Provincial Department of Education - North Western Province

Third Term Test 2020

Science I

Grade 11 **Time - one hour**

Name / Index number :

Instructions:-

- **Answer all questions.**
- **In each of the questions 1 to 40, pick one of the alternatives (1), (2), (3), (4) which you consider as correct or most appropriate.**
- **Marks a cross (x) on the number corresponding to your choice in the answer sheet provided.**

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01) Which of the following plants produces spores?
1 Cycus 2 Pinus 3 Blue water lily 4 Nepholepis

02) What is a set of vector?
1 Distance 2 Time 3 Weight 4 Pressure

03) What is the element that has the same number of electrons as Mg^{2+}
1 Ca 2 Ne 3 Na 4 He

04) As soon as, a perfume bottle is opened its fraguance spredds through out the air. This phenomena can be called as
1 Diffusion 2 Evaporation 3 Osmosis 4 Transportation

05) The colour change that occurs when a small piece of na is added to a bowl of cold water with phenolphthalein.
1 Green 2 Colourless 3 Yellow 4 Pink

06) This is an instance to use acetic acid.
1 To remove rust on steel products
2 In rubber industry
3 To produce paints and plastics
4 To purify of molasses in sugar industry

07) An amphoteric oxide is,
1 Na_2O 2 Al_2O_3 3 Cl_2O_7 4 K_2O_3

08) Which of the following is considered as to be the most evolutionary group of vertebrates?
1 Echinodermata 2 Arthropoda 3 Mollusca 4 Coelenterata / Cnidaria

09) When grafting orange plants, wood apple is used as stock what is the reason for this?
1 Enlarging the fruits of orange with mixing characteristics of wood apple.
2 Woodapple plant is resistant to the enviromental conditions and various diseases and has a good root system.
3 A large number of orange blossoms become fruiting.
4 Origin of clusters of oranges by genes in the woodapple plant.

10) What is the choice given by the observable tissues in pears fruit and stem tuber of potatos.

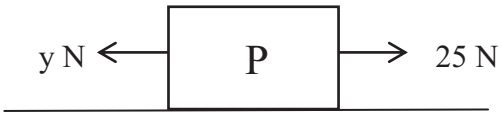
1 Paranchyma and sclerenchyma

2 Paranchyma and collenchyma

3 Sclerenchyma and collenchyma

4 Sclerenchyma and paranchyma

11) Considered the object 'P' placed on a horizontal table as shown in the figure. Two forces of 25N and 'Y' N are acted on the object as the figure find the 'Y' if the resultant force is 5N towards the direction of 25 N.

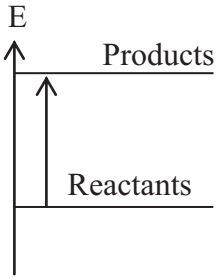


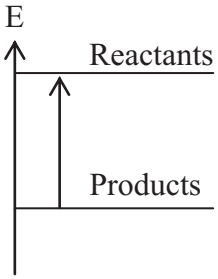
1 30 N 2 20 N 3 25 N 4 15 N

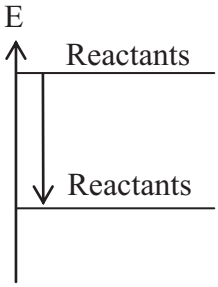
12) Of the following oxides oxide is the one that does not participate in iron extraction.

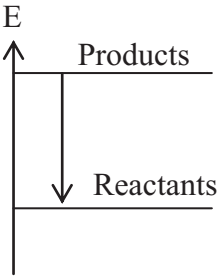
1 CaO 2 CO_2 3 MgO 4 SiO_2

13) The amount of heat released when NaOH(s) and HCl(aq) react with each other is 58000 J what is the energy diagram related to this reaction?

1 

2 

3 

4 

❖ Answer the questions 14 and 15 by considering the following food chain.

Plants ⟶ Grasshoppers ⟶ Rat ⟶ Hawk

14) If the amount of energy in the grass hoppers body in the above food chain is 100 J. then the energy transfered into the hawk's body is,

1 1000 J 2 100 J 3 10 J 4 1 J

15) Which of the following may contain the highest toxic chemical concentration?

1 Hawk 2 Plants 3 Rat 4 Grasshopper

16) Dicotyledonous plants

1 Possess trimerous flowers 2 Possess fibrous root system

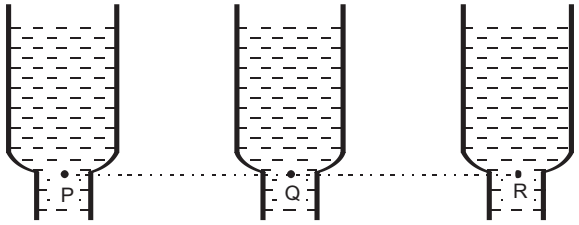
3 Possess reticulate venation 4 Possess parallel venation

17) Vertual, upright and small images can be obtained in every instances by,

1 Convex mirrors and concave lenses 2 Convex mirrors and plane mirrors

3 Convex mirrors and convex lenses 4 Concave lenses and convex lenses

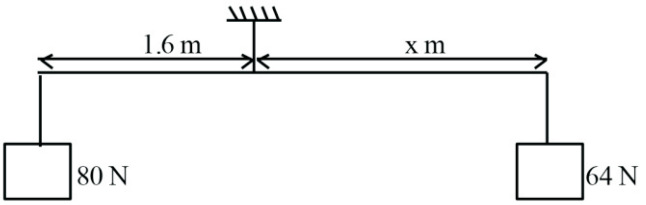
18) Below is how three equal jars were filled with water mercury and coconut oil. What is the correct choice regarding the pressure in these P, Q, R location?



water mercury oil

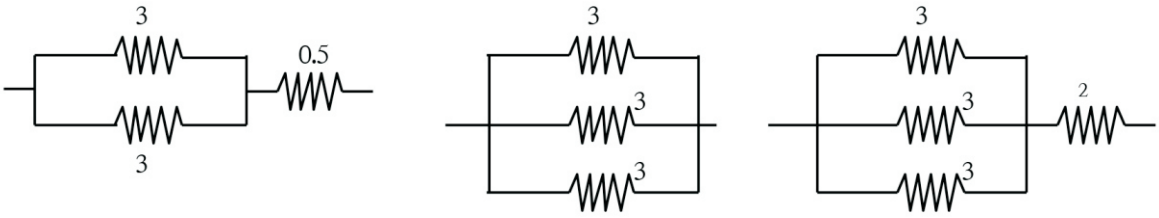
1 P > Q > R 2 Q > R > P 3 Q > P > R 4 Q > P = R

19) The figure bellow shows how a uniform rod is balanced by hanging from a string what is the x?



1 1.6 m 2 1 m 3 2.5 m 4 2m

20) Select the choice that gives the equivalent resistance 1 , 2 and 3 respectively



a b c

1 a, b, c 2 b, a, c 3 c, b, a 4 a, c, b

21) A stone with the mass of 50 kg rests on a 100m high mountain. The gravitational potential energy stored in that rock.

1 5000 J 2 50000 J 3 2500 J 4 125000 J

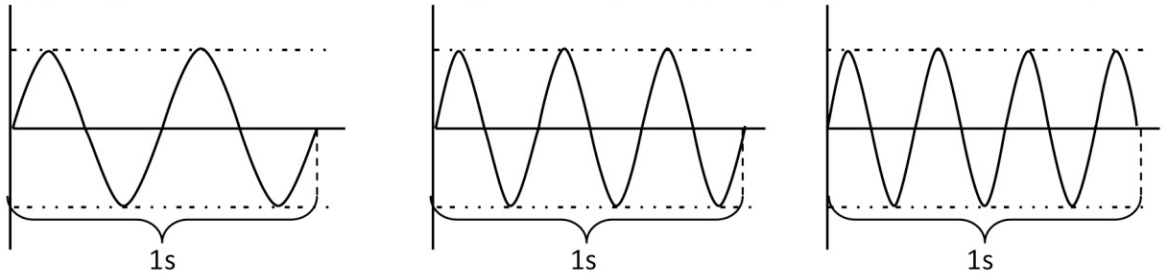
22) Can be thought of as a function performed by the "Medulla oblangata" in the human nervous system.

1 Controling the rate of heart beat. 2 Controling the body balance
3 Contracting the voluntory muscles. 4 Coordinating the body movements.

23) Catalysts are used to increase speed of a reaction what is the catalyst used in heber process of manufacturing Ammonia?

1 Platinum 2 Porous Iron 3 Nickel 4 Vanadium Pentoxide

24) Below are some graphs corresponding to the waves recorded on the screen of a cathode ray Oscillascope when a tuning fork vibrates near the microphone of it.



What are the simillar and different Characteristics of sound corresponding above graphs?

1 Loudness and qualit of sound
2 Quality of sound and loudness
3 Pitch and loudness
4 Loudness and pitch

25) Find the mass of glucose which is needed to prepare 250 cm^3 of a 0.5 cm^3 $moldm^{-3}$ glucose solution. (Relative molecullar mass of glucose is 180)

1 45 g
2 22.5g
3 67.5 g
4 90 g

26) The main Product of photosynthesis is glucose. Then glucose is transportect over the plant body as,

1 Sucrose
2 Glucose
3 Starch
4 Cellulose

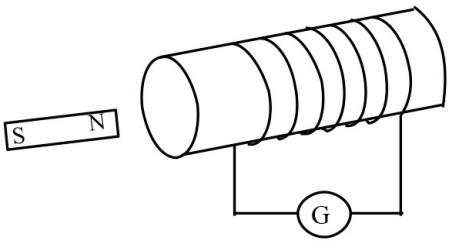
27) What technique can be used to seperate volatile and non volatile constituents in a mixture?

1 Fractional distillation
2 Chromatography
3 Simple distillation
4 Steam distillation

28) What is the compound among the $CaCO_3$, $CaSO_4$, NaCl and $MgCl_2$ which dissolves by absorbing water vapour from the atmosphere.

1 $CaCO_3$
2 $MgCl_2$
3 $CaSO_4$
4 NaCl

29) The following is a setup used to demostrate electromagnetic induction where the galvanometer does not deflect?



1 When the coil is stationary and the magnet is moving towards the coil
2 When both the coil and the magnet are stationary
3 When the coil is stationary and the magnet moves away from the coil
4 When the magnet is stationary and the coil moves away from the magnet

30) What is the number of double bonds per Isoprene molecule?

1 2 2 1 3 3 4 4

31) What is the correct

1 Na^+, Cl^- 2 Na^+, Cl^-, OH^-

3 Na^+, Cl^-, OH^-, H^+ 4 Na^+, OH^-, H^+

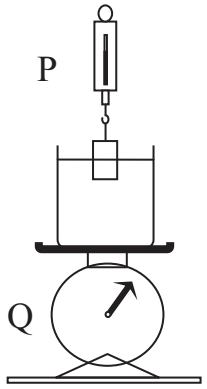
32) Different types of microorganisms are used in industry as well as in food processing which of the following products is used fungus?

1 Bread 2 Bio gas 3 Yogurt 4 Curd

33) The mass of a piece of iron is 500g find the amount of heat needed to raise its temperature from 30^0C to 70^0C (Specific heat Capacity of iron is 460 $Jkg^{-1}\ ^0C^{-1}$)

1 5000 J 2 8400 J 3 9000 J 4 9200 J

34) The mass of water beaker on the 'Q' balance is 540g. The mass of metal cylinder which is hung by P spring balance is 200g when the metal cylinder is submerged partially in the water beaker, it is given the mass of metal cylinder as 150g. What is the reading of 'Q' balance?



1 490 g 2 590 g

3 700 g 4 540 g

35) The department of registration of persons has made arrangements to provide an electronic identity card to Sri Lankan citizen which technology is resulted of this?

A. When contacting area is increased, limiting friction is also increased.

B. The friction of the rear wheel of the bicycle is in the same direction as the bicycle is moving.

C. Friction is dependent on the nature of the surfaces of contacted.

True from above are,

1 A and B only 2 A and C only

3 B and C only 4 A, B and C all

36) The department of registration of persons has made arrangements to provide an electronic identity card to Sri Lankan citizen which technology is resulted of this?

1 Nano Technology 2 Gene Engineering Technology

3 Information Technology 4 Malecular Bio Technology

37) There are often flash floods near cities. What are the human activities which responsible for this ?

1 Using Polythene 2 Irregular Garbage disposal

3 Human Population 4 Deforestation

38) Examples for Graphite, Glucose and air are,

1 Element, Compound, Homogeneous mixtures

2 Element, Compound, Heterogeneous mixtures

3 Element, Element, Compound

4 Compound, Element, Homogeneous mixtures

39) Lack of drinking water is a major challange facing human beings in this century. What is the main reason for this ?

1 Lack of rain due to environmental degradation.

2 Adding industrial wastes, agricultural wastes and domestic wastes to the water.

3 Commencing irregular urban development projects.

4 Storing more water due to get used more bottled water.

40) Although highways are essential for the development of the country, there is a perception that biodiversity is threatened which of the following statements explains the above statement?

A Animals death due to roadside accidents in forested areas

B Isolution of animals due to obstruction of their natural pathways

C Animals death due to pollution caused by traffic

The above statements are true

1 A only 2 B only 3 A and B only 4 B and C only

Provincial Department of Education - North Western Province

Third Term Test 2020

Science II

Grade 11 **Time - Three hours**

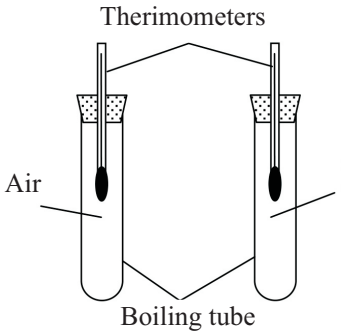
Name / Index number :

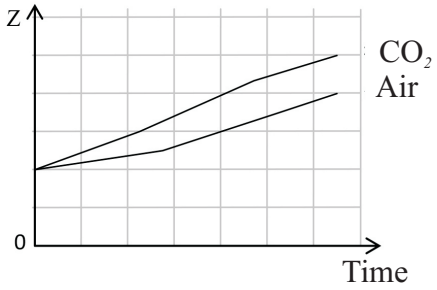
Instructions:-

- **Write yours answers in neat hand writing**
- **Answer four questions in part A, in the space provided**
- **Answer three question in part B from the five questions provided**
- **After writing tie part A and the answer script of part B together and hand over**

Part A - Structural Essay

01. A) The following is a setup used to detect changes in the temperature of carbondioxide in the face of solar heat. The data obtained from observation there are recorded in a graph.





(i). What is the physical quantity represented by Z in the graph? (01 m.)

.....

(ii). What observation can be made from the graph regarding the activity? (01 m.)

.....

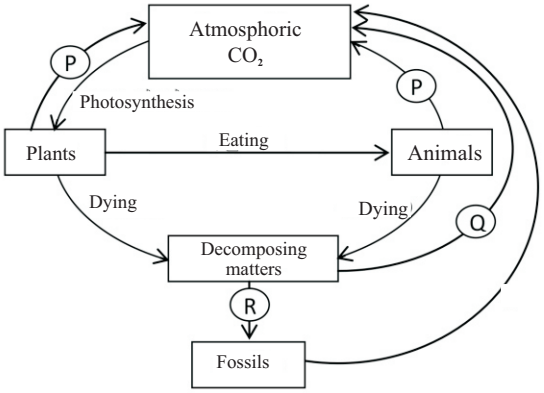
(iii). What is the name given to this phenomenon when it occurs in the atmosphere? (01 m.)

.....

(iv). Mention the first action to be taken when starting the activity. (01 m.)

.....

(B) The figure below shows the cycling event of a particular substance in the environment P, Q, R shows three processes that take place their.



(i). What is the matter shown by above cycle? (01m.)

.....

(ii). Name the P, Q, R processes. (01m.)

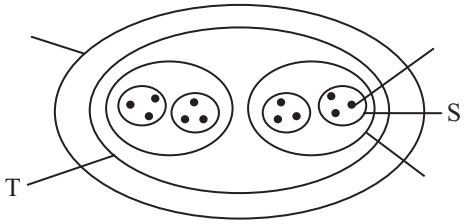
P ..... Q ..... R .....

(iii). Write the similarities of P and Q. (01m.)

.....

.....

(C) The following is an outline of the organizational level of the biosphere.



(i). Name the 'S' and 'T'. (01m.)

S ..... T .....

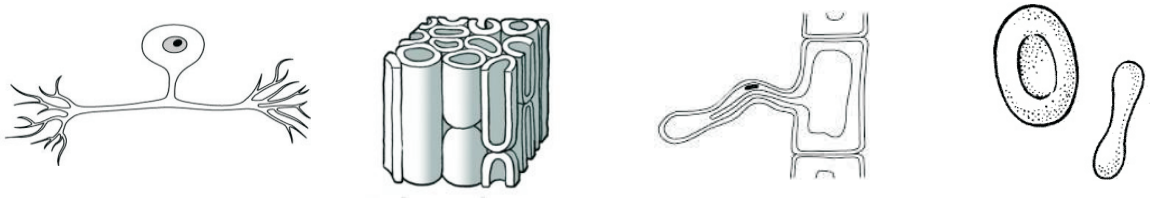
(ii). Write the main characteristics of 'S' (01m.)

.....

.....

.....

02. (A Below are some figure of the plant and animal cells that are designed to perform different functions.



A B C D

(i). Which are the English letters of above cells belonging to animal cells? (01m.)

.....

(ii). Write a characteristic to identify the animal cells, identified above. (01m.)

.....

(iii). What is the main function of 'D' in the living body. (01m.)

.....

(iv). Write the name of the cell type that causes the transmission of impulses shown here.

.....

(01m.)

(B) The following are some of the characteristics of invertebrates.

A. Have joined legs.

B. Have body forms as Medusa and Polyp.

C. Possess a sharp spiny body covering.

D. Soft bodied animals with muscular foot.

E. A highly distributed water vascular system present in the body.

(i). What is the English letter related to the characteristic of the sea cucumber?

.....

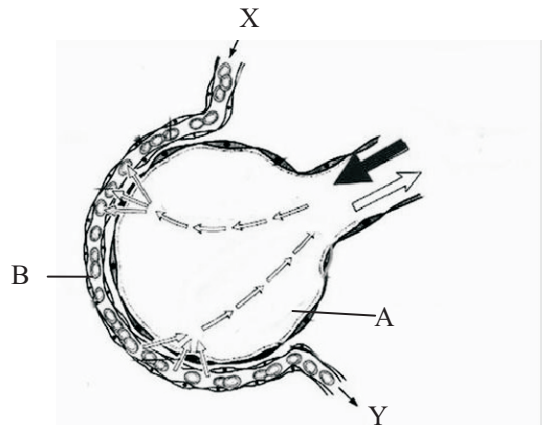
(01m.)

(ii). Write the invertebrate phyla related to the other characteristics expert the above characteristic.

Letter	Related invertebrate phylum

(01m.)

(C) The following is a section of a structure related to the process of respiration of human.



(i). What is the type of tissue which lining the structure 'A'? (01m.)

.....

(ii). Write down the two characteristics shown in the figure for efficient gas exchange.

.....

.....

(02m.)

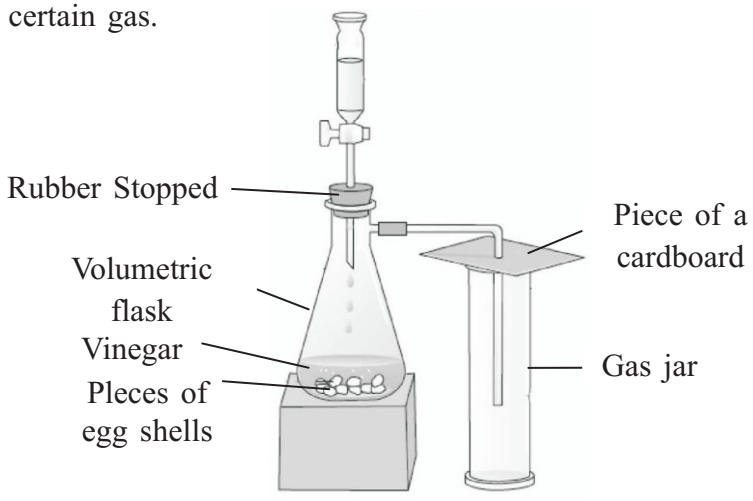
(iii). To which chamber of the heart does the blood vessel 'Y' open? (01m.)

.....

(iv). What is the name of the air exchange process that takes place in this structure? (01m.)

.....

03. (A) The following is an experimental setup which is fixed at home by a student to produce a certain gas.



(i) Write a relevent observation to confirm that a chemical reaction has Occured (01m.)

.....

(01m.)

(ii) What is the gus produced by this experimental setup. (01m.)

.....

(iii) Dil, hydrochloric acid can be used to produce this gas in the laboratory (01m.)

a) What other chemical can be used for this (01m.)

.....

b) Write the balance chemical equation for that reaction (02m.)

.....

c) 1. Write a physical characteristic of the CO_2 gas (01m.)

.....

2. Write a use of the CO_2 gass (01m.)

.....

(B) The table below shows some informations about some of the elements and some of the long in the periodic table.

Ion / Atom	A	B	C^+	D^{2-}	E	F^{3+}
Electronic Configuration of an atom / ion	2,4	2,8,8	2,8	2,8	2,8,2	2,8
Amount of Neutrons	6	22	12	8	12	14

(i) What is the atom or ion belonging to the first group in third period? (01m.)

.....

(ii) What is the element with highest ionization energy? (01m.)

.....

(iii). What is the electronic configuration related to the atom 'F' ? (01m.)

.....

(iv). What is the type of bond formed between A and D ? (01m.)

.....

(v). Draw the lewis structive of the bond representation above. (01m.)

(vi). What is the atom or ion which buns with a bright white flame during Combustion, Leaving a white precipitate at the end? (01m.)

.....

(vii). What is the element that makes an amphoteric oxide? (01m.)

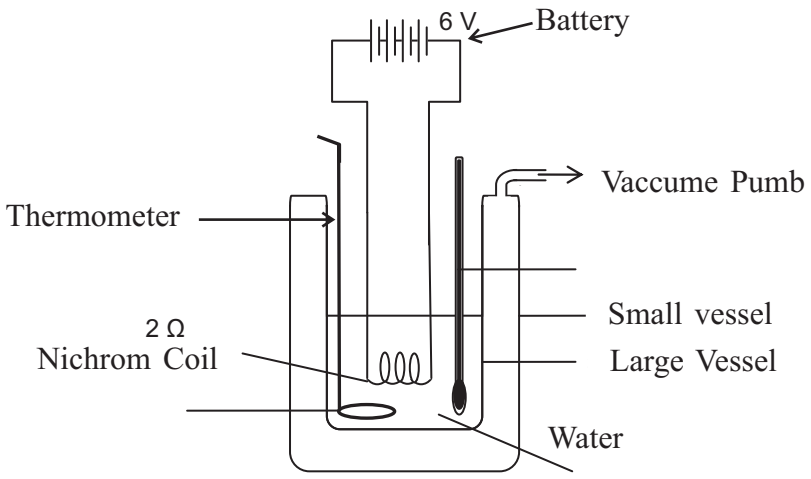
.....

(viii). What is the element stored in the wax kerosene in the laboratory? (01m.)

.....

(01m.)

04. (A) Below is an image of a setup to find the heating effect of the current electricity.



(i). Explain why Nichrome is used to make the heating coil. (01m.)

.....

(ii). What is the mechanism by which heat travels through water? (01m.)

.....

(iii). Fixing to the vacum pump, remove air between to vessels explain this. (01m.)

.....

(iv). If the resistance of the coil is 3 , and the potential difference is 6V

a) What is the current taken by the coil when operating? (01m.)

.....

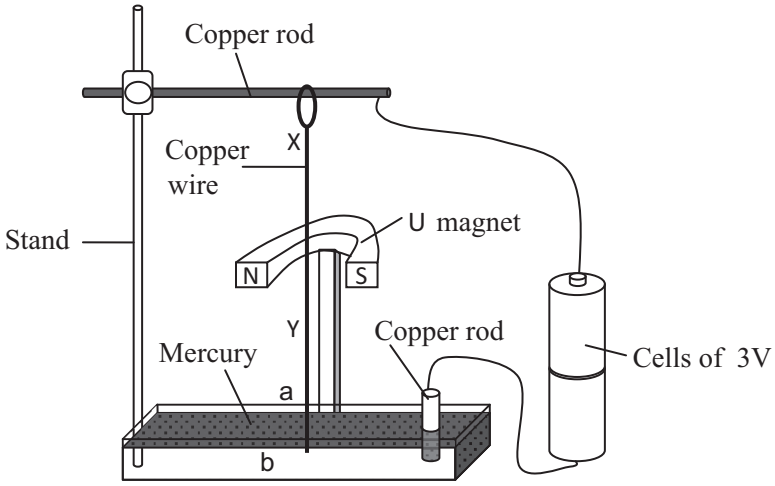
.....

b) Calculate the power of the coil. (03m.)

.....

.....

(B) The table below shows some informations about some of the elements and some of the ions in the periodic table



(i). This setup can be used to demonstrate the function of any of the following devices. Select and write it.

a) Dynamo b) Motor (01 m)

.....

(ii). What is the direction of the current flow through X and Y wires ? (01 m)

.....

(iii). Write down a physical characteristic of mercury that can be used it in activity. (01 m)

.....

(iv). In which direction does the X Y wire moved from the a, b letters mentioned on the mercury when the current flows through the setup ? (02 m)

.....

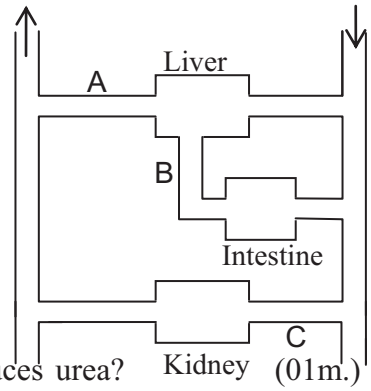
(v). In the above question, what rule did you use to find the direction of motion of the X Y wire ? (01 m)

.....

Essay - Part - B

- **Answer only for <u>three</u> questions from the questions 05, 06, 07, 08 and 09.**

05. A) Here is an overview of the blood circulatory system.



(i). Name the blood vessels named as B and C (02m.)

(ii). From the blood vessels A, B and C,

a. What is the vessel with high glucose concentration ? (02m.)

b. Mention the reason for the above (a) (01m.)

c. What is the compound that stored glucose in the liver? (01m.)

(iii). Urea is a constituent of urine. What is the organ that produces urea? (01m.)

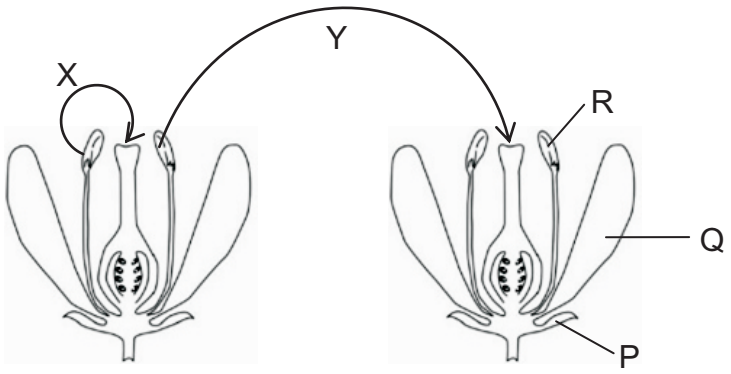
(iv). The process by which urine is produced in the kidneys takes place in three stages. Ultrafiltration and secretion are two of them.

a. What is the name of the other stage? (01m.)

b. What is the structural and functional unit that contributes to that function? (01m.)

(v). Write down two components that are present in the blood that enters the kidneys but are not present in the fluid that filters through the ultrafiltration. (02m.)

(B) The diagram shows two flowers found during an environmental observation.



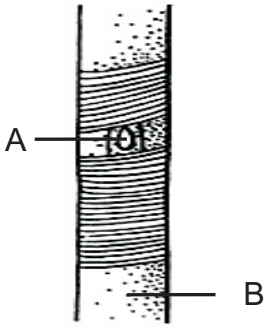
(i). Name the way of pollination mention as X and Y. (02m.)

(ii). What is the reason for being called the above flower as bisexual flower? (01m.)

(iii). Write the English letter showing the part where the photosynthesis takes place among the flower parts above. (01m.)

(iv). The most common way of pollination of the flowers is Y. Write down one advantage of it. (01m.)

(C) The figure shows how a grafting is performed.



(i). Write the English letter of the stock and the scion. (01m.)

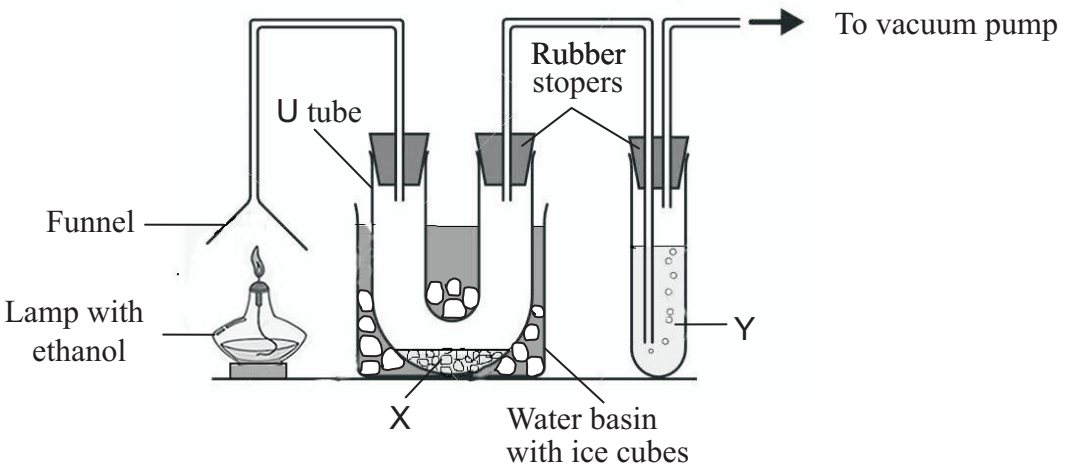
(ii). What is the name of the above grafting method.? (01m.)

(iii). Write one characteristic of, used for the grafting

a. Scion (01m.)

b. Stock (02m.)

06. (A) The figure below shows a device designed to study the combustion products of ethanol (C_2H_5OH)



(i). Of the X and Y,

a) Write the chemical equations of the compunds (02.m)

b) Write colours in order before and after the experiment. (04.m)

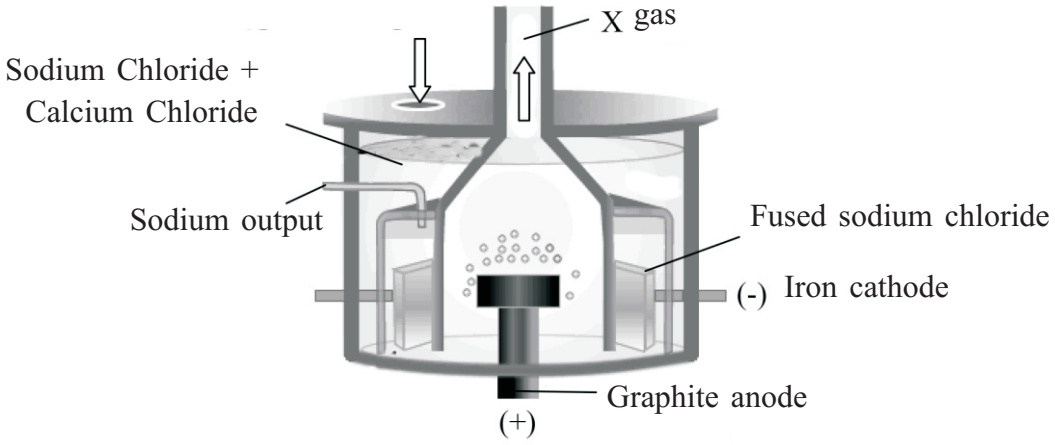
(ii). What is the reason for keeping the U tube in a basin with ice? (01.m)

(iii). According to the observation of Y, what could be element consist in ethanol ? (01.m)

(iv). Use the numbers to balance the following equations related to ethanol combustion. (02.m)

$$2C_2H_5OH\,(aq) + \square\, O_2\,(g) \rightarrow \square\, CO_2\,(g) + 6H_2O\,(l)$$

(B) The following figure shows an outline of the downs cell used to produce sodium by electrolysis.



(i). What is the element that makes up the electrode used for the anode in here ? (01.m)

(ii). How to prepare a fused sodium chloride solution ? (01.m)

(iii). What is the reason for adding calcium chloride ($CaCl_2$) when prepare the fused sodium chloride? (01.m)

(iv). Below are the electrode reactions of the sodium extraction rewrite them after completed.

a) $\square + e \rightarrow Na$ (01.m)

b) $2Cl \rightarrow Cl_2 + \square$ (01.m)

(v). What is the by product of the downs cell named as X ? (01.m)

(vi). Sodium and the by product X, which produced during the electrolysis,

a) What is the tactic used to prevent each other from colliding? (01.m)

b) Write the balanced chemical equation to show the effect of sodium colliding with the by product X. (01.m)

(vii). Write down one use for each of the sodium and X by product produced in here.

(02.m)

07. (A) Below are some of the optical instruments. Write down the answers to the questions given below according to them.

- Plane mirror
- Convex lens
- Convex mirror
- Concave mirror
- Concave lens

(i). Select and write the optical instrument that can be used for the following activities.

a) for a better view when shaving (01.m)

b) for the side mirrors of vehicles (01.m)

c) for take small, upright and virtual images in each cases. (01.m)

(ii). a) Specify where to place a spot type light source on the main axis of the concave mirror to obtain a parallel beam of light using cncave mirror. (01.m)

b) Draw a ray diagram to show the reflection of the light in above incident. (03.m)

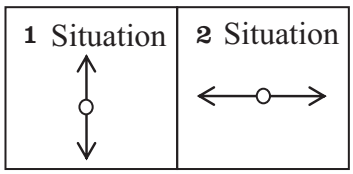
(B) A slinky used for mechanical wave representation is placed on a plane surface and one end is attached to a stationary surface and the free end is,

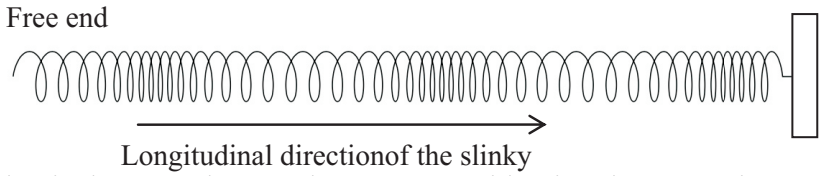
1 Situation

Moving vertically along the longitudinal direction of the slinky.

2 Situation

Moving back and forth along hte logitudial direction of the slinky





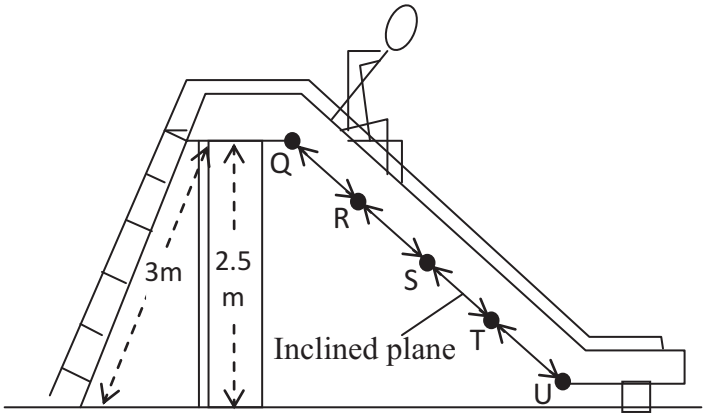
(i). What are the types of mechanical waves that can be represented in situations 1 and 2 ?

(02.m)

(ii). In the first case, write the relationship between the direction in which the waves travel and the direction in which the media particles vibrate. (01.m)

(iii). Write down a change you make in the first instance to show how the particles in the media vibrate (01.m)

(C) The diagram below shows an image of a slippery boat in a children's park. A child with a mass of 20 kg slides to U from the Q after coming through the ladder. ($g = 10\ ms^{-2}$)



(i). What is the weight of the child ? (01m.)

(ii). Mention the two forces acting against each other when the child's feet are close together at the rest on point Q ? (02m.)

(iii). What are the two english letters that indicate the gap that the child passes in the shortest time while sliding ? (01m.)

(iv). What is the force of friction that is activated when the child is moving ? (01m.)

(v). Draw the velocity time graph of the child when movina from Q to U. (02m.)

(vi). Find the potential energy stored in the child while in place Q. (02m.)

08. (A) The following are steps in a test to determine the activity of the amylase enzyme on starch.

1. Preparing a starch solution by using hot water.
2. Adding the amylase solution to it.
3. At unit times remove one drop at a time from the mixture and place it on a white porcelain tile and put an iodine drop on to it.

(i). Name the elements in strach. (01m.)

(ii). What is the intended purpose to be achieved by making the starch an aqueous solution ? (01m.)

(iii). At the beginning when add a drop of iodine solution to the mixture,

a) What could be the observation? (01m.)

b) Write the reason for it (01m.)

(iv). During the final period of the test,

a) What could be the observation ? (01m.)

b) Write a compound in the mixture which helps to give that observation (01m.)

(v). What are the biomolecules that are adapted to perform the following functions

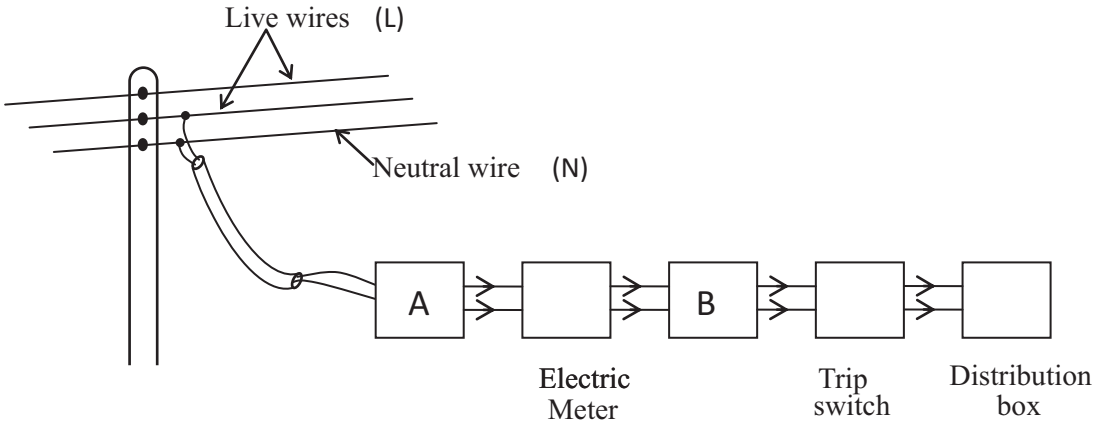
a) Act as antibodies (01m.)

b) Water conservation in living bodies (01m.)

c) Transmission of genetic traits (01m.)

Part - B - Qnt.

(B) Below is a diagram showing the configuration of a household electrical circuit.



(i). Name the devices mention in A and B. (02m.)

(ii). In the home electrical circuit,

a) What is the voltage ? (01m.)

b) What is the frequency ? (01m.)

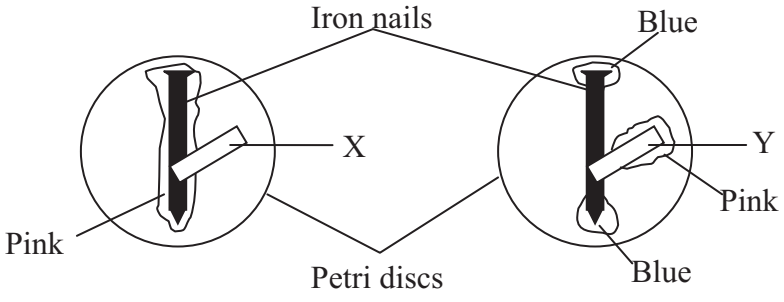
(iii). What are noted as 75W and 230V on a bulb connected to the home electrical circuit? (01m.)

(iv). If two bulbs, each having a power of 75W are used for 4 hours and a television having a power of 80W is used for 3 hours per day, find the electricity consumption during a month. (30 days) (03m.)

(v). Write down an advantage of using LED bulbs instead of the CFL bulbs. (01m.)

(vi). Write two ways that can be used to conserve the electricity. (02m.)

09. (A) Below are images of some of the devices that have been developed to test the influence of other metals on iron corrosion.



A - Device B - Device

(i). What is the device that can be seen the corrosion of the iron ? (01m.)

(ii). What was the observation that led to the determination that the iron was corroded ? (01m.)

(iii). Write down the half ionic reaction of the iron corrosion. (01m.)

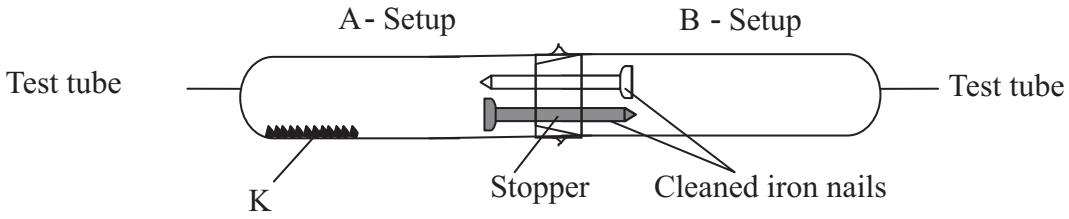
(iv). Caused to give a pink colour as the observation,

a) What is the iron produced in the jelly medium ? (01m.)

b) What is the compound used for the jelly medium ? (01m.)

(v). Below is a setup designed to look at the water requirement for rust

(vi). Below is a setup designed to look at the water requirement for rust.



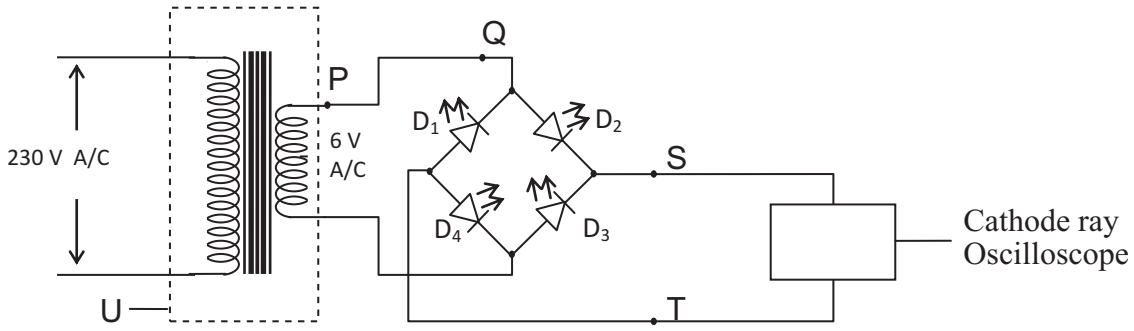
a) What is the material used as K ? (01m.)

b) Write a hypothesis used to set up the setup ? (01m.)

c) Write the control setup and the test setup according to the hypothesis.

(01m.)

(B) The following is an image of a device set to rectify an alternating current.



(i). Name the device used as U. (01m.)

(ii). Write down a physical quantity related to the electricity that changes when the transformes is activated. (01m.)

(iii). What are the diodes that emit light when the current flows, in the direction P and Q ? (02m.)

(iv). Draw an outline for the graph showing the cathode ray oscillation when the circuit is in operation. (02m.)

(v). Name the device which should be connected to the place S and T to minimize the variation in rectified voltage. (01m.)

(vi). If there are 72 turns in the secondary coil of the step down down transformer calculate the number of turns in the primary coil ? (03m.)

Answer paper - Part I

01. (4)	02. (3)	03. (2)	04. (1)	05. (4)	06. (2)	07. (2)	08. (1)	09. (2)	10. (4)
11. (2)	12. (3)	13. (3)	14. (4)	15. (1)	16. (3)	17. (1)	18. (3)	19. (4)	20. (2)
21. (2)	22. (1)	23. (3)	24. (4)	25. (2)	26. (1)	27. (3)	28. (2)	29. (2)	30. (1)
31. (3)	32. (1)	33. (4)	34. (2)	35. (3)	36. (3)	37. (2)	38. (1)	39. (2)	40. (4)

(40 x 2 = 80 marks)

Paper - II

(01) (A) (i) Temperature

(ii) CO_2 absorbed more heat than the normal air

(iii) Green house effect

(iv) Keep under direct sunlight

(B) (i) Carbon cycle

(ii) P - Respiration Q - Combustion R - Fossilization

(iii) In both cases there is a complete loss of Oxygen

Emmision of CO_2

(C) (i) S - Population T - Ecosystem

(ii) In specific time period

In a particular geographical location

In same species

(02) (A) (i) D, A (02 marks)

(ii) Without cell wall (01 mark)

(iii) Transportation of O_2 (01 mark)

(iv) Sensory neuron (01 mark)

(B) (i) E (02 marks)

(ii) A Arthropoda

D Mollusca

B Cnidaria / Coelenterata (½ x 6 = 03 marks)

(C) (i) Epithelial tissue (01 mark)

(ii) Surrounded with single cell layer, there are large number of blood capillaries around the alvedi (02 marks)

(iii) Left atrium (01 mark)

(iv) Diffusion (01 mark)

(03) (A) (i) Releasing of gas bubbles (01 mark)

(ii) CO_2 (01 mark)

(iii) $CaCO_3$ (01 mark)

(iv) $CaCO_3 + 2HCl \rightarrow CaCl_2 + CO_2 + H_2O$ or for the related reaction (02 marks)

(v) (a) For suitable answer (01 mark)

(b) For suitable answer (01 mark)

Answer paper

	(B)	(i)	C^+	(01 mark)
		(ii)	B	(01 mark)
		(iii)	2, 8, 3	(01 mark)
		(iv)	Covalent	(01 mark)
		(v)	D A D	(01 mark)
		(vi)	E (1 marks) [No marks for the Mg]	(01 mark)
		(vii)	F	(01 mark)
		(viii)	C	(01 mark)
(04)	(A)	(i)	Because of high resistance	(01 mark)
		(ii)	Convection	(01 mark)
		(iii)	By conduction	(01 mark)
		(iv)	V - IR	(01 mark)
			I = 6/3	(01 mark)
			I = 2A	(01 mark)
		(v)	P = VI	(01 mark)
			P = 6 x 2	(01 mark)
			P = 12W	(01 mark)
	(B)	(i)	Motor	(01 mark)
		(ii)	from X to Y	(01 mark)
		(iii)	A good conductor	(01 mark)
		(iv)	towards B	(02 mark)
		(v)	Fleming's Left hand rule	(01 mark)
(05)	(A)	(i)	B Hepatic portal vein	(01 mark)
			C Renal artery	(01 mark)
		(ii)	a. B blood vessel	(01 mark)
			b. Because glucose, the end product of digestion, is carried to thee liver	(01 mark)
			c. Glycogen	(01 mark)
		(iii)	Liver	(01 mark)
		(iv)	a. Selective reabsorption	(01 mark)
			b. Nephrons	(01 mark)
		(v)	Plasma proteins and blood cells	(02 marks)
	(B)	(i)	x self - pollination	(01 mark)
			y cross - pollination	(01 mark)
		(ii)	Flowers that consist of both male and female parts.	(01 mark)
		(iii)	P	(01 mark)
		(iv)	Produce new species	(01 mark)
	(C)	(i)	A Scion	(01 mark)
			B Stock	(01 mark)
		(ii)	Bud grafting	(01 mark)
		(iii)	For the correct answer	(02 marks)

Answer paper

(06) (A) (i) $CaSO_4$, $Ca(OH)_2$ (02 marks)

(ii) Blue - Colourless (02 marks)

Colourless - White (02 marks)

(iii) To condense the water vapour (01 mark)

(iv) C (01 mark)

(v) To balance it (02 marks)

(B) (i) C (01 mark)

(ii) Heat until boiling point (01 mark)

(iii) Reduce the boiling point (01 mark)

(iv) $Na^+ + e \rightarrow Na$

$2Cl \rightarrow Cl_2 + 2e$ (02 marks)

(v) Cl_2 (01 mark)

(vi) a. Using of perforated steel diaphragm (01 mark)

b. $Na^+ + Cl^- \rightarrow NaCl$ (01 mark)

(vii) For the suitable answer (02 marks)

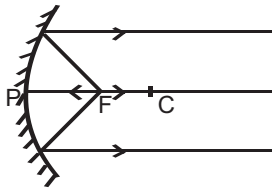
(07) (A) (i) a. Concave mirroe (01 mark)

b. Convex mirror (01 mark)

c. Convex mirror (01 mark)

(ii) a. On the focal point (01 mark)

b.



(03 marks)

(B) (i) 1. Transverse waves (01 mark)

2. Longitudinal waves (01 mark)

(ii) Waves that propagate in a direction re-pendicalar to the direction the particles of the medium move. (01 mark)

(iii) Apply an easily identifiable marker (01 mark)

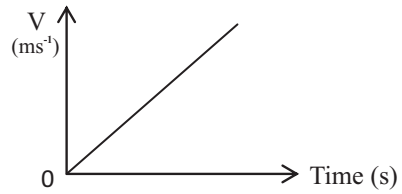
(C) (i) 200 N (01 mark)

(ii) The force applied on the surface by the child and the force applied on the child by the surface. (02 marks)

(iii) T, U (01 mark)

(iv) Dynamic friction (01 mark)

Answer paper

(v) 

(02 marks)

(vi) $E_p = mgh$ (01 mark)

$E_p = 20\,kg \times 10\,ms^{-2} \times 2.5\,m$

$E_p = 500\,J$ (01 mark)

(08) (A) (i) C, H, O (Give mark for the all three answers) (01 mark)

(ii) The enzyme works well on the starch. (01 mark)

(iii) a. Dark blue / Purple (01 mark)

b. Because of the un-change of the starch (01 mark)

(iv) a. Turns in to brownish yellow (01 mark)

b. Maltose (01 mark)

(v) a. Protein (01 mark)

b. Lipid (01 mark)

c. Nucleic acid (01 mark)

(B) (i) a. Service fuse (Overload circuit breaker) (01 mark)

b. Main switch or Isolator (01 mark)

(ii) a. 230 V (01 mark)

b. 50 Hz (01 mark)

(iii) Consumption of 75 Js^{-1} energy when connected to a 230V power supply (01 mark)

(iv) Consumed during one day - 0.84 Kwh (01 mark)

Consumed during one month - 25.2 Kwh (01 mark)

For the units (01 mark)

(v) Increasing life span or decreasing energy consumption (01 mark)

(vi) For the correct two answers (02 marks)

(09) (A) (i) B (01 mark)

(ii) Create blue colour near the iron nail (01 mark)

(iii) $Fe(s) \rightarrow Fe^{2+}(aq) + 2e$ (01 mark)

(iv) a. OH^- (01 mark)

b. Phenolphthalein (01 mark)

(v) x - Displacement (01 mark)

Heating of the test tube (01 mark)

(vi) a. $CaCl_2$ (01 mark)

b. Correct answer (01 mark)

c. Controlled setup - a (01 mark)

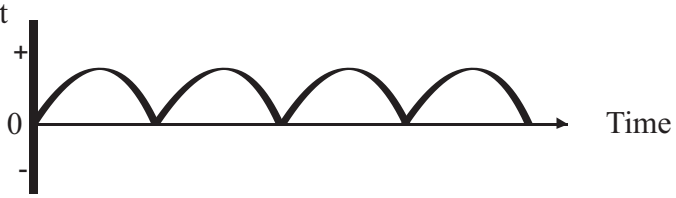
Normal set up - b (01 mark)

(B) (i) Transformers (01 mark)

(ii) Voltage or current (01 mark)

(iii) D_2, D_4 (02 marks)

(iv) Current



(v) Capacitor (01 mark)

(vi) $\frac{Vs}{Vp} = \frac{Ns}{Np}$ (01 mark)

$\frac{6V}{230V} = \frac{72}{Np}$ (01 mark)

Np = 2760 (01 mark)