below its boiling point is called,
- 1) Vaporization 2) Sublimation 3) Evaporation 4) Freezing
- 250ml of NaOH solution having concentration 2 mol dm^{-3} should be prepared in the laboratory. (Na=23, O=16, H=1) Based on this information, answer questions 14 and 15 below.

14. What is the mass of NaOH required for this?
- 1) 10 g 2) 20 g 3) 40 g 4) 80g
15. What are the products formed, When the above NaOH solution reacts with dilute HCl
- 1) NaCl, HCl 2) NaOH, HCl 3) NaCl, H₂O 4) HCl, H₂O
16. What is Agranulocyte of the following white blood cells?
- 1) Monocyte 2) Eosinophils 3) Basophils 4) Neutrophils

17. Followings are few devices of domestic circuit. Select the correct order of fixing them.



A-Isolator



B-Miniature circuit breaker



C-Trip switch



D-Overload circuit breaker

- 1) D, A, B, C 2) D, C, A, B 3) D, A, C, B 4) D, B, A, C

18. What is the cell type found in both xylem and phloem tissue are,

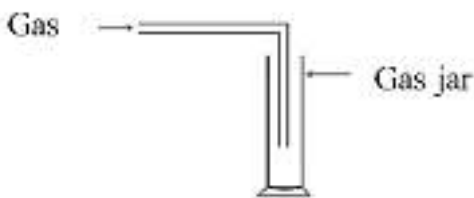
- 1) Xylem vessel element and companion cell 3) Fiber cells and companion cells
 2) Tracheids and sieve tube elements 4) Parenchyma cell and fiber cell

19. Following picture shows 3 parallel forces act on an object.



Select the correct statement on the resultant force and direction of the motion of the object.

- 1) Moves to the direction of 4N force in 8N resultant force
 2) Moves to the direction of 10N force in 2N resultant force
 3) Moves to the direction of 4N force in 2N resultant force
 4) Moves to the direction of 10N force in 10N resultant force
- This picture shows an apparatus prepared to collect X gas. Answer 20th and 21st questions using this apparatus.



20. Followings are few statements on the density if this gas.

- a) Density of this gas is higher than the density of atmospheric air
 b) Density of this gas is lesser than the density of atmospheric air
 c) Density of this gas is equal to the density of atmospheric air

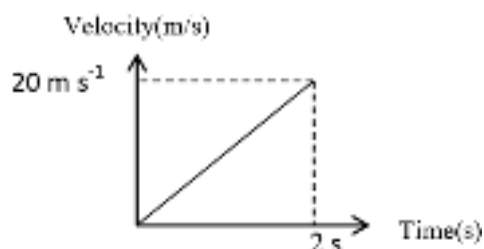
Select the correct statements.

- 1) Only a 2) Only b 3) Only c 4) All a, b and c

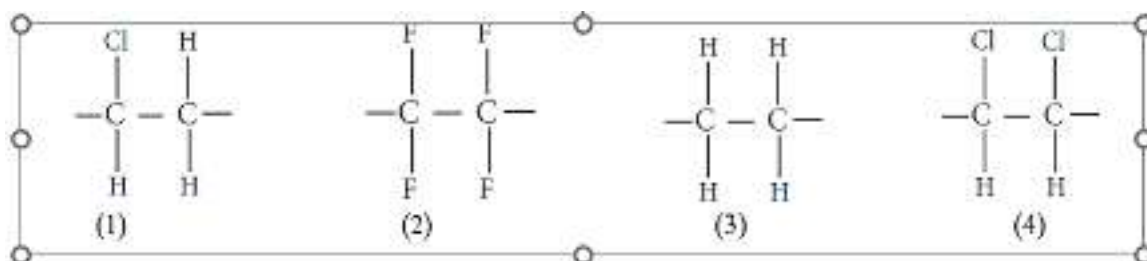
21. What can be X gas,

- 1) CO₂ 2) Ar 3) H₂ 4) He

22. Not a factor affects the magnitude of the force act on the conductor carrying electricity in magnetic field?
- 1) Length of the conductor
 - 2) Power of magnetic field
 - 3) Magnitude of electric current
 - 4) Type of material uses for the conductor
23. What is not considered for the natural classification?
- 1) Morphological features
 - 2) Environmental factors
 - 3) Physiological features
 - 4) Molecular biological features
24. Followings are few scientific names of organisms. Select the correct name according to the rules of binomial nomenclature.
- 1) Homo sapiens
 - 2) *Elephas Maximus*
 - 3) PUNTIUS ASOKA
 - 4) *Cocos nucifera*
- Following velocity-time graph shows the way of moving an object of 2kg kept on a rough surface when applying 30N force. Answer 25,26,27 questions using this.

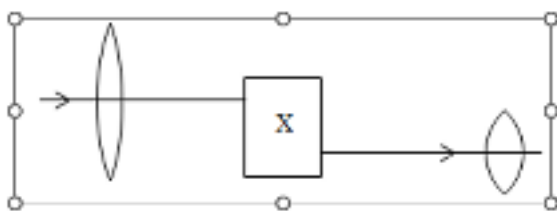


25. What is the magnitude of the acceleration that the object has acquired?
- 1) 5 m s^{-1}
 - 2) 10 m s^{-2}
 - 3) 15 m s^{-2}
 - 4) 20 m s^{-2}
26. How much dynamic frictional force is applied on the object?
- 1) 10N
 - 2) 20 N
 - 3) 30N
 - 4) 40 N
27. What is the displacement of the object?
- 1) 20 m
 - 2) 10 m
 - 3) 5 m
 - 4) 2 m
28. This is not an enzyme in pancreatic juice,
- 1) Trypsin
 - 2) Amylase
 - 3) Lipase
 - 4) Lactase
29. The repeating unit of polythene is?



30. A chemical compound used to obtain a sample of oxygen gas in the school laboratory is,
- 1) MnO_2 2) CaCO_3 3) KMnO_4 4) Mg(OH)_2
31. A pair of devices applying the principles of electromagnetic force and electromagnetic induction shown respectively are,
- 1) Electric motor and dynamo 3) Dynamo and Electric motor
 2) Electric heater and Dynamo 4) Speaker and Immersion heater
32. Heat exchange always occurs in,
- 1) From a place of low temperature to a place of high temperature
 2) Between two places of equal temperature
 3) From a substance with a higher heat capacity to a substance with a lower heat capacity
 4) From a place of higher temperature to a place of lower temperature
33. Below are some statements about dicotyledonous plants. Choose the false statement from them.
- 1) Stem is branched
 2) Has a tap root system
 3) Leaves have a parallel venation
 4) Secondary growth takes place in the stem
34. Below is a ray diagram showing how the path of a light ray is changed by using several optical devices.

The x used for this can have,



- 1) Plane mirror 3) 2 Prisms
 2) Concave mirror 4) Bi concave lens
35. Followings are few functions inside the cells.
- a) Control the activities of cells
 b) Bear cell organelles
 c) Provide shape to the cell

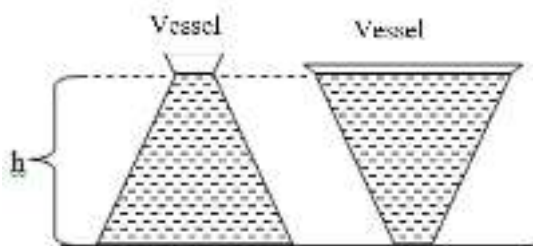
Select the function/s of cytoplasm.

- 1) a and b only 2) a and c only 3) b and c only 4) all a, b and c

36. Followings are masses in grams taken from different compounds. What are the compounds including 6.022×10^{23} molecules. (C-12, H-1, N-14, O-16)

- | | |
|--------------------------------------|---------------------------|
| 1) 40g of NaCl | 3) 56g of CaCO_3 |
| 2) 60g of $\text{CO}(\text{NH}_2)_2$ | 4) 18g of NH_3 |

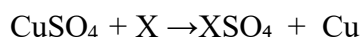
37. Followings are 2 containers having circular bottom filled 5kg and 10kg water. Followings are few statements related to pressure of those vessels.



- a) Equal pressure acts by water on the bottoms of both the vessels
- b) Higher mass of water exerts more pressure on the bottom of vessel
- c) Pressure exerted on the table by the bottom of Q is higher than the bottom of P

- | | |
|-----------------|-------------------|
| 1) a and b only | 3) b and c only |
| 2) a and c only | 4) All a, b and c |

38. Given below is the equation showing the chemical reaction that occurs when a metal X is added to a solution of CuSO_4 , X metal is,



- | | | | |
|-------|-------|-------|-------|
| 1) Zn | 2) Cu | 3) Au | 4) Fe |
|-------|-------|-------|-------|

39. The process most compatible with the green concept is,

- 1) Reforestation in areas affected by forest fires
- 2) Cultivating all the cultivable lands
- 3) Utilization of environmental resources with minimal damage to the environment and formulation of necessary policies
- 4) Natural resources in the environment are not used and they are conserved

40. Below are some of the environmental effects caused by environmental pollution. Which of these is the effect of acid rain?

- 1) Occurrence of genetic mutations
- 2) Loss of transparency of water
- 3) Rising sea level
- 4) Effects on mineral absorption in plants



Grade
 11

Third Term Test - 2023

Subject :- **Science - II**

School Name :

Index Number :

Time : **3 hours**

Additional reading time: - 10 minutes.

Use the extra reading time to read the paper and select questions and organize the questions to prioritize when writing answers.

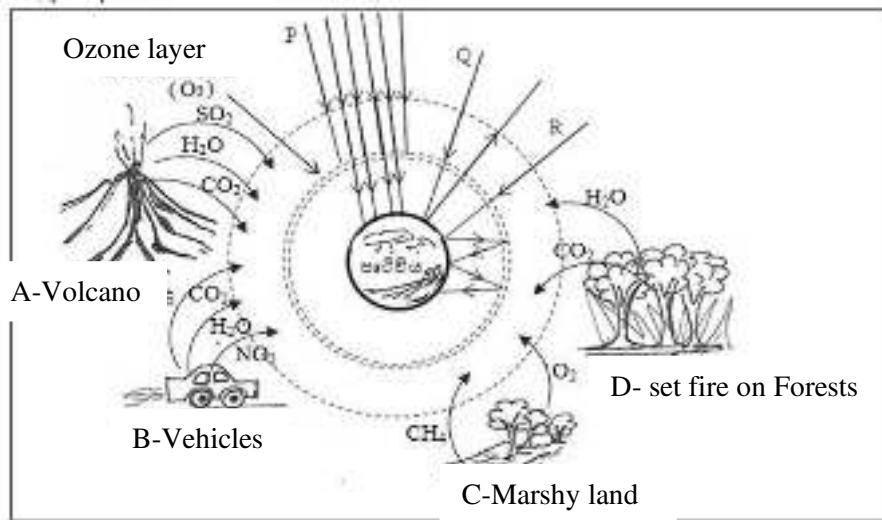
Instructions:

- ❖ Write answers in clear handwriting.
- ❖ Answer the four questions in Section A in the space provided
- ❖ Answer only 3 of the questions below in Section B.

Part A

1)

A. Below is a diagram drawn to show the effects of several natural phenomena and human activities on the atmospheric environment.



i. Answer the given questions with the information given in the diagram above.

Environmental phenomenon	Causative matter/s	Natural condition or human activity that causes it
Global warming	CO ₂ , water vapor	(a)
Prevent entry of Ultraviolet rays to Earth	(b)	(c)
Occurring acid rains	(d)	(e)

ii. Mention two constituents of air in the atmosphere which react in lightning strikes and by spark in vehicle engines

.....
.....

iii. What chemical properties does the above gaseous product show?

.....

iv. Write two harmful effects due to photo chemical smog?

.....
.....

v. Which of the P, Q, R, S processes is most important for maintaining temperature in the atmosphere

.....

B. Natural resources should be wisely used maintaining the balance of the environment and protecting resources to future.

i. What kind of resource utilization is referred to as above mentioned?

.....

ii. Use of organic fertilizers can be introduced as an environmentally friendly agricultural practice

a) Write one plant and one animal material each that can be used to produce organic fertilizers

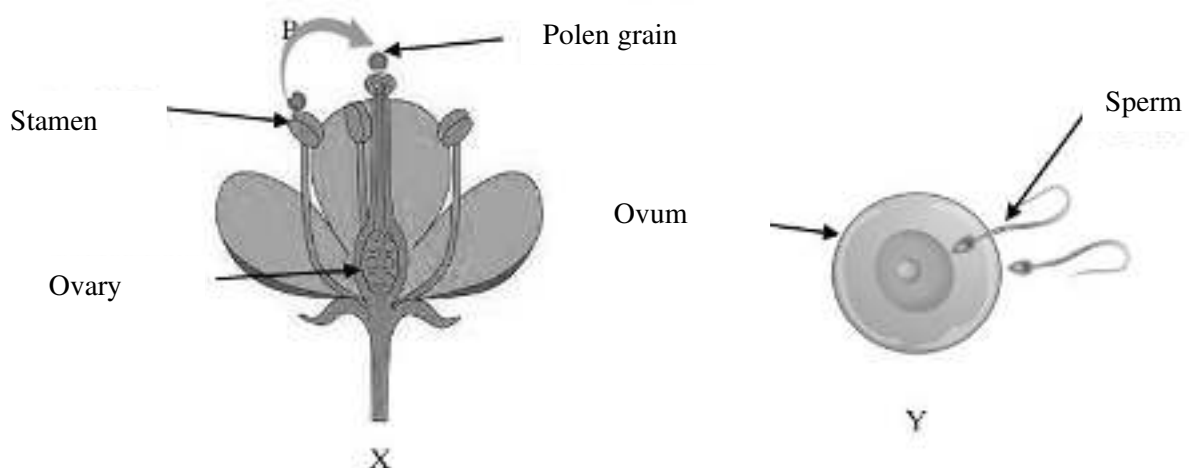
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b) Briefly explain how soil composition is improved by the use of organic fertilizers

.....
.....

2)

A. Following diagram represents an important stage for reproduction process of plants.



i. Name the parts belonging to gynoecium and Androecium of X.

.....

ii. What is the process indicated as p in figure X above?

.....

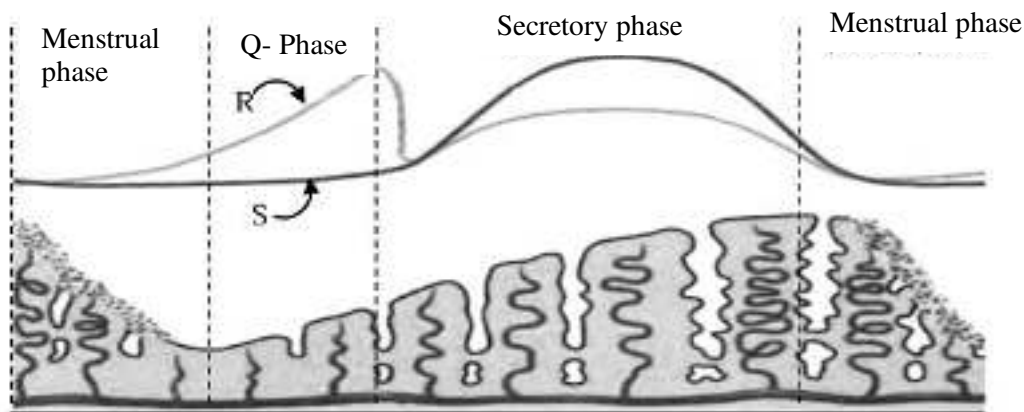
iii. Write two changes that take place in a flower after process p.

.....

iv. In which part of the female reproductive system does the process denoted by Y take place?

.....

B. Following picture shows the way of changing the concentration of few hormones and the changes occur in the wall of uterus with those hormones in menstrual cycle.



i. Name the Q phase in the picture?

.....

ii. What are the two hormones are represented by R and S

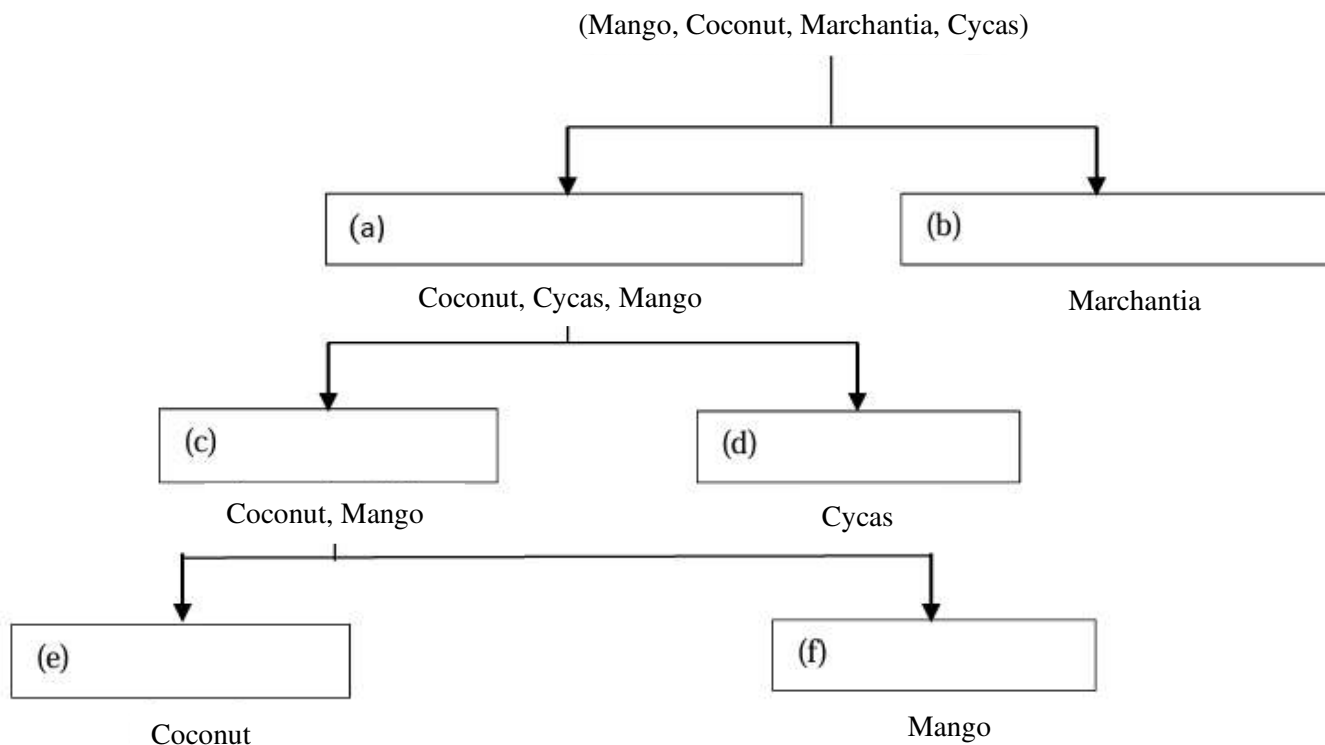
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iii. Which hormones are present at higher and lower concentrations in Q phase and secretory phase?

Phase	At high concentration level	At low concentration level
Q phase		
Secretory phase		

iv. Various methods can be used to classify organisms. Classify the plants coconut, Madu, Marchantia and Mango on a dichotomous key using only the given characteristics.

Characteristics - **Thallus body, Bear Flowers, The number of seed leaves contained in the seed**



3)
 A. Following table shows few atomic numbers of Elements. Given symbols are not standard symbols.

Element	A	B	C	D	E	F
Atomic Number	11	6	8	7	17	12

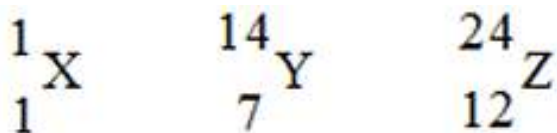
- i. Write the periods and groups in which element B belongs.
 Period
- Group
- ii. Element A reacts rapidly with C and E. What is the bonding nature of the compounds formed there?

- iii. Write the chemical properties of compounds formed in ii above.

- iv. Arrange the elements C,D, and E in order of increasing electronegativity.

- v. Considering the two elements D, E, the first ionization energy of E is lower than D. Briefly explain why

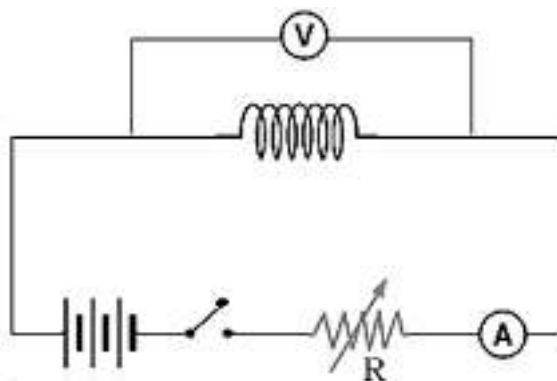
B. Some elements are written in standard form as follows.



- i. What is the number of neutrons in Y?
.....
- ii. Which element has valence 3?
.....
- iii. Which element forms the cation here?
.....
- iv. Write the electron configuration of the cation forming the element in iii above.
.....
- v. Writes the formula of the compound formed between the elements x and y.
.....

4)

A. Following picture shows the circuit prepared to show the relationship between electric current travelling through a conductor and potential difference between 2 ends of conductor.



- i. Name A , V and R devices.
 A V R.....
- ii. In which way should the circuit A , V always be connected?
 A
 V
- iii. What is the function performed by the device R applied to the circuit?

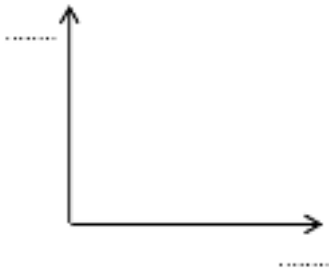
iv. State the ohms law.

.....
.....

v. Close the switch for a very short time to obtain readings of A and V and then again open switch during the test. What is expected of the opening switch according to the law mentioned in (iv)?

.....
.....

vi. Draw a sketch of the graph drawn between the readings obtained by A and V on the following axes. Mark axis.



v. The resistance of R in the above circuit is set as 100Ω and when the switch is opened, the reading of V is 6V and reading of A is 2A. Calculate the resistance of the wire used in the circuit at that time.

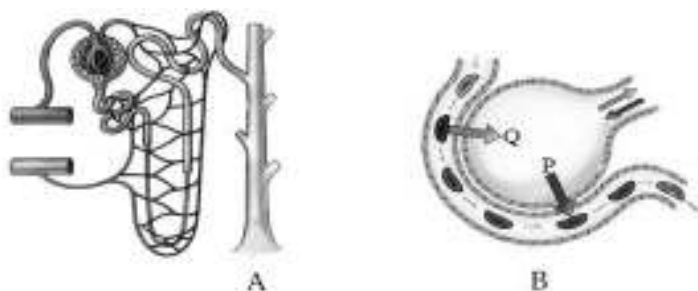
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Part B

Answer only 03 Questions.

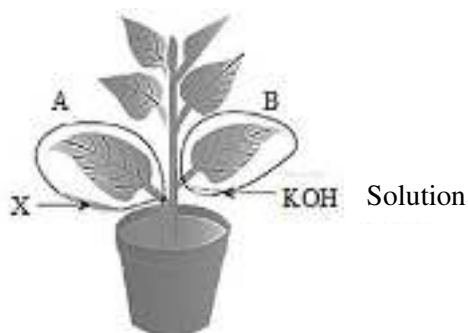
5)

A. Following pictures are active units of kidneys and lungs.



- Name the above A and B structures?
- Write one excretory material of each A and B.
- What is the main method of entering materials into the blood capillaries in the above structures?
- What are P and Q materials exchange with blood capillaries by the above-mentioned method?
- Write a structural difference in B to efficient gas exchange?

B. This is a picture of simple experiment done to test a factor required for photosynthesis.



- What factor required for photosynthesis is shown by this experiment?
- Write a material that can be used for x?
- State a material factor and a non-material factor necessary for photosynthesis?
- For the starch test, the leaves inside this A and B polythene bags were taken and marked as A, B and the marks were erased when soaked in water. Mention a possible observation that can be used to identify the leaves in A and B by subjecting them to the starch test.
- Explain the reason for that observation
- Which gas collects more in polythene bag A than B if the above arrangement is left in the dark for few hours?
- Suggest a chemical substance that can be used to identify that gas?
- Mention other unstable product produced in animals during anaerobic respiration except energy?
- Represent aerobic respiration by a balanced chemical equation.

6)

A. Some of the chemicals used in everyday life are given below.

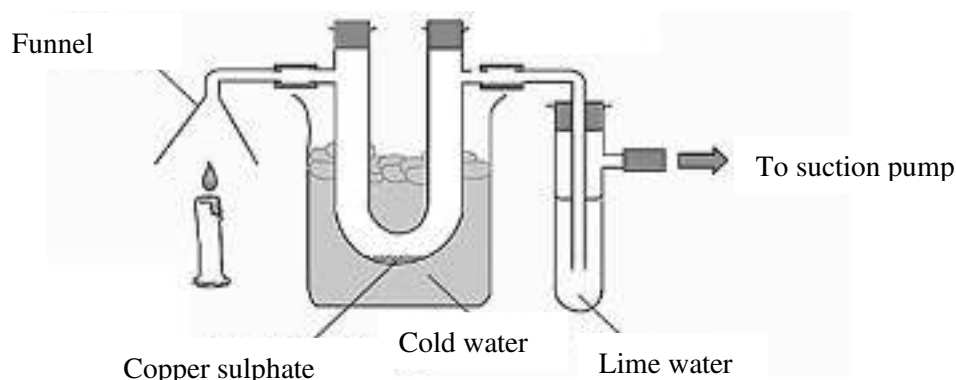
Vinegar, sodium hydroxide, hydrochloric acid, common salt, magnesium hydroxide, copper sulphate

- i. Classify the above substances as acids bases and salts.
- ii. Which of these chemicals is the strongest base?
- iii. pH papers can be used to separate acid, base and neutral substances. Briefly explain how they can be identified by pH papers.
- iv. Write ionic equation to show the way of ionizing sodium hydroxide in aqueous solution?
- v. Two mixtures were prepared by well dissolving 10g of magnesium hydroxide and 10g of copper sulphate in 250ml of water.
 - a) What is homogeneous mixture?
 - b) What is heterogeneous mixture?
 - c) Write 2 features of heterogeneous mixtures?

B. Followings are few substances separated from mixtures.

Cinnamon oil, Distilled water, Petrol

- i. Write a separating technique uses to separate each of the above substances from the mixtures?
- The figure below shows a simple setup used to test the constituents contained in the products of combustion of a particular fuel.



- ii. When the suction pump is operated, gaseous products of fuel combustion enter through the funnel, travel through anhydrous copper sulphate, and make bubbles through colourless lime water.
 - a) Write an observation each in anhydrous copper sulphate and lime water.
 - b) From the observations in (a) above, what elements can be deduced as including in the fuel?
 - c) Write the balanced chemical equation to represent the reaction of one of the elements identified above with oxygen.

7)

A. A screen had to be placed in front of mirror to obtain a clear image of a distant object in front of a concave mirror 7.5 cm from the mirror.

- i. What is the focal length and radius of curvature of this mirror?
- ii. State any two characteristics of the image falling on the screen as above.
- iii. A lighted candle was placed on the principal axis 15 cm in front of this mirror. Then draw ray diagrams to show how an image is formed.
- iv. State two characteristics of the image from the ray diagram drawn in (iii).
- v. Draw a ray diagram to show the image of an object placed on its principal axis in front of a convex mirror of focal length equal to the focal length of the above concave mirror.

B. It has marked as 25000 W, 250 V, 50 Hz in an immersion heater.

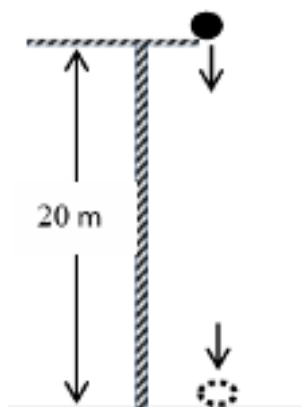
- i. How much energy is used by this device in one second?
- ii. What is the current flowing through the coil when this immersion heater is operating at maximum efficiency?
- iii. Immersion heater took 5 seconds to increase the temperature of 250 g of water by 10°C. (Specific heat capacity of water is $4200 \text{ J kg}^{-1} \text{ K}^{-1}$)
 - a) Calculate the total amount of heat released by immersion heater
 - b) What is the amount of heat taken by water to increase temperature by 10 °C
 - c) What is the amount of heat wastage the environment when heating water?

8)

A. Life is made by the number of chemical compounds. These major chemical compounds are called basic biomolecules. Nucleic acid also a major bio molecule.

- i. Write another bio molecule except nucleic acid?
- ii. Name three main elements present in the biomolecules you mentioned above.
- iii. What is the bio molecule identified by Sudan iii reagent?
- iv. Red green colorblindness, Albinisms, Thalassemia, Hemophilia are few inherited diseases.
 - a) Which of the above disease is caused by gene mutation?
 - b) What is the type of nucleic acid that contributes to the storage and transmission of genetic characteristics in organisms
 - c) Thalassemia occurs recessive(h) gene of H gene. Show the phenotypes of children born to a carrier father for thalassemia and a healthy mother in a suitable chart.
 - d) Mention an action that can be taken to prevent transmission of thalassemia.

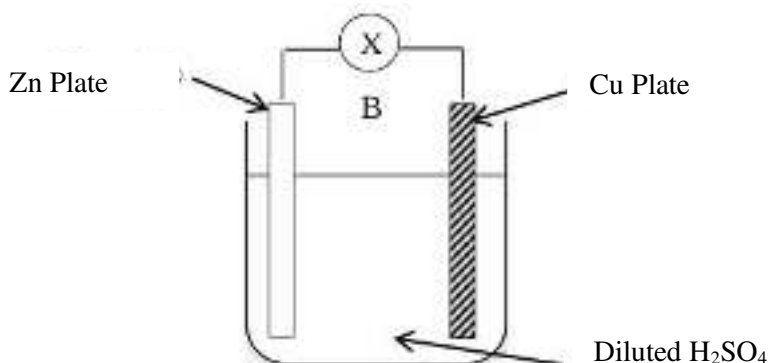
B. The figure shows freely falling a mass from the upper floor to the ground.



- i. What is the form of energy stored in the object at upper floor?
- ii. What is the form of energy that the above (i) energy form converts when it is falling?
- iii. Calculate the velocity of this object just before falling to the ground?
- iv. Draw a velocity time graph for the motion of the above mass at the time of releasing from the upper floor till it reaches ground?
- v. Write a day today application of the above energy transformation of (ii)?

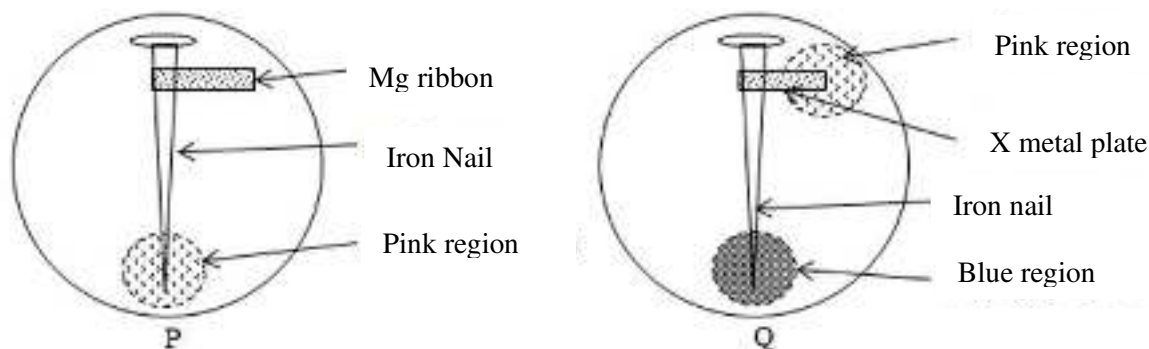
9)

A. This picture shows an apparatus prepared to light up a bulb.



- i. What is the name of this apparatus?
- ii. Name the electrodes of the above act and anode and cathode?
- iii. Write the direction that the electrons travel through the external circuit using the names of electrode?
- iv. One of the above electrodes is rapidly depleted when using this apparatus.
 - a) Write the half reaction closer to that electrode?
 - b) Is that an Oxidation or reduction?

B. A diagram of an experiment carried out to examine the effect of other metals on iron rusting is given below.



- Which ion is responsible for the formation of a pink colored zone in above?
- Which iron is responsible for making a blue color near the nail of the Q?
- Which metal named as X should be attached to the iron nail to obtain the observations as in Q?
- In which of the above apparatus that the “cathodic protection” is used to prevent corrosion of iron?

B. Below figure shows a diagram drawn to show the magnetic field around the conductor AB when a current flows through them. Figure 2 shows how the conducting rod is placed in a magnetic field. The magnetic field is arranged so that the magnetic field lines move into the plane.

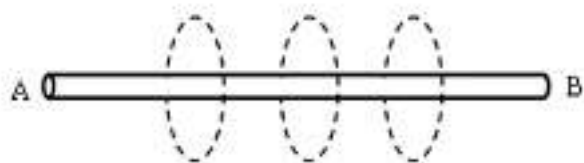


Figure 1

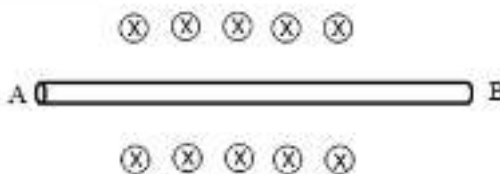


Figure 2

- Copy the direction of the magnetic field around that conductor and mark it by drawing an arrow head on the circles drawn around the conductor, when the current flows from A to B through the conductor AB,
- Copy the figure 2 and mark the force on the conductor when the current is flowing through it from A to B.
- Which law can be used to find the direction of the force on the conductor mentioned in (ii) above?
- State three factors influencing the magnitude of the force acting on a current-carrying conductor placed in a magnetic field.
- Mention an instance where the above principle can be used in everyday life.