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மத்திய மாகாண கல்வித் திணைக்களம்
DEPARTMENT OF EDUCATION - CENTRAL PROVINCE

අ.පො.ස.(සා/පෙළ) පෙරහුරු පරීක්ෂණය - 2023 (2024)
க.பொ.த. (சா/த) முன்மாதிரிப் பரீட்சை 2023 (2024)
G.C.E. (O/L) Practice Test - 2023 (2024)

ශ්‍රේණිය தரம் Grade	11
කාලය நேரம் Time	1 hour

Science 1

34	E	I

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

1. Which device given below uses total internal reflection of light?
(1) Microscope (2) Kaleidoscope
(3) Prism binocular (4) Astrological telescope

2. Which of the following choices accurately states a vector quantity and its standard international unit?
(1) distance - km (2) displacement- m (3) speed- m s^{-1} (4) velocity-m s^{-2}

3. The production of ova in females initiates
(1) when Graffian follicles get matured. (2) since the foetal stage.
(3) near puberty. (4) when luteinising hormone is released.

4. Which of the following possesses an electronic configuration similar to the atom of Ar?
(1) Atom of Ne (2) K^+ ion (3) Mg^{2+}ion (4) Na^+ ion

5. What is the electronic configuration of the element located in group II of the 4th period in the periodic table?
(1) 2, 1 (2) 2, 4 (3) 2, 8,4 (4) 2, 8, 8, 2

6. The disease inherited due to the presence of a sex-linked recessive gene is
(1) Thalassemia (2) Haemophilia. (3) Albinism (4) Anemia

Use the statements given below to answer the Questions 7 and 8

The organisms belonging to the kingdom Plantae possess an organized nucleus and chloroplasts, Further, they show tissue-level organisation.

7. Which of the following belongs to the kingdom stated above?


(1)


(2)


(3)


(4)

8. Which of the following is the reason not to include algae in kingdom plantae?
(1) as they are not autotrophic (2) as most of them do not possess chlorophyll
(3) as they do not possess organized nuclei (4) as the cells are not organized into tissues

9. Which of the following when mixed with water forms a homogenous mixture?
(1) Chalk powder (2) Detergent powder (3) Wheat flour (4) Glucose

10. Select the faulty statement regarding the cell membrane.
(1) it is composed of lipids and proteins (2) it is a semi-permeable membrane
(3) it is found in plants as well as animal cells (4) it is a dead structure.

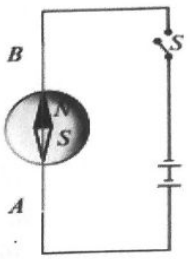
11. Heat passes from one place to another
(1) along the gradient of heat (2) along the gradient of density
(3) along the gradient of temperature (4) along the gradient of the amount of substances

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12. Which of the following includes an ionic compound and a covalent compound respectively?
(1) H_2O, NaCl (2) H_2O, CO_2 (3) NaCl, CO_2 (4) $AlCl_3$. CaO

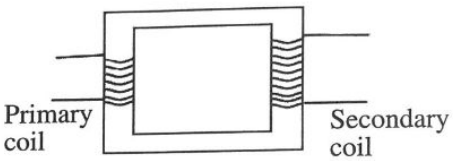
13. The structure in the male reproductive system that stores the sperms temporarily is
(1) seminal vesicles (2) epididymis (3) testis (4) prostate glands

14. The diagram given below shows how a straight conductor connected to two dry cells is kept on a compass. Which of the following indicates the correct deflection of the needle when the switch is closed?




(1) (2) (3) (4)

15. Given below is a transformer containing 200 and 1000 turns in primary and secondary coils respectively. If a voltage of 12 V is supplied to the primary coil, the voltage received in the secondary circuit is
(1) 230V (2) 110 V (3) 60 V (4) 30 V

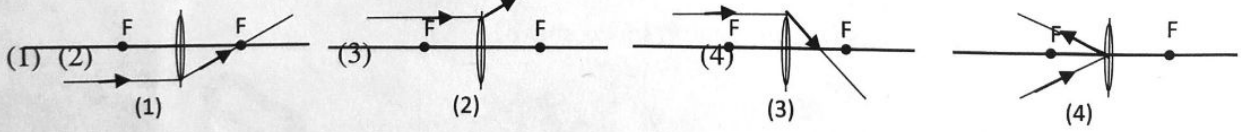


16. Given below are some information about metals.
A- Reacts vigorously with water.
B- Use to make vapour lamps which emit yellow light.
C- Used for the production of firecrackers.
Which of the above can be regarded as true for Sodium?
(1) only A (2) only A and B (3) only A and C (4) A, B and C

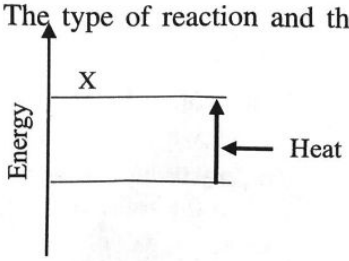
17. The substance contained in the gastric juice which converts protein to polypeptides is
(1) Bile (2) water (3) Pepsine. (4) Hydrochloric acid.

18. Given below are some variations of periodic patterns in the periodic table.
A - Electronegativity decreases when moving along the group towards down
B - Electronegativity increases when moving along the period from left to right
C - First ionization energy decreases when moving along the period from left to right.
Which of the above can be considered as true?
(1) only A and B. (2) only A and C (3) only Band C (4) A, B, and C

19. Select the correct ray diagram regarding the convex lens.



20. Given below is an energy level diagram of a certain chemical reaction. The type of reaction and the substance denoted by the letter X are respectively.
(1) Exothermic- Reactants (2) Endothermic- Reactants
(3) Exothermic - Products (4) Endothermic - Products



21. Regarding the colour of the pods of the garden pea plant, green (G) remains dominant while yellow (g) remains recessive. Which percentage of offspring would show the phenotypes of parents, if a cross is made between Gg and Gg?
(1) 25% (2) 50% (3) 75% (4) 100%

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22. The gravitational attraction created on objects on the moon is $1/6^{th}$ as that of on the earth. Consider the following statements.

A - While acceleration due to gravity on the earth is 10 m s^{-2}, $1/6^{th}$ of it exists on the moon.

B - A boy with a mass of 30 kg on Earth will be 5 kg on the moon.

C- A boy weighing 300 N will be 50 N on the moon.

Which of the above can be considered as true?

(1) only A and B (2) only A and C (3) only B and C (4) A, Band C all

23. Select the correct statement regarding mitosis.

(1) The division takes place in two phases.

(3) New varieties are formed

(2) Four daughter cells are formed at the end of division

(4) Takes place in both haploid and diploid cells

24. Which carbohydrate given below matches with the common molecular formula $C_{12}H_{22}O_{11}$?

(1) Galactose (2) Lactose (3) Cellulose (4) Starch

25. The atomic notation of element X is $^{23}_{11}X$. Given below are some statements made by a student regarding element X.

A - Forms monovalent negative ions.

B - Atomic mass number is equal to 23.

C - The valency is one and the element binds with oxygen and forms the compound XO.

Which of the above can be considered as true?

(1) only A (2) only B (3) only A and B (4) only Band C

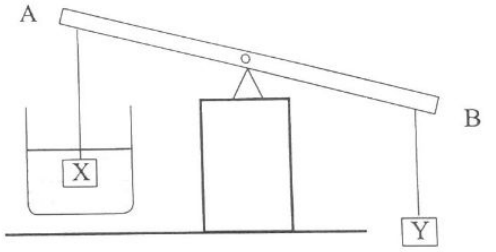
26. The diagram shows how two weights are hung in a light rod. The weight X is immersed in a vessel containing water as illustrated. Which statement can be regarded as correct about what should be done to balance the rod?

(1) move the vessel of water towards down.

(2) move the knife edge towards A.

(3) move the load Y towards the edge B of the rod.

(4) lift the vessel of water towards up.



27. The percentage of Nitrogen contained in Urea $(CO(NH_2)_2$ is (C =12, H =1, N =14, 0 =16)

(1) 14/46 X 100 (2) 14/60 X 100 (3) 28/60 X 100 (4) 28/72 X 100

28. Which of the following is a characteristic of skeletal muscle tissue?

(1) the presence of spindle shape cells (2) the presence of uninucleated cells.

(3) the presence of intercalated disks. (4) the presence of striations.

29. An object with a mass of 2 kg moves at uniform velocity and covers a distance of 100 m within 10 s. The momentum of the object is

(1) 10 kg m s^{-1} (2) 20 kg m s^{-1} (3) 200 kg m s^{-1} (4) 1000 kg m s^{-1}

30. The glands which secrete the hormone Glucagon and the enzyme Lypase are respectively

(1) pancreas-stomach (2) thyroid- pancreas

(3) stomach- pancreas (4) pancreas - pancreas

31. Which of the following is subjected to complete ionisation in aqueous medium and releases OH^-

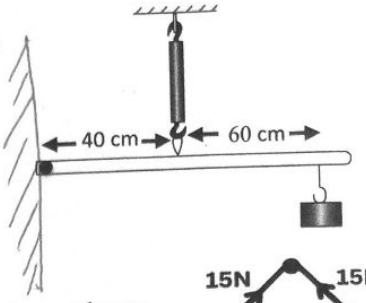
(1) NH_4OH (2) NaOH (3) $NaHCO_3$ (4) NH_3

32. 100 W and 240 V are printed as specifications of a certain electrical device. If the device functions using optimum voltage, the electric current that passes through the device is

(1) 5/12 A (2) 12/5 A (3) 5 A (4) 12 A

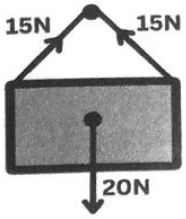
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33. The diagram illustrates a light rod with one end pivoted as to rotate and 2 kg weight is hung at the other end. The spring balance connected to the rod holds it horizontally at its equilibrium. The expected reading of the spring balance is



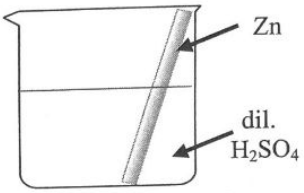
(1) 50 N (2) 300 N (3) 500 N (4) 5000 N

34. Which of the following could be true regarding the resultant force acting on the strings that the object is suspended?



(1) the resultant force is 30 N and it is acting inclined along the strings towards up.
(2) the resultant force is 10 N and it is acting inclined along the strings towards up.
(3) the resultant force is 20 N and it is acting vertically upwards along the centre of gravity and the point where the object is hung.
(4) the resultant force is 20 N and it is acting vertically downwards along the centre of gravity and the point where the object is hung.

35. Given below is how a rod of Zn is immersed in a dilute solution of Sulphuric acid. The following are three statements made by a student regarding this activitv.

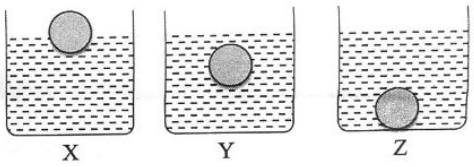


A - The metal Zn and H^+ ions tum into Zn^{2+} and H_2 respectively.
B - The metal Zn precipitates and as a result the mass of the metal increases.
C - An electric current can be generated if the exchange of electrons between the metal Zn and H^+ can be done along an external circuit.

Which of the above is true?

(1) only A and B (2) only A and C (3) only Band C (4) A, Band C all.

36. The diagram illustrates how the same object is immersed in three different liquids contained in identical vessels. Three statements regarding the activity are given below.



A- The upthrust is mimmum at instance X
B- The upthrust is mimmum at instance Z
C- The upthrust of X and Y instances are the same

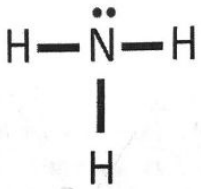
The true statements are

(1) Only A (2) only B (3) only C (4) only B and C

37. What will happen to the kinetic energy of a moving object which moves at a velocity of V, if its velocity increases two times while reducing its mass m by half?

(1) increases twice. (2) decreases twice (3) increases 4 times (4) no change

38. Consider the following statements regarding the compound illustrated here.



A - The valance shell of Hydrogen is completed.
B - The octet of electrons in Nitrogen is completed
C - Two pairs of electrons which do not participate in bond formation are found around Nitrogen.

Which of the above can be regarded as true?

(1) only A (2) only B (3) only A and B (4) A, B and C all.

39. People contribute to climatic changes in different ways. Which of the following is not such a contribution?
(1) lighting electric bulbs in the houses (2) watching television
(3) usage of books (4) attend to school by a vehicle

40. Understanding the correct cooking habits is useful in increasing the efficiency of cooking. It will further minimize the use of energy. Which of the following helps in increasing the efficiency of cooking?
(1) Use of pressure cooker instead of rice cooker.
(2) Cover the food completely with water when boiling them
(3) Allow the flame spilling over the sides of the cooking pot to cook fast.
(4) Use of oven instead of a bread toaster to toast the bread.

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Part B – Semi-Structured Essay



05. Reproduction is important for the continuous existence of living beings.

(A) (i) Illustrated here are two structures separated from the same flower.

(a) Name the structures X and Y respectively. (01)

(b) Name the type of gamete formed by X. (01)

(c) Explain what is referred to as self-pollination by using the structures X and Y. (02)

(d) State the name of the method of reproduction which occurred using the structures X and Y (01)

(e) Write a special characteristic of the process stated above (01)

(ii) Sexually transmitted diseases in humans are caused by bacteria, fungi, and viruses.

(a) Name a sexually transmitted disease caused by a bacterium. (01)

(b) Suggest one way to minimise the spread of sexually transmitted diseases. (01)

(B) There are two distinct phases of respiration: external respiration and cellular respiration.

(i) (a) Given below is an incomplete equation regarding aerobic respiration

$$C_6H_{12}O_6 + X \longrightarrow CO_2 + Y + ATP$$

Write suitable terms for X and Y respectively. (02)

(b) Name an excretory organ which removes the substance Y out of the body. (01)

(c) Name the organelle responsible for conducting the reaction state above within the cell. (01)

(d) State a special characteristic of the ~~above-mentioned~~ relevant organ that aids in the absorption of X into the bloodstream. (01)

(ii) What is meant by excretion? (01)

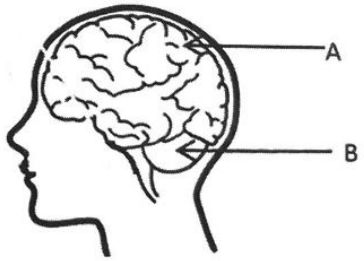
(C) The circulation of blood in humans is divided into two parts; pulmonary circulation and systemic circulation.

(i) What change occurs in the blood after it undergoes pulmonary circulation? (01)

(ii) (a) State a function performed by blood other than transporting substances. (01)

(b) Name the component of blood that is responsible for the function mentioned above. (01)

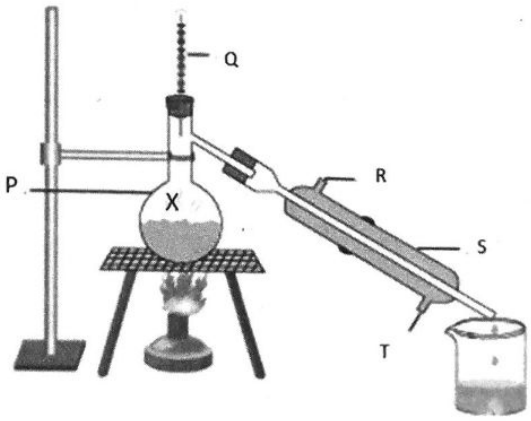
(D) The diagram illustrates a part of the body used for coordination.



(i) Name the part denoted by B and state the function of it. (02)

(ii) Name a hormone released by an endocrine gland found in the part denoted by A. (01)

06. (A) Given below is a set-up made by a group of students to extract essential oil contained in rose petals (Rose oil).



(i) Name the equipment P and S respectively (01)

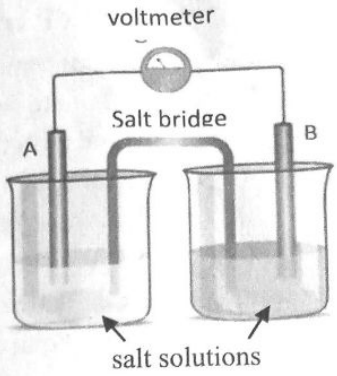
(ii) The temperature at X is found to be below the boiling temperature of water. State the reason for this (01)

(iii) The water is inserted into the equipment S through T end. Explain the reason for this. (01)

(iv) State two special characteristics of essential oils which aid in separating them from oil-water mixtures obtained during extraction. (02)

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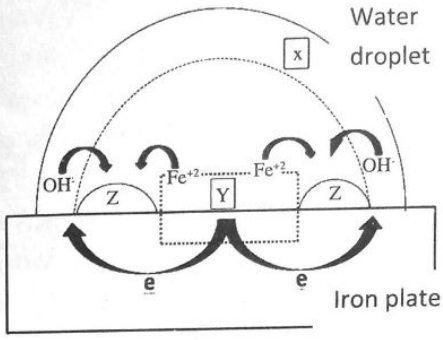
(B) Given below is an electrochemical cell made by a group of students. They fixed a path to allow ions to be moved between the solutions (Salt bridge).



(i) A is oxidised when the cell is activated.
  (a) Name the anode and the cathode respectively (02)
  (b) Name the negative terminal of the cell. (01)

(ii) (a) Name a substance each that can be used as A and B respectively. (02)
  (b) Suggest a proposal to enhance the electromotive force of the cell. (01)

(C) The diagram illustrates the rusting process which occurs naturally associated with a drop of water on an iron surface,



(i) (a) The peripheral area of the water droplet contains the highest concentration of oxygen. State the reason for this. (01)

(b) The following reactions occur at X and Y zones.

Zone Y	$Fe \longrightarrow Fe^{2+} + 2e$
Zone X	$O_2 + 2H_2O + 4e^- \longrightarrow 4OH^-$

Which zone is the anodic region between X and Y? (01)

(ii) (a) Electrons formed during the reaction in region Y moves along the iron surface into the peripheral area of the water droplet. What are those electrons spent on? (01)

(b) What ~~occurs on~~ happens to the iron surface in region Y? 01)

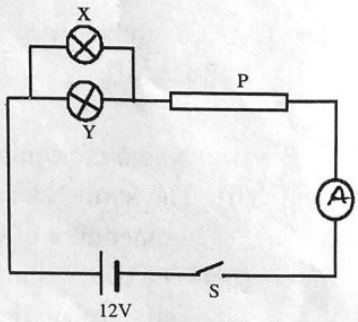
(iii) What happens when a drop of phenolphthalein is added to the water droplet? (01)

(iv) The rusting process of iron is similar to the process that occurs in an electrochemical cell. State two similarities between the two. (01)

(v) Two methods to prevent rusting of iron are described below. Briefly explain the process behind each method.
  (a) a block of Zink is welded to the body of the ship. (01)
  (b) Applying paint on fences made of iron (01)

07. (A) Illustrated below is an electric circuit. The bulbs X and Y are identical and P is a resistor having a length of ℓ and a cross-sectional area of A. The reading of the ammeter is 2 A when the switch is closed.

(i) (a) What is the method of connecting X and Y bulbs in the circuit? (01)
  (b) Does the brightness of the bulbs X and Y remain the same or different? (01)
  (c) How does the brightness of bulb Y change when bulb X burns out? (01)



(ii) What is the total resistance of the circuit? (02)

(iii) What happens to the ammeter reading when the length and the cross-sectional area of P are doubled to 2ℓ and 2A, respectively (01)

(B) Given below are a few optical devices used to manipulate light.

plane mirror	glass block	prism	covex lens	concave mirror

(i) Which of the devices listed above can be used to reflect light? (02)

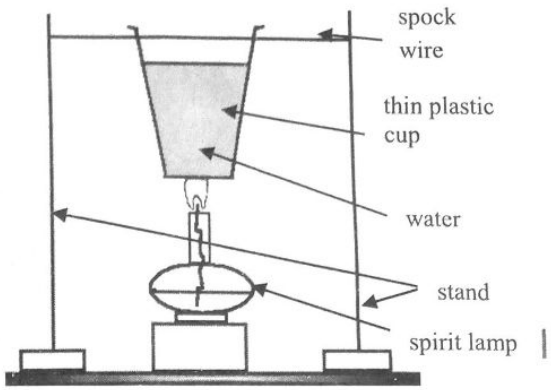
(ii) Which of the devices listed above can be used to obtain virtual and upright images? (01)

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(iii) (a) The object, 2 cm tall, is placed 15 cm away from a concave mirror with a focal length of 10 cm. Construct a ray diagram to show the formation of the image. (02)

(b) State two characters of the image formed according to the ray diagram constructed above (02)

(C) Below is a setup made using a thin plastic cup to boil water.



(i) Name the type of thermometer that can be used here to measure the temperature of the heating water. (01)

(a) Why does the temperature remain constant when water is boiling? (01)

(b) What is the term used to refer to the heat obtained by water at that moment? (01)

(ii) When a hand is brought from a side near the flame, its warmth can be felt. What is the method of transferring heat at that moment? (01)

(iii) State a reason for not melting the plastic cup (01)

(iv) If the cup contains 200 g of water, calculate the amount of heat that should be supplied to the water to raise its temperature by 20 ^{0}C. (the specific capacity of water -4200 J kg^{-1} ^{0}C^{-1}) (02)

08. (A) A group of students demonstrated the behaviour of genes using red and white pebbles by following certain steps as given below.

★ Select two vessels X and Y.

★ Place 50 red and 50 white pebbles in each vessel and mix them.

(i) Write down all possible colour combinations that can be obtained by taking one pebble from each of the X and Y vessels simultaneously. (Use R for red and r for white.) (03)

(ii) Referring to the answer given above in (i), State

(a) Homoozygous condition (b) Heterozygous condition in it (02)

(iii) Name the biomolecule which transmits characters of organisms from generation to generation. (01)

(iv) List the elements present in the biomolecule you have named above (02)

(v) Name a biomolecule other than what you have named in (iii) and write one significance of it. (02)

(B) A glass block on a rough surface was moved at an initial velocity of 2 m s^{-1}. It moved along a rectilinear path and stopped after 5 s.

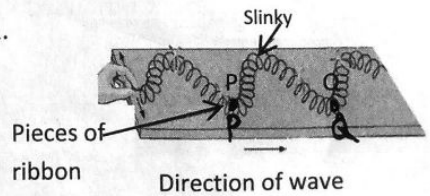
(i) Plot a velocity-time graph to describe the motion stated above. (02)

(ii) Find the displacement of the glass block (01)

(iii) Calculate the retardation of it. (02)

(iv) Name the frictional forces that act on the glass block when it is in motion. (01)

(C) As shown in the diagram, A student is shaking a slinky back and forth.



(i) How can this activity be used to demonstrate that the energy is transmitted without transmitting the matter? (01)

(ii) (a) Name the type of mechanical wave generated during this activity. (01)

(b) What is the term used to refer to the distance between P and Q? (01)

(iii) State a special characteristic of the wave named above. (01)

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09. (A) The relative molecular mass of a compound is calculated using relative atomic masses of constituting elements.

(i) Currently, what standard atomic mass unit is employed for calculating the relative atomic mass? (01)

(ii) The molecular formula of Glucose is $C_6H_{12}O_6$. Find the relative molecular mass and the molar mass of it. (C – 12, O – 16, H – 1) (02)

(iii) Find the number of moles contained in 18 g of Glucose. (02)

(B) Below are two chemical reactions denoted by the letters P and Q.

$NaOH(aq) + HCl(aq) \rightarrow NaCl(aq) + H_2O(l)$ – P

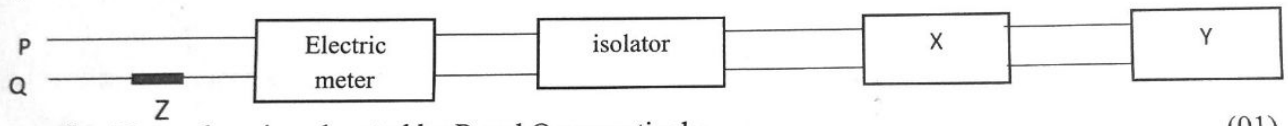
$CaCO_3(s) \rightarrow CaO(s) + CO_2(g)$ – Q

(i) According to the classification of reactions to which type does P belong? (01)

(ii) Is Q reaction exothermic or endothermic? (01)

(iii) Draw the energy level diagram for the reaction P. (03)

(C) Given below is a flow chart of a domestic electric circuit. P and Q are two wires of the supplying cable.



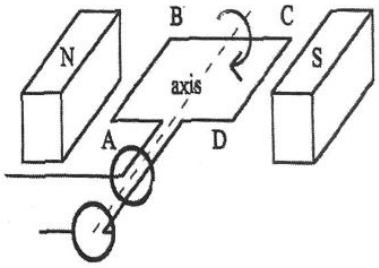
(i) Name the wires denoted by P and Q respectively. (01)

(ii) State the function of the device denoted by Z. (01)

(iii) Name the devices denoted by X and Y respectively. (01)

(D) Different electrical appliances operate based on the principles of Electromagnetism and Electromagnetic Induction.

(i) Name a device that uses the principles of electromagnetism (01)



(ii) Illustrated here is a coil rotating within a permanent magnetic field. The arrowhead denotes the direction of rotation.

(a) Regarding the direction of rotation, state the directions of the current induced on AB and CD separately. (02)

(b) Name the rule utilized to determine the directions of the induced current above. (01)

(c) Explain how the directions of electric current on both sides of the coil change when the coil reaches half rotation. (01)

(d) State two strategies to increase the magnitude of induced current produced in this device. (01)

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மத்திய மாகாண கல்வித் திணைக்களம்
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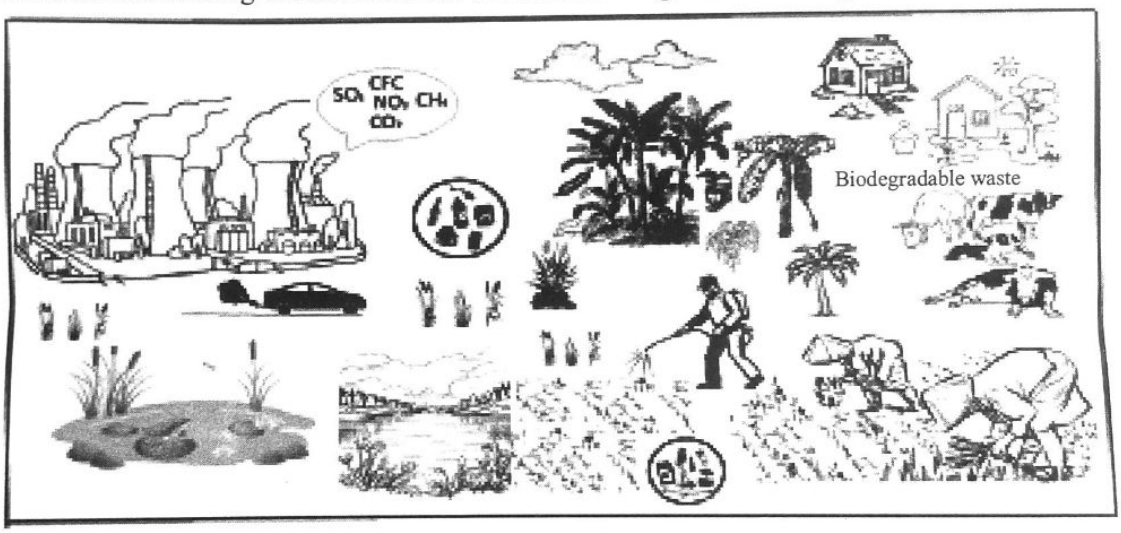
අ.පො.ස.(සා/පෙළ) පෙරහුරු පරීක්ෂණය - 2023 (2024)
க.பொ.த. (சா/த) முன்மாதிரிப் பரீட்சை 2023 (2024)
G.C.E. (O/L) Practice Test - 2023 (2024)

ශ්‍රේණිය தரம் Grade	11	Science II	34	E	II
කාලය நேரம் Time	03 Hours				

Instructions: **This paper consists of two parts A and B.**
Answer four questions in part A, in the space provided.
Of the five questions in part B answer three questions only.

Part A - Structured Essay

01. (A) The diagram illustrates a residential environment near an industrial zone. The residents fulfil most of their needs in food from the surrounding environment. Use the information given in the diagram to answer the questions.



(i) State two ways of polluting the river.

.....

..... (02)

(ii) A survey revealed the spread of chronic kidney disease and several respiratory diseases around this area. Write two possible reasons that may contribute to it.

.....

.....(02)

(iii) A concise account of problems related to the environment is tabulated below. Complete the blanks in the table. (03)

Environmental issue	Factors contributing to the issue	Adverse effects that can be created
Acid rain	.....	reduction in harvest
Eutrophication	use of fertiliser excessively	.....
.....	accumulation of chemical pollutants in the bodies	destruction of the last links of the food chains

(iv) Use of agrochemicals could cause disturbances in ecological balance. Write one reason for it.

.....(01)

(v) State the reason for having short food miles in people living in this area.

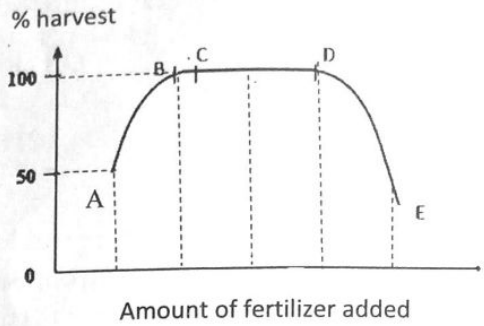
..... (01)

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(vi) Suggest a possible solution for the problem of biodegradable waste faced by the residents.

.....(01)

(B) The graph shows the change in the yield when chemical fertilizer is applied to a wheat cultivation during a field study.



(i) (a) To obtain a maximum yield, how many times of the amount of fertilizer should be applied as the amount that was applied at the beginning?

.....(01)

(b) State a difference that may occur in the harvest, if the amount of fertilizer applied to the crop is further increased beyond the instance B.

.....(01)

(c) Write an advice that can be given to a farmer from this graph

.....(01)

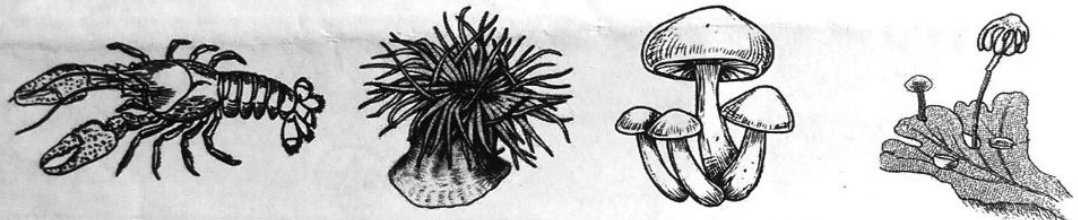
(ii) A value called lethal dose (LD_{50}) was marked on the bottles of pesticides brought to apply for the crops. What is referred to as Lethal dose?

.....(01)

(iii) The people living in this area intend to switch to sustainable agricultural practices. Write a change to be made to it.

.....(01)

02. (A) Given below are four organisms belonging to a few kingdoms.



S T U W

(i) To which domain do these four organisms belong? ..... (01)

(ii) State the kingdoms of organisms U and W.

U-..... W-..... (02)

(iii) Given below are some characteristics of the organisms illustrated above. Write the corresponding letter of the organism that matches each of the given characteristics in the space provided in front. (03)

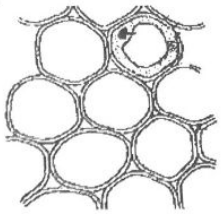
	Characteristic	the letter which denotes the organism
(a)	Photoautotrophic	.....
(b)	Possesses a cuticle made up of chitin	.....
(c)	Diploblastic and possesses a coelenteron	.....

(iv) State a method of asexual reproduction of the organism W.

..... (01)

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(B) Given below is a diagram of a simple permanent tissue which possesses isodiametric cells.



(i) (a) Name the tissue ..... (01)

(b) State a characteristic of the tissue which is not mentioned above
..... (01)

(c) State a special function carried out by these cells located in the middle of the leaf. .....
..... (01)

(ii) Name a simple permanent tissue which contains lignin as a component of the cell wall other than cellulose.
..... (01)

(C) The muscle tissue is responsible for the movements of the human body.

(i) Which muscle tissue functions voluntarily?..... (01)

(ii) (a) Which muscle tissue possesses striations? ..... (01)

(b) Draw a few cells of the muscle tissue you have mentioned in (ii) (a) in the box given below. (01)

(iii) Where in the body can striated muscle tissue be found that does not fatigue?
.....(01)

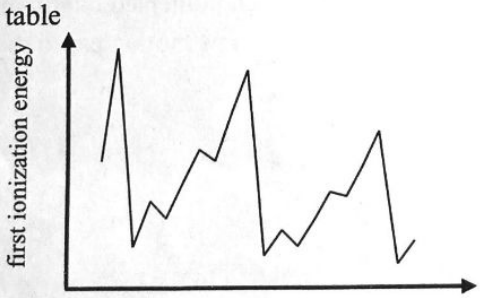
03. (A) A, D, E, G, J, L, M and Q are eight consecutive elements having atomic numbers below 20. The electronic configuration of the element L is 2,8,8 and it exists as natural gas. The symbols of the elements are not standard chemical symbols.

(i) What is the element denoted by the letter L? .....(01)

(ii) Complete the table given below using the given symbols of the elements. (03)

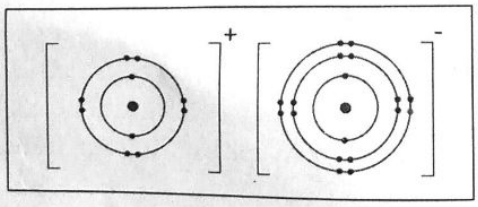
Characteristic or use	Element
Semiconducting material	(a).....
having the least electronegativity	(b).....
forms bivalent cations	(c).....

(iii) The graph given below shows the variation of the first ionisation energy of the first 20 elements of the periodic table

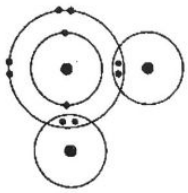


- Mark the elements L and M in the graph (02)

(B) Diagrams P and Q show the bond formation of water and sodium chloride.



P



Q

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(i) Regarding the elements P and Q,

(a) Identify and name.

P ..... Q .....(02)

(b) Write the type of bond present in each.

P ..... Q .....(02)

(ii) State a special property possessed by water due to the presence of attractive forces among the water molecules.....(01)

(iii) The metal Sodium vigorously reacts with water.

(a) State one observation that can be made when a small piece of sodium is dropped into the water.

.....(01)

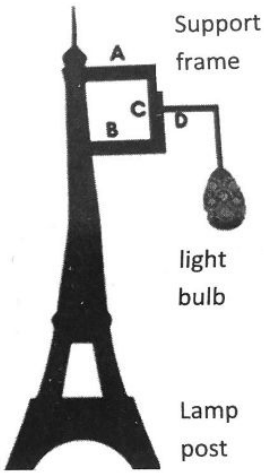
(b) Write the balanced chemical equation for the reaction between sodium and water.

.....(02)

(c) State the reason for storing sodium in paraffin oils.

.....(01)

04. (A) As illustrated a large LED bulb of 2 kg is suspended on a lamppost. (The length of A, B, C and D are 50 cm each)



(i) (a) Find the moment exerted by the light bulb on the point where rod D joints C.....

.....(02)

(b) Is that moment clockwise or anti-clockwise?

.....(01)

(ii) After removing the light bulb with the supporting frame, the mass of the lamppost was 200 kg. Calculate the pressure exerted by a single leg of that lamppost on the ground, if the area of the four legs contacting the ground is 0.4 m^2. ($g = 10\ m\ s^{-2}$)

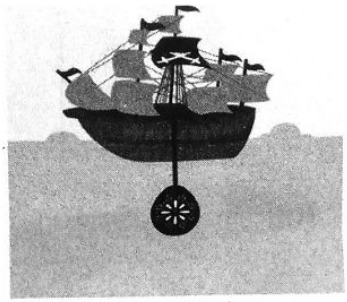
.....

.....

..... (02)

(iii) Mark the forces acting on the bulb which is suspended on rod D (02)

(B) The actual mass of an object which displaces 2 m^3 of water when immersed totally in water is 2500 kg. That object was suspended by a strong rope on a ship which remains motionless in the sea as illustrated below. (the density of seawater is 1020 kg m^{-3})



(i) (a) What is the upthrust acting on the object?

.....(02)

(b) What force acting on the rope towards up at this moment?

.....(02)

(c) What is the resulting force acting on the object if it sinks in the sea due to the breakage of its rope and is released freely?

.....(01)

(ii) Calculate the pressure exerted on the object by the seawater at a depth of 200 m in the sea.....

.....(02)

(iii) What is the kinetic energy of an object moving at a velocity of 3 m s^{-1} when it submerges?

.....(01)

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පහසුවෙන් ජයගන්න

ඕනෑම පොතක් ඉක්මනින්
නිවසටම ගෙන්වා ගන්න



| කෙටි සටහන් | පසුගිය ප්‍රශ්න පත්‍ර | වැඩ පොත් | සඟරා | O/L ප්‍රශ්න පත්‍ර | A/L ප්‍රශ්න පත්‍ර | අනුමාන ප්‍රශ්න පත්‍ර | අතිරේක කියවීම් පොත් | School Book | ගුරු අත්පොත්

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කෙටි සටහන්, වැඩ පොත්, අතිරේක කියවීම් පොත්, සඟරා
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