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மத்திய மாகாண கல்வித் திணைக்களம்
DEPARTMENT OF EDUCATION - CENTRAL PROVINCE

Grade11	G.C.E.(O/L) Practice Test Paper 2025(2026)	34	E	I
Name	Science	One hour		

Instructions :

- Answer all questions.
- Read the instructions given in the answer sheet carefully and select the most appropriate answer(1) ,(2),(3),(4) for each question. Then mark X on the corresponding number.
- Use a separate MCQ paper to answer.

In binomial nomenclature the first name refers to the,
(1) Generic epithet . (2) Specific epithet. (3) Name of the order. (4) Name of the class.

2. In which group of plants the vascular tissues **cannot** be seen?
(1) Thallus plants (2) Ferns (3) Gymnosperms (4) Angiosperms.

3. The action of which tissue is needed when grafting scion to the stock?
(1) Xylem (2) Phloem (3) Cambium (4) Cortex

4. Which products are formed when burning propane gas?
(1) Carbon monoxide and water. (2) Carbon dioxide and Hydrogen.
(3) Water and Carbon dioxide (4) Oxygen and Carbon

5. Which metal is **not suitable** to use as a scarifying metal to iron?
(1) Alluminium (Al) (2) Zinc (Zn) (3) Magnesium (Mg) (4) Copper (Cu)

6. The heat is transferred through fluids (liquids and gases) by,
(1) Conduction. (2) Convection.
(3) Conduction and radiation. (4) Convection and radiation.

7. The equivalent resistance when three equal resistors are connected parallelly is 3 Ω. The value of one resistor is,
(1) 9 Ω . (2) 6 Ω. (3) 3 Ω . (4) 1 Ω .

8. In a step down transformer input is marked as 240 V while the output is 6 V. How many turns are there in primary coil when 100 turns are present in secondary coil ?
(1) 4000 . (2) 1440 . (3) 300 . (4) 100.

9. Which pair is correct from the followings?

	Natural polymers	Artificial polymers
(1)	Protein	Nylon
(2)	Polyethene	Polyester
(3)	DNA	Starch
(4)	Teflon	Cellulose

10. A mass of 5 kg moves on a horizontal surface, with an acceleration of 5 ms^{-2} after applying a force on it. The dynamic frictional force between two surfaces is 20N. What is the force exerted on the object?
(1) 25 N . (2) 30 N . (3) 40 N . (4) 45 N

11. Which of the following characteristic feature **cannot** be considered as common to all mammals?
(1) Being warm blooded. (2) Not having nucleus in red blood cells. (3) Laying eggs (4)Having hair on the body.

12. What is the energy consumed by an electric appliance marked as 230 V/1000W, when it is working at its maximum power for 5 minutes?
(1) 1000 J. (2) 230 000 J. (3) 300 000 J. (4) 450 000 J.

13. Which of the following answers correctly describes a characteristic of meristematic tissue in plants?
(1) Having a large central vacuole. (2) Having clearly visible inter cellular spaces.
(3) Having a thick cell wall composed of lignin. (4) Cell wall is made up of Cellulose and it is very thin in nature.

See page 2

14. Which of the followings is correct regarding the biurette test which is done to identify proteins?
(1) Benedict solution is used and a brick red precipitate is obtained.
(2) Sodium hydroxide and copper sulphate are used and purple colour is obtained.
(3) Iodine solution is used and dark blue colour is obtained as the final observation.
(4) Ethanol and water are used and white colour precipitate is obtained.

15. What is the **correct** statement regarding virus?
(1) A group of unicellular organisms without a nucleus.
(2) Viruses are capable of reproducing independently outside a living host cell.
(3) The body of a virus is composed of a protein coat and either DNA or RNA only.
(4) Viral infections can be cured by antibacterial antibiotics.

16. Consider the following statements regarding cell division.
A- In meiosis the newly formed daughter cells are genetically identical to the mother cell.
B- Mitosis contributes to the growth and regeneration of tissues.
C- During meiosis the number of chromosomes in the daughter cells becomes half of the number of chromosomes in mother cell.
The correct statements are,
(1) A and B. (2) B and C. (3) A and C. (4) All A, B C.

17. The activity of two hormones named as X and Y related to menstrual cycle are given below.
X - Directly effects on releasing of ova.
Y - Responsible to increase the level of X hormone.
Accordingly, X and Y hormones are,

	X hormone	Y hormone
(1)	FSH	Progesterone
(2)	LH	Oestrogen
(3)	Progesterone	Oestrogen
(4)	LH	Progesterone

18. For which of the following processes does photosynthesis provide the least contribution?
(1) To fixation of energy. (2) To control the global warming.
(3) To maintain of water cycle. (4) To maintain of carbon cycle.

19. Consider the following statements regarding the behavior of light.
A. The laws of reflection are not applicable to the curved mirrors.
B. The velocity of light increases when it travels from denser medium to rare medium.
C. Light propagates as electromagnetic waves.
The correct statements are,
(1) A and B only. (2) B and Conly. (3) A and C only. (4) All A,B and C.

20. What is the reason for the increase of the rate of reaction, when a solid substance is powdered into particles?
(1) Increasing the distance between particles (2) Reducing the number of collisions.
(3) Increasing the surface area of reactants. (4) Reducing the surface area of reactants.

21. The following structural adaptations can be seen in alveoli to ensure the proper exchange of gases in lungs.
P. The walls of alveoli are consist of very thin single cell layer
Q. Having a web of blood capillaries around the alveoli.
R. The inner wall of the alveoli being wet.
Which of the below answers most correctly shows how the above adaptations contribute to making the process of gas exchange more efficient?

	P	Q	R
(1)	Reduce the distance of diffusion	Provide medium to dissolve gases	Increase the surface area
(2)	Reduce the distance of diffusion	Increase the area of surface of diffusion	Provide medium to dissolve gases
(3)	Increase the surface area	Increase the area of surface of diffusion	Reduce the distance of diffusion
(4)	Increase the surface area	Reduce the distance of diffusion	Provide medium to dissolve gases

See page 3

22. X is an element which contains 5 electrons in the last energy level. What is the valency of X, when it forms stable compounds with Oxygen?
(1) 3. (2) 5. (3) 5 or 3. (4) 4 or 5.

23. When a red flowered pure bred plant and a white flowered pure-bred plant were crossed, all the plants in the first (F_1) generation produced red flowers. 160 plants were obtained in the second generation, after self-pollination of plants in F_1 generation. How many of these plants would be heterozygous and how many would bear the white flowers?
(1) 80 heterozygous plants and 40 white flowered plants. (2) 80 heterozygous plants and 0 white flowered plants.
(3) 40 heterozygous plants and 0 white flowered plants. (4) 120 heterozygous plants and 40 white flowered plants.

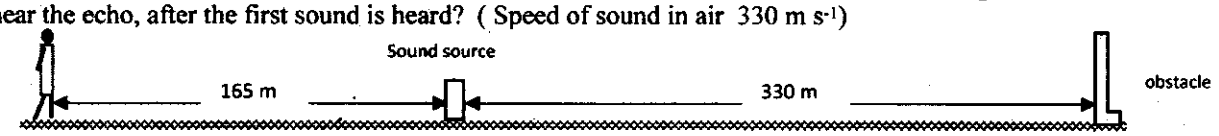
24. Which statement is correct regarding insulin?
(1) Converts glycogen present in blood into Glucose.
(2) The secretion of insulin is regulated by the pituitary gland.
(3) The blood glucose concentration is the stimulant for the secretion of insulin.
(4) High concentration of insulin is needed for the hormonal activity.

25. What is the current passing through a bulb with the resistance of 8 Ω, when connecting it to a 4V electric source?
(1) 0.2 A (2) 0.4 A (3) 0. 5 A (4) 0.8 A

26. What is the overall result, when electrolyzing a copper sulphate solution by Cu electrodes?
(1) Reduces the concentration of Cu^{2+} in the solution.
(2) The concentration of Cu^{2+} in the solution maintain in a constant level.
(3) Increase the concentration of Cu^{2+} in the solution.
(4) Deposit Copper on anode and cathode.

27. Consider the following statements regarding friction.
A- Friction occurs when two surfaces come into contact and one surface try to move relative to other.
B- The frictional force always acts on horizontal surfaces.
C- When two objects are in contact and move relative to each other the friction between them is called dynamic frictional force.
The correct statements are,
(1) Only A . (2) Only B. (3) Only A and B. (4) Only A and C .

28. A man is standing 165 m behind a sound source. There is an obstacle 330 m away from the sound source. The man hears both the direct sound from the source and the echo reflected from the obstacle. How long does it take for the man to hear the echo, after the first sound is heard? (Speed of sound in air 330 m s^{-1})



(1) 1 s . (2) 2 s . (3) 2 ½ s . (4) 3 s .

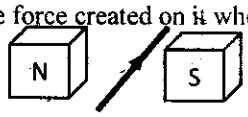
29. 25 g of salt and 100 g of water is contained in a solution. What is the mass percentage of salt in the solution (m/m%) ?
(1) 20% (2) 25% (3) 0.25% (4) 0.2%

30. There are two mixtures containing glucose dissolved in water and sand that does not dissolve in water. What are the correct methods of separating the components of these mixtures respectively?
(1) Simple distillation, filtration. (2) Filtration, Simple distillation
(3) Evaporation, Filtration (4) Filtration, Evaporation

31. Consider the following statements regarding filament bulb and LED.
A- The current flows only one direction through LED.
B- P – N junctions are used to make LED.
C- The energy loss of filament bulb is higher than LED.
The correct statements are,
(1) Only A and B. (2) Only B and C. (3) Only A and C. (4) All A, B and C.

See page 4

32. A conductor placed on a magnetic field is given in the diagram. What is the direction of the force created on it when a current is flowing in a direction of the arrow head?

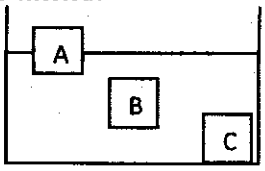


(1) Towards up. (2) Towards down. (3) To left. (4) To right.

33. What is the main and important feature that should be considered when making a three-dimensional model of H_2O molecule?

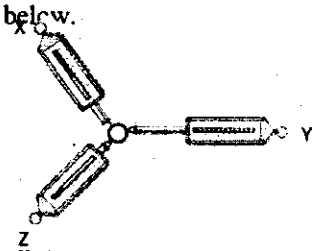
(1) Electrons which are exchanged with each other
(2) Shape of water molecule.
(3) Unshared electrons around the Oxygen atom.
(4) Difference of electronegativities of atoms.

34. When three cubes A,B and C made of different materials but with equal volumes are placed in a liquid, the way they float is shown in the figure. Accordingly, on which cubes that the same up thrust is exerted?



(1) Only A and B. (2) Only B and C.
(3) Only A and C. (4) All A, B and C.

35. X, Y and Z are three Newton balances. They are pulled to three directions by connecting to a ring kept on a horizontal surface.The quilibrium state of them is given in the diagram. Three statements given regarding the equilibrium are given below.



A- Thee spring balances lie on a same plane when the system is balanced.
B- The resultant force of X and Z spring balances is equal to the value of the Y spring balance.
C- The direction of the resultant of the X and Y balances is the same as the direction of Z balance when it is pulled.

The correct statements are,

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

36. If a student takes 100 cm^{-3} of a 0.5 mol dm^{-3} Hydrochloric acid solution and adds 100 cm^{-3} of water to it, What will be the concentration of new hydrochloric acid solution?

(1) 0.25 mol dm^{-3} (2) 0.5 mol dm^{-3} (3) 1 mol dm^{-3} (4) 5 mol dm^{-3}

37. What are the information needed to calculate the amount of heat released, when heating 50 ml of water from 25 ^0C to 27 ^0C?

(1) Initial temperature of water, mass of water.
(2) Mass of the water, specific heat capacity of water.
(3) Density of water , final temperature of water.
(4) Concentration of reactants, density of water

38. What is the correct statement regarding a solution with pH value 9.0?

(1) Strong acid and turns red litmus into blue.
(2) Weak base and turns blue litmus into red.
(3) Weak base and turns red litmus into blue
(4) Strong base and turns blue litmus into red.

39. What is the most suitable evaluation about the effects of polymers?

(1) The usage of polymers should be minimized and all the polymers cannot be recycled.
(2) Even though they have environmental impacts, all their uses are essential.
(3) Their use should be reduced by considering their importance and directed towards recycling.
(4) Except medical uses all other industrial applications should be discontinued

40. During a period of heavy rain fall three possible events are given below.

(a) Death of soil organisms such as earthworm due to soil pores becoming filled with water.
(b) Reduction in crop yield due to interference with the pollination process in plants.
(c) Increased risk of land slides due to soil becoming saturated with water.

Among the above events which have a direct impact on cycling of matter?

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

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DEPARTMENT OF EDUCATION - CENTRAL PROVINCE

Grade11	G.C.E.(O/L) Practice Test 2025	34	E	II
Name	Science	Three Hours		

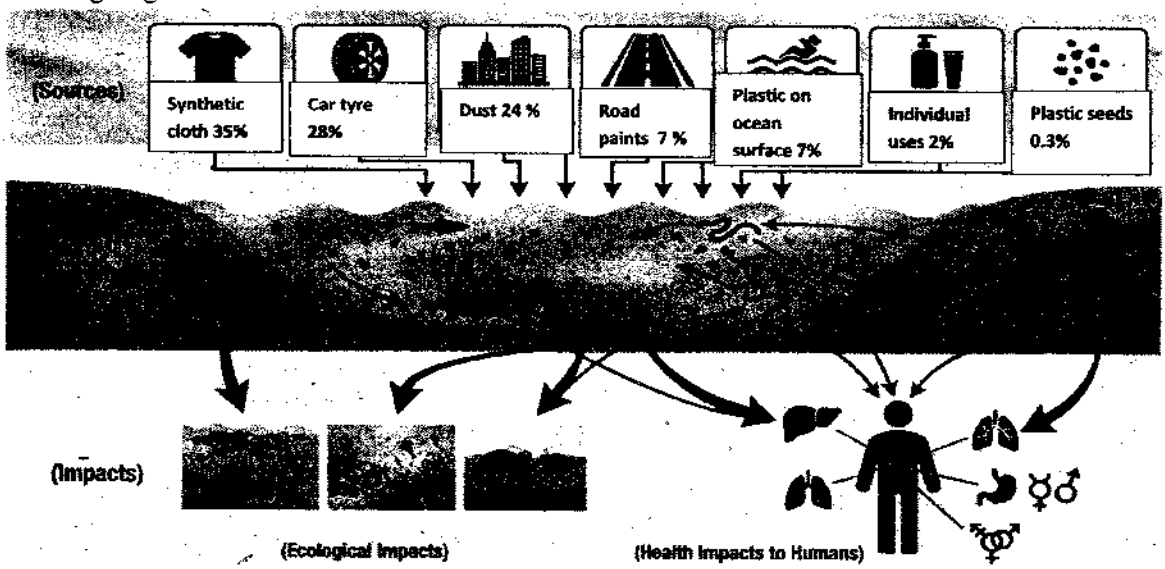
Extra reading time – 10 minutes

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

Consider : This paper consists with two parts A and B.
Answer all the questions in part A in the space provided.
Answer only three questions out of five from part B.

Part A – Structured Essay

1. (A) The following figure shows the sources which release micro plastic into the environment and the way they flow through food chains and how they cause significant impacts to the organisms. (Particle size of the micro plastics which are released to the environment is in the range of 1 μm – 5 mm and they are very small particles which are difficult to observe by the naked eye). Answer the questions given below based on the information shown in the following diagram.



(i) What is the main source of micro plastics which are added to the environment according to the figure?
..... (1m)

(ii) Using the information in the diagram, construct a four linked food chain showing how micro plastics that are added to the aquatic environment enter the human body.
..... (1m)

(iii) Name two organs or systems in human body which are damaged by micro plastics.
.... (2m)

(iv) Briefly describe one risk faced by marine eco systems due to micro plastics.
.....
..... (1m)

(B) The accumulation of plastic wastes in the environment has now become a serious environmental problem . To control this the 4R concept is used worldwide. Write the relevant step of 4R concept corresponding to the given instances.

(i)

Instance	4R step
(a) Saying "No" to plastic bags when buying goods	.....
(b) Sending plastic bottles to factories to produce plastic threads.	.....
(c) Getting into the habit of using cloth bags instead of shopping bags.	.....
(d) After food packaging plastic bottles are emptied, cleaning them an reusing them to store sugar.	.....

(4m)

(ii) What is the basic difference between "Reuse" and "Recycle"

.....

..... (2m)

(iii) State an action that can be implemented by a student in your school, to reduce the use of plastic.

..... (1m)

(iv) The following are some of the gases released into the environment during plastic production and the burning of plastic wastes.

P - Dioxins Q – Carbon dioxide R-Carbon monoxide
S- Sulfur dioxide . T -Hydrogen chloride

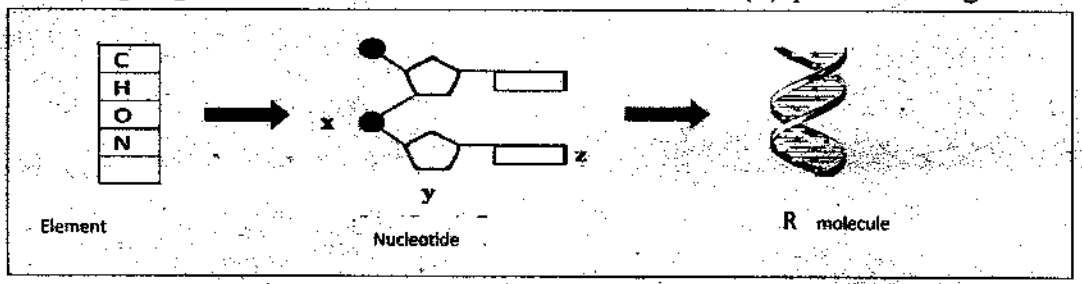
Write the English letter corresponding to the gas/ gases, which are relevant to the following descriptions.

(i) Global Warming..... (1m)

(ii) Occurrence of acid rains. ..... (1m)

(iii) Cause for the lung cancers..... (1m)

2. (A) The following diagram shows the formation of a main bio molecule (R) present in living bodies.



(i) What is the bio molecule named as R?..... (1m)

(ii) The building unit of bio molecule R is nucleotides. It is composed with three components called X, Y and Z. Name them.

X..... Y..... Z..... (3m)

(iii) One of the element needed to make nucleotides, is not given in the above diagram. Write it in the given cage. (1m)

(iv) Name an element which is present in Proteins but not in above mentioned bio molecule

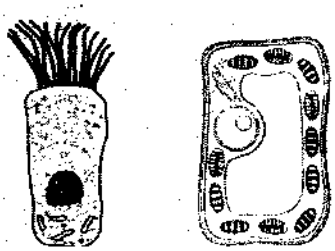
..... (1m)

(B) An animal cell and a plant cell are given in the following diagrams.

(i) Write a function of the cell type "A", which is found in the human nasa cavity.....(1m)

(ii) Name a place in the plant body where the cell "B" is found

..... (1m)



(iii) Complete the following paragraph regarding the cell "B".

(Chloroplast, Cytoplasm, Ribosome, Cell wall, Cell membrane, Cellulose, Golgi body, vacuole, Nucleus)

The outer most layer of the cell is known as (a).....It is composed of (b).....There are large number of (c) ..... in the cytoplasm where photosynthesis takes place. There is a large central (d) ..... filled with cell sap and it helps to maintain the shape of the cell. (4m)

(iv)The starch test is done to a part of a plant which contains cell "B" after exposed to sunlight.

(a) Name the chemical used in starch test..... (1m)

(b) The plant parts are boiled in water and then again boiled in alcohol. What is the reason for boiling plant parts in alcohol?..... (1m)

(c) State the colour change that can be observed in the plant part after the starch test is done.

..... (1m)

3. (A) An incomplete table is shown below, which includes the chemical substances used to produce different gases in the laboratory by reacting with acids or by heating, as well as the test carried out to identify those gases, Complete the table using the words given in the brackets.

(bubbling trough lime water, insert a burning splinter, insert a splinter, Hydrochloric acid, pieces of magnesium sodium bicarbonate, Potassium Chlorate.).

Gas	Substances used in production	Test carried out to identify the gas
H_2	(i).....	(iv) .....
O_2	(ii)	Insert a splinter
CO_2	(iii).....	(v).....

(5 m)

(B) (i) The following table shows the reactions of metals A,B,C and D with their salt solutions. (✓ - reaction is taken place. X – reaction is not taken place.)

	Salt solution of A	Salt solution of B	Salt solution of C	Salt solution of D
Metal A	X	X	✓	✓
Metal B	✓	X	✓	✓
Metal C	X	X	X	X
Metal D	X	X	✓	X

(a) State the most reactive and least reactive metals from the metals given above.

.... (2m)

(b) Which of the above metals can be extracted by heating its metal oxide?

..... (1m)

(ii) Select the correct answer from the brackets to fill the following description about acids and bases.

X is an ionic compound and it gives, (a).....(H+/OH−) ions when dissolves in water. The aqueous solution of X turns blue/ red litmus paper into (b).....(blue/ red). The pH value of solution X is in the range of (c)..... (0-6 / 8-14). (3m)

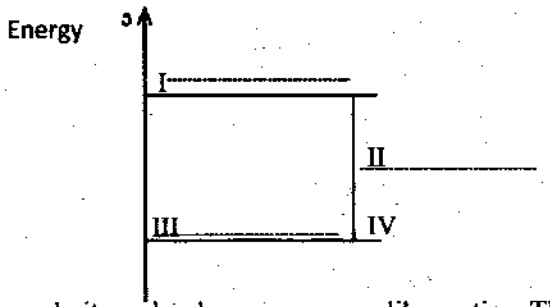
See page 4

(ii) A chemical reaction is given below.

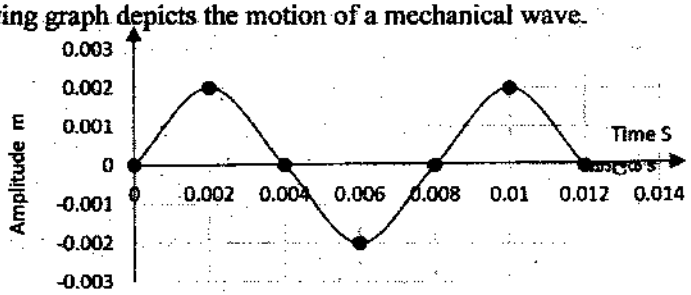
$$CaO\ (s) + H_2O\ (l) \longrightarrow Ca(OH)_2\ (s)$$

(a) Include the information of the above reaction in the energy level diagram corresponding to numbers I,II,III. (3m)

(b) Then indicate the direction in which the reaction proceeds by marking an arrowhead at the end of the vertical line number IV. (1m)



4. (A) When a vibration is illustrated by a displacement time graph, it can be shown as a wave like motion. The following graph depicts the motion of a mechanical wave.

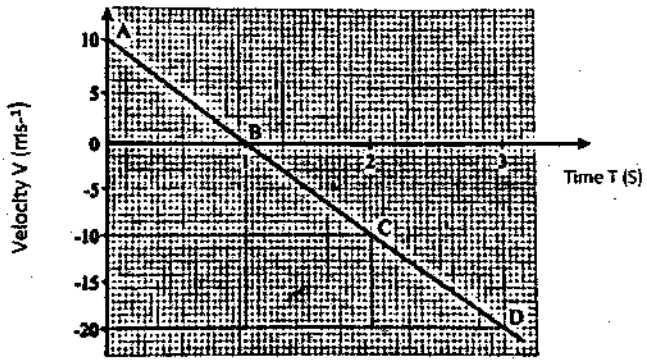


(i). What is the amplitude of the wave?
..... (1m)

(ii). What is the time taken to travel a wave length by a single wave?
..... (1m)

(iii). What is the frequency of the wave?
.....
..... (2m)

(B) An ball is projected vertically upward from a window on the upper floor of a building by a student. Then it goes up and falls to the ground at the base of the building after 3 seconds. The velocity time graph for this motion is given below. (gravitational acceleration 10 ms^{-2})



(i) Which point of the graph depicts the point where the ball reaches its maximum height?
..... (1m)

(ii) What is the time taken by the ball projected upward return to the window level?
..... (1m)

(iii) What is the initial velocity of the ball?
..... (1m)

(iv) Calculate the maximum height the ball can reach from the window level .
.....
..... (2m)

(v) If the mass of the ball is 100 g,

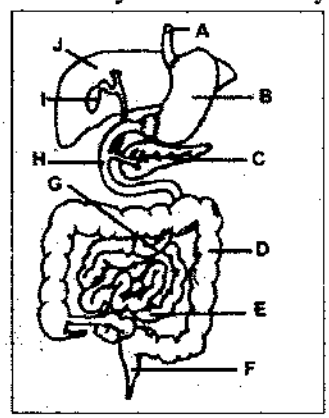
(a) What is the potential energy of the ball when it reaches its highest positions (relative to the level o window)?
..... (2m)

(b) What is the momentum of the ball when it hits the ground, if the mass of it is 100g?
..... (2m)

(vi) Find the height from the base of the building to the window?
..... (2m)

Part B – Essay

5.(A) T maintain functions of human body there must be a good interconnection between the systems in the body. Hence, every system in the human body is equally important.



(i) A part of the human digestive system is given in the figure. Consider the organ given as "B".

(a) From which type of tissue, the wall of this organ is made of? (1m)

(b) To digestion of which nutrients contained in food, this organ is mainly specialized? (1m)

(c) Name the enzyme contained in the juice secreted by C for the further digestion of the nutrients you mentioned above? (1m)

(ii) The organ "J" performs an important function among the organs associated with the digestive track. The breakdown of Protein (Amino acids) is taken place in this organ.

(a) Name the main nitrogen containing waste product that is produced by the break down of amino acids. (1m)

(b) Which organ excretes the above mentioned waste product from the body? (1m)

(c) Write a measure that can be taken to maintain the proper functioning of that organ stated in (b). (1m)

(iii) Digestion and absorption are two main functions of the digestive system.

(a) From which part given in the above figure, the absorption of end products is taken place? (1m)

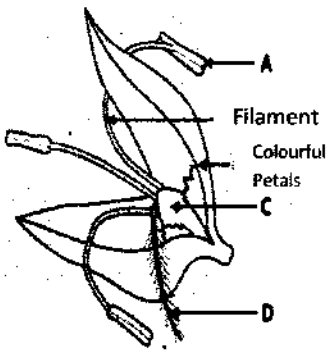
(b) Write an adaptation of this part for the proper absorption? (1m)

(iv) The energy is produced by oxidizing Glucose in the cells.

(a) State a function of ATP produced by respiration. (1m)

(b) Explain the main difference between the aerobic respiration and anerobic respiration. (1m)

(B) A longitudinal section of a flower is given in the figure. Answer the following questions based on it.



(i) Name A and C. (2m)

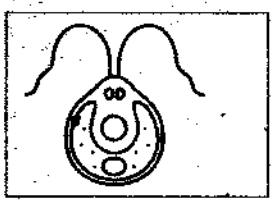
(ii) State whether the above flower is pollinated by insects or wind and write a reason to prove your answer based on the figure. (2m)

(iii) Seeds and fruits are formed after fertilization.

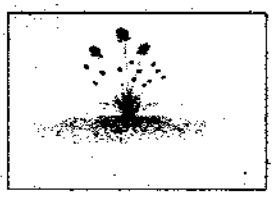
(a) Which part of the flower turns into a fruit? (1m)

(b) Write one method of seedless fruits are produced. (1m)

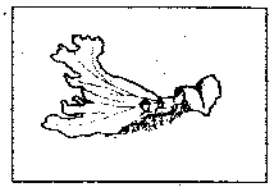
(C) Three organisms belonging to plant kingdom are given in the figure.



P



Q



R

(i) According to the three domain classification to which kingdom do plants belong? (1m)

(ii) Write a similarity between P, Q and R. (1m)

(iii) Write a main difference between Q and R. (1m)

(iv) Which of the above organisms shows the lowest adaptation to terrestrial life? (1m)

6. (A) The atomic numbers of some elements in the first 20 elements of the periodic table are given below. Consider that the given symbols are not standard.

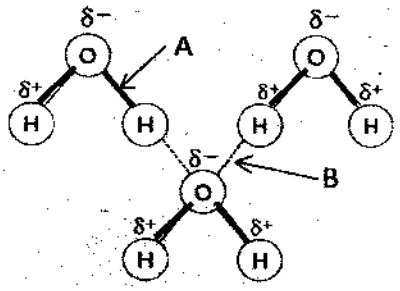
Element	A	B	C	D
Atomic number	6	8	11	17

(i).
(a) Write the electronic configuration of element D. (1m)
(b) Name the group and the period that it belongs. (1m)
(ii). Write the formula of the compound formed between C and D. (2m)
(iii). Which type of chemical bond is present in the compound mentioned in (ii)? (1m)
(iv). Draw the dot cross diagram of the compound formed by reacting A and B. (2m)
(v). ^{35}D and ^{37}D are two isotopes of element D. Write a similarity and a difference between them. (2m)

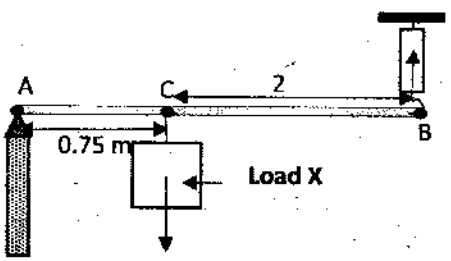
B. Magnesium reacts with Hydrochloric acid and produces Magnesium chloride and Hydrogen gas. (The relative atomic mass (H = 1, Mg = 24, Cl = 35.5)

(i). Write the balanced chemical equation for the above reaction. (2m)
(ii). Find the molar mass of Magnesium chloride. (2m)
(iii). If 2.4 g of Mg is used in this reaction,
(a) Find the number of moles of magnesium, when 2.4 g of Magnesium is used in the above reaction? (2m)
(b) Find the number of H_2 moles which is produced, if the given amount of magnesium in (iii) is completely reacted. (1m)
(c) Calculate the volume of Hydrogen gas produced from the above reaction at standard temperature and pressure, if the volume of one mole of any gas at standard temperature and pressure is 22.4 dm^3. (1m)

(C) The way of water exists in nature is given in the diagram.
(i) Name the bonds denoted as A and B. (2m)
(ii) Explain the reason for the formation of bonds given as B. (1m)



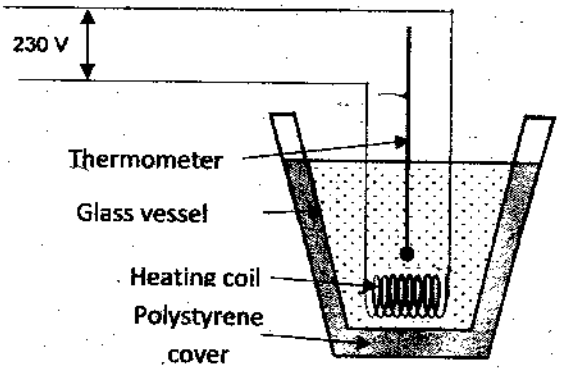
7. (A) The AB is a light rod which is balanced on an edge of a knife from A. The other end B, is attached to a spring balance. A force of 60 N is applied to the spring balance in order to keep the rod parallel to the ground. Point C is a certain point on the rod and a load is applied from it. The system is in equilibrium state.



(i) Find the weight of the load. (2m)
(ii) What is the upward force exerted on point "A". (2m)
(iii) What is the resultant force on AB rod? (1m)

(B) When the load of the above system is immersed in a water vessel, it floats on water. In this moment,
(i) What is the reading of the spring balance? (1m)
(ii) Find the up thrust exerts on the load. (1m)
(iii) What is the weight of the volume of water displaced by the load? (1m)
(iv) Draw the forces exerted by the load on a sketch diagram (1m)

(C) An instance of heating water using a heating coil which is connected to domestic electric supply (230 V) is given in the diagram. A glass vessel covered with a polystyrene cover has used to heat water. 1 kg of water with initial temperature 25 ^{0}C, is heated up to 75 ^{0}C during 3½ minutes when it is connected to electricity. (The specific heat capacity of water is 4200 J kg^{-1}^{0}C^{-1})



(i). What is the reason for covering the vessel with a polystyrene cover? (1m)

(ii). Find the heat supplied by the coil to the water. (3m)

(iii). Find the power of the coil, if the supplied electricity is used to heat the coil. (2m)

(iv). Find the current flows through the coil in this instance. (2m)

(v) It is important to keep the coil at the base of the water vessel.
(a) What is the reason for that? (2m)
(b) State the property of the metal which is taken to make the heating coil? (1m)

8.(A) There are two forms of rabbits of the same species in a place where pets are bred, one with black fur and the other one with brown fur. The dominant feature is black fur while recessive feature is brown fur.

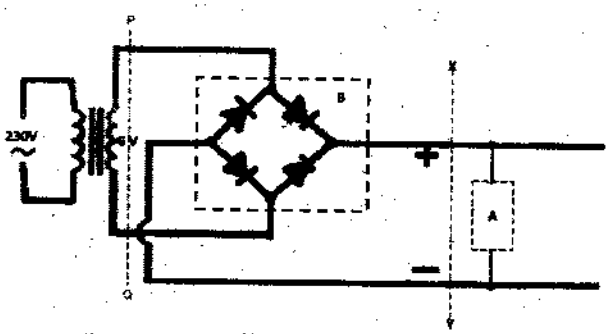
(i) Write the genotype of the rabbit with brown fur by taking dominant gene as (B),and the recessive gene as (b). (2m)

(ii) (a) When both parents are heterozygous black furred, write the genes in the gamete cells of parent rabbits. (2m)

(b) Find the genotypes of the offspring in F_1 generation using a punnet square. (4m)

(iii) A person at this place states that although both parents have black fur, 25 % of offspring are brown furred. State whether you agree with this statement or not. Explain. (2m)

(B). The given diagram shows a set up through which a voltage of 6 V and a simple current can be obtained using a step down transformer...



(i). (a) On which principle does a transformer operates? (1m)

(b) What is the ratio of the turns of the transformer given in the figure? (2m)

(ii). Is the current flowing through P and Q, direct or alternative? (1m)

(iii). (a). What is the device denoted by B? How is it created? (2 m)

(b). Which change the electric current undergoes when the current obtained from the step-down transformer, passes through B? (1m)

(iv). What is the device A used to observe the nature of the current passing through x and y terminals? (1m)

(v). You are supplied a bulb with 2 V and 4 Ω. What is the resistance of the resistor that should be connected seriesly to the bulb, to ensure that it lights at maximum brightness without damage. (2m)

9. (A) A student has used the following substances to prepare the mixtures A, B and C.

Mixture	Components	Observations
A	Water+sugar	Obtain a clear solution
B	Water + Oil	Separates in to two layers
C	Water + Sand	Deposit sand at bottom

(i) Explain what is meant by mixtures. (1m)

(ii) (a) What is the homogenous mixture from the above (A, B, C) mixtures? State is the reason for that. (1m)

(b) Write the observations when A and B mixtures are filtered separately by filter papers. (2m)

(iii) 100 cm^3 solution is prepared by dissolving 5.85 g of NaCl in water. (Na = 23, Cl = 35.5)

(a) What is the molar mass of NaCl? (1m)

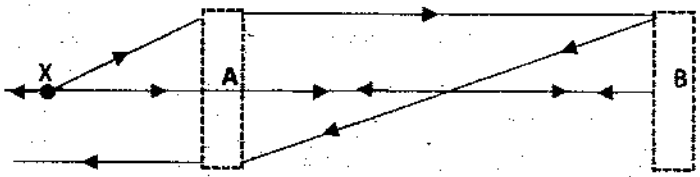
(b) Calculate the concentration of the solution. (2m)

(c) To dilute the solution up to 0.1mol dm^{-3}, to what value the volume of the solution should be increased? (2m)

(iv) (a) Write a main physical property of essential oils. (1m)

(b) What is the reason of evaporating essential oils at a temperature lower than their boiling point during steam distillation. (2m)

(B) The following is a ray diagram showing how light travels through two optical instruments A and B placed in front of a light source (X).



(i) Name the devices A and B. (2m)

(ii) Write two reasons that led to the identification of device A. (2m)

(iii) (a) Write the distance between A and B ,based on the focal length in the above instance. (2m)

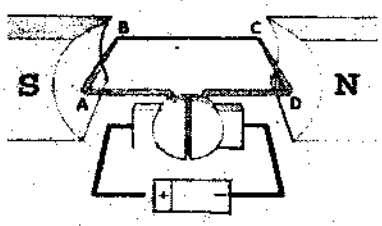
(b) Write a practical use of A. (1m)

(C) A conducting coil ABCD is placed in a magnetic field. It rotates when it is connected to two commutators and a battery.

(i) To which direction does the conducting coil is rotating? (1m)

(ii) What is the rule used to identify the rotating direction? (1m)

(iii) Write an instrument that the above rule is used. (1m)



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மத்திய மாகாண கல்வித் திணைக்களம்
DEPARTMENT OF EDUCATION - CENTRAL PROVINCE

Grade11	G.C.E.(O/L) Practice Test 2025	34	E	II
Name	Science	Three Hours		

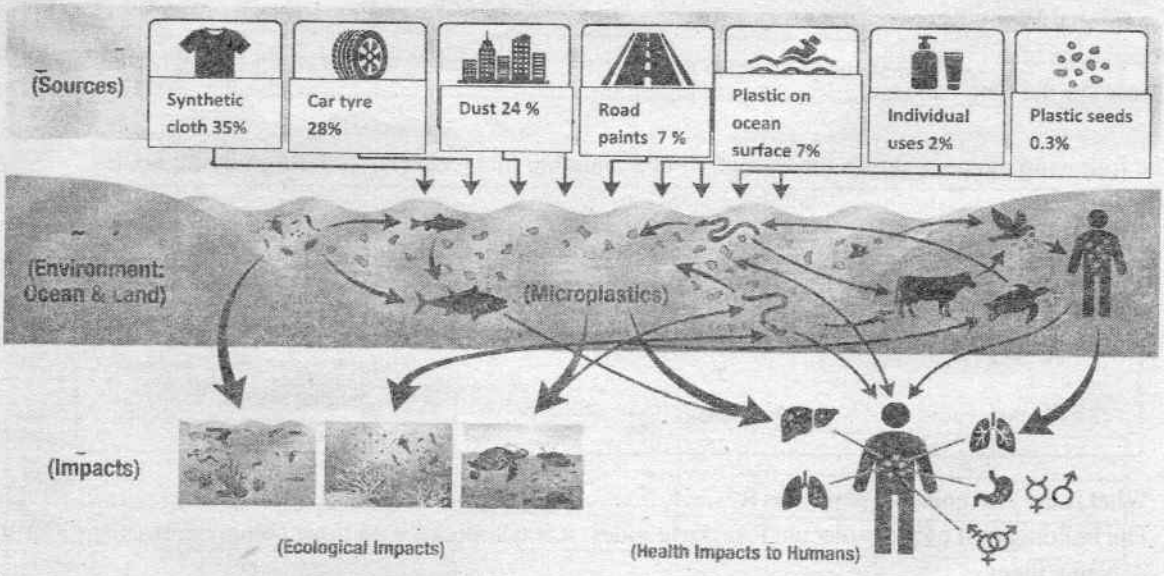
Extra reading time – 10 minutes

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

Consider : This paper consists with two parts A and B.
Answer all the questions in part A in the space provided.
Answer only three questions out of five from part B.

Part A – Structured Essay

1. (A) The following figure shows the sources which release micro plastic into the environment and the way they flow through food chains and how they cause significant impacts to the organisms. (Particle size of the micro plastics which are released to the environment is in the range of 1 μm – 5 mm and they are very small particles which are difficult to observe by the naked eye). Answer the questions given below based on the information shown in the following diagram.



(i) What is the main source of micro plastics which are added to the environment according to the figure?
..... (1m)

(ii) Using the information in the diagram, construct a four linked food chain showing how micro plastics that are added to the aquatic environment enter the human body.
..... (1m)

(iii) Name two organs or systems in human body which are damaged by micro plastics.
.... (2m)

(iv) Briefly describe one risk faced by marine eco systems due to micro plastics.
.....
..... (1m)

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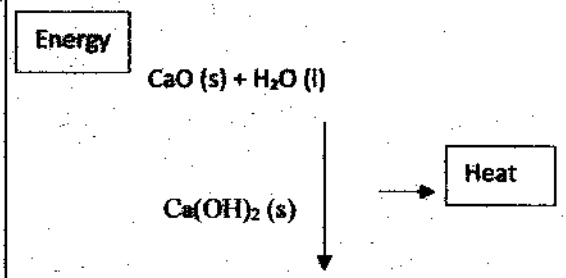
නම - ..... | Science

Answers

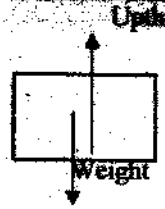
Paper I

Q.no	Answer	Q.no	Answer	Q .no	Answer	Q.no	Answer
1.	(1)	11.	(3)	21.	(2)	31.	(4)
2.	(1)	12.	(3)	22.	(1)	32.	(2)
3.	(3)	13.	(4)	23.	(1)	33.	(2)
4.	(3)	14.	(2)	24.	(3)	34.	(2)
5.	(4)	15.	(3)	25.	(3)	35.	(1)
6.	(4)	16.	(2)	26.	(2)	36.	(1)
7.	(1)	17.	(2)	27.	(4)	37.	(2)
8.	(1)	18.	(3)	28.	(2)	38.	(3)
9.	(1)	19.	(2)	29.	(1)	39.	(3)
10.	(4)	20.	(3)	30.	(3)	40.	(3)

1.	(A)	(i)		By synthetic cloths	01	15
		(ii)		Plants → plankton → small fish → big fish → man	02	
		(iii)		Liver, lungs, stomach, reproductive system	01	
		(iv)		Microplastics are entering food chains due to being mistakenly identified as food by fish	01	
	(B)	(i)		Reduce, Reuse, Replace, Recycle	04	
		(ii)		Reuse – use of materials as their original form or with a slight change Recycle- Using as a raw material by breaking it down in order to produce a new product	02	
		(iii)		Stop using plastic water bottles/ Avoid using plastic covers , sheets for lunch, use plastic free products when selecting stationaries	01	
		(iv)	(a)	Q	01	
			(b)	S	01	
			(c)	P	01	
2.	(A)	(i)		Nucleic acid /DNA	01	15
		(ii)		X - Phosphate group Y – Pentose sugar Z – Nitrogenous base	03	
		(iii)		P	01	
		(iv)		Sulfur/S	01	
	(B)	(i)		Filtering dust, micro organisms	01	
		(ii)		Leaf	01	
		(iii)	(a)	Cell wall	01	
			(b)	Cellulose	01	
			(c)	chloroplast	01	
			(d)	vacuole	01	
		(iv)	(a)	Iodine	01	

			(b)	To dissolve chlorophylls	01	
			(c)	Purple/ blue	01	
3.	(A)	(i)		Zn/Mg and HCl	01	
		(ii)		Potassium chlorate4	01	
		(iii)		$NaHCO_3$ and HCl	01	
		(iv)		Entering a burning splinter.	01	
		(v)		Bubbling through lime water.	02	
	(B)	(i)	(a)	Least- C most -B	01	
			(b)	C	01	
		(ii)	(a)	OH-	01	
			(b)	Blue	01	
			(c)	8-14	01	
		(iii)	(a)		04	
			(b)			
4.	(A)	(i)		0.002 m	01	15
		(ii)		0.008 s	01	
		(iii)		1/0.008 s = 125 Hz	02	
	(B)	(i)		B	01	
		(ii)		2 s	01	
		(iii)		10 ms-1	01	
		(iv)		1/2x1x10 = 5 m	02	
		(v)	(a)	E= mgh =0.1 kg x 10 ms-1 x 5 m= 5 J	02	
			(b)	P=mv = 100/1000 kg x 20 ms-1 =2 kg m s-1	02	
		(vi)		½ x 2x 20= 20 m	02	

5.	(A)	(i)	(a)	Smooth muscle tissue	01	
			(b)	Protein	01	
			(c)	Trypsin	01	
		(ii)	(a)	Urea	01	
			(b)	Kidney	01	
			(c)	Drinking enough water	01	
		(iii)	(a)	E/ Small intestine	01	
			(b)	For a correct adaptation	01	
		(iv)	(a)	Storing energy, releasing energy, act as a energy carrier	01	
			(b)	Aerobic respiration – Occurs in the presence of Oxygen Anerobic respiration- Occurs without oxygen	01	
	(B)	(i)		A – Stamens C- Ovary	02	
		(ii)		By wind, Bending the stigma aside / The stigma is being divided	02	
		(iii)	(a)	C	01	20
			(b)	By plant hormones	01	
	(C)	(i)		Plantae	01	
		(ii)		Having chlorophylls/ photosynthesis	01	

		(iii)		Q- It is not being a thallus R- A thallus	01	
		(iv)		R	01	
					01	
6.	(A)	(i)	(a)	2, 8, 7	01	
			(b)	Period- 3 Group VII	01	
		(ii)		CD	01	
		(iii)		Ionic	01	
		(iv)		correct dot cross diagram	02	
		(v)		Similarity – atomic number, no of protons are equal Difference different mass number, different no. of neutrons+	02	
	(B)	(i)		$Mg(s) + 2HCl(aq) \rightarrow MgCl_2(aq) + H_2(g)$	02	
		(ii)		95 g mol-	02	
		(iii)	(a)	2.4 g/ 24 g mol- 0.1 mol	02	20
			(b)	0.1 mol^{-1}	01	
			©	H2 1 mol == 22.4dm3 H2 0.1 mol== 2.24 dm3	02	
	(C)	(i)		A – Covalent B- Inter molecular forces	02	
		(ii)		Having polar molecules	01	
7.	(A)	(i)		X x0.75 = 60 x 2.75= 165/ 0.75 =220 N	02	
		(ii)		160 N	01	
		(iii)		0N	01	
	(B)	(i)		0	01	
		(ii)		220N	01	
		(iii)		220 N	01	
		(iv)		 For a suitable diagram	02	20
	(C)	(i)		To reduce the heat loss	01	
		(ii)		Q = mc θ = 1 kg x 4200 J $kg^{-1}C^{-1}$ x 50 °C = 210 000 J	03	
		(iii)		E =Pt P = E/t = 210 000 J /210 s = 1000 W	02	
		(iv)		P =VI I = P/V =1000 W/230 V= 4.35 A	02	
		(v)	(a)	Convention occurs upward only	02	
			(b)	High resistance	01	
8.	(A)	(i)		bb	02	
		(ii)	(a)	Both parents Bb	02	
			(b)	<table><tr><td></td><td>B</td><td>b</td></tr><tr><td>B</td><td>BB</td><td>Bb</td></tr><tr><td>b</td><td>Bb</td><td>bb</td></tr></table>	04	
		(iii)		According to the Mendals law it should be 25%	02	
	(B)	(i)	(a)	Electromagnetism and electro magnetic induction	01	
			(b)	6/230	02	

		(ii)		Alternate	01	20
		(iii)	(a)	Four rectifying Diodes/ rectifying bridge	02	
			(b)	Rectification/ converts alternate current in to simple current.	01	
		(iv)		Cathode ray oscilloscope	01	
		(v)		12 Ω	02	
9.	(A)	(i)		Mixtures are matter consisting of two or more components which are not chemically combined and can be separated by physical methods	01	20
		(ii)	(a)	Water and sugar mixture- obtaining clear solution	01	
			(b)	Water and sugar is a homogenous mixture. No residues on the filter paper .Sugar is completely dissolved in water there fore particles are very small. There is a residue on the filter paper.- large portion of coconut oil remains on the filter paper.	02	
		(iii)	(a)	58.5 g mol^{-1}	01	
			(b)	5.85/58.5 g mol^{-1} = 0.1 mol 0.1 mol /100 x 1000 =1 mol dm^{-3}	02	
			(c)	1000 cm^3	01	
		(iv)	(a)	Volatile Nature	01	
			(b)	Because water and essential oils are immiscible	02	
	(B)	(i)		A – Convex lens B-Concave mirror	02	
		(ii)		Converging of rays	01	
		(iii)	(a)	The focal lengths of AB is equal and twice as focal length	02	
			(b)	Simple microscope/ Telescope	01	
	(C)	(i)		Clockwise	01	
		(ii)		Flemings left hand rule	01	
		(iii)		Motor/ speaker	01	

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