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ஊவா மாகாண கல்வித் திணைக்களம்
Uva Provincial Department of Education

Practice Test 11 - 2025 (2026)

Grade 11	Science - I	Time – 1 hour

Instructions:

- *Answer all questions.*
- *In each of the questions 1 to 40, pick one of the options (1), (2), (3), (4) which is correct or most appropriate.*

01. What is the correct unit of measurement for gravitational acceleration?

1. $m\ s^{-1}$ 2. $N\ kg$ 3. $Kg\ m\ s^{-2}$ 4. $N\ kg^{-1}$

02. Which of the following is a gymnosperm plant?

1. Cashew 2. Coconut 3. Cycas 4. Croton

03. Select the answer that correctly indicates the values of e, p, and n (electrons, protons, and neutrons) in the $^{35}_{17}Cl$ ion.

1. 17, 35, 17 **2. 35, 17, 18** **3. 18, 17, 18** **4. 18, 18, 35**

04. Urea, the nitrogenous waste product excreted with urine, is produced in:

1. the kidneys 2. the blood 3. the bladder 4. the liver

05. Which of the following is NOT an endocrine gland?

1. thyroid gland 2. Salivary glands 3. Pituitary gland 4. Ovary

06. Which of the following does NOT belong to the consumer unit of a domestic electrical circuit?

1. Isolator 2. Distribution box 3. RCCB 4. MCB

07. Which chemical compound completely ionizes in an aqueous solution to release H^+ ions?

1. H_2CO_3 2. H_3PO_4 3. H_2SO_4 4. CH_3COOH

08. Chlorosis occurred in the young leaves of a certain plant. The mineral deficient in this plant could be:

1. Iron 2. Sulphur 3. Phospherous 4. Nitrogen

09. Which of the following is NOT a bisexual flower?

1. Hibiscus 2. Sesbenia 3. Pumpkin 4. Chili

10. The device that does not apply the principle of electromagnetic induction is:

1. Moving coil microphone 2. Transformer
3. DC Motor 4. Bicycle dynamo

11. The sulphate of a metal M is MSO_4. What is the chemical formula of chloride of M?

1. MCl_2 2. M_2Cl 3. M_2Cl_3 4. M_2Cl_2

12. Several statements about an element X with an atomic number less than 20 in the periodic table are given below.

- It exists in two forms: crystalline and amorphous.
- It shows both metallic and non-metallic properties.
- It is used to produce solar panels.

What could element X be?

1. Al 2. Si 3. C 4. Ca

13. What is the catalyst used in the production of NH_3 by the Haber process?

1. Vanadium pentoxide 2. Porous iron
3. Platinum 4. Nickel

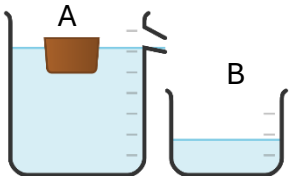
14. Select the answer that indicates only the animal phyla where bilateral symmetry is NOT found.

1. Arthropoda, Cnidaria 2. Cnidaria, Echinodermata
3. Echinodermata, Mollusca 4. Annelida, Mollusca

15. What is a feature which can be seen in cardiac muscles but not in smooth muscles?

1. Presence of cross-striations 2. Presence of intercalated discs
3. Being uninucleate 4. Being branched

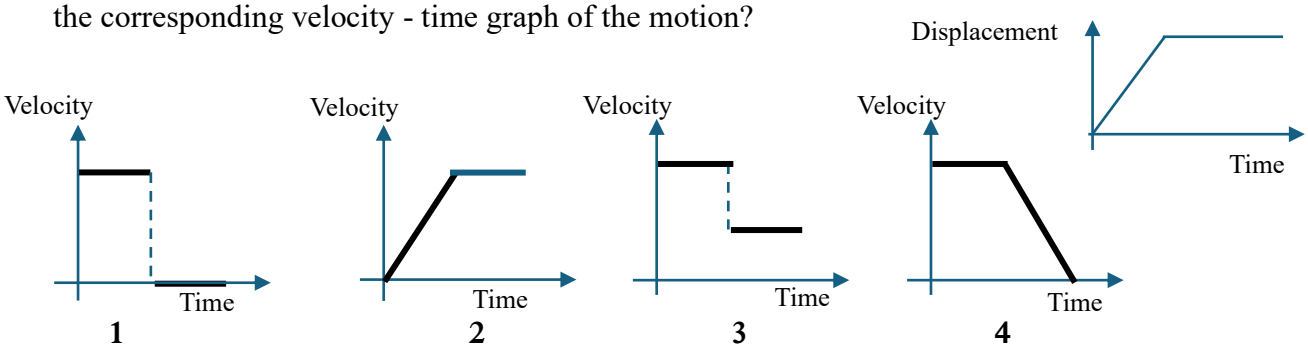
16. An object **A** was immersed in a fluid, and the displaced fluid was collected into container **B**. Which of the statement(s) regarding this is/are true?



(A). Weight A is equal to the weight of the fluid in B.
(B) Volume of A is equal to the volume of fluid B.
(C) Mass of A is equal to the mass of fluid B.

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

17. A displacement – time graph related to the motion of an object is given in the diagram. Which is the corresponding velocity - time graph of the motion?



18. Select the answer that accurately arranges the given compounds in ascending order of their pH value.

1. $HNO_3 < CH_3COOH < NaOH < NaCl$
2. $HNO_3 < CH_3COOH < NaCl < NaOH$
3. $NaOH < NaCl < CH_3COOH < HNO_3$
4. $NaOH < HNO_3 < CH_3COOH < NaCl$

19. What is the number of Nitrogen atoms contained in 30 g of Urea ($CO(NH_2)_2$)?

(Molar mass of $CO(NH_2)_2$) is 60 g mol^{-1})

1. $\frac{6.022 \times 10^{23}}{60} \times 30 \times 2$
2. $\frac{6.022 \times 10^{23}}{30} \times 60 \times 2$
3. $\frac{6.022 \times 10^{23}}{60} \times 30 \times \frac{1}{2}$
4. $\frac{6.022 \times 10^{23}}{60} \times 30 \times 1$

20. The part contributing to maintaining body balance is:

1. Cerebellum
2. Cerebrum
3. Spinal cord
4. Medulla oblongata

21. A genetic disorder caused by gene mutation is:

1. Albinism
2. Hemophilia
3. Anemia
4. Red-green color blindness

22. . Three statements regarding the process occurring in a salt saltern are given below:

(A) Rate of evaporation can be increased by using large shallow tanks.

(B) In intermediate tanks, the concentration becomes double the initial concentration.

(C) In small tanks, along with the precipitation of NaCl, compounds like $MgCl_2$ and $MgSO_4$ also precipitate.

Which of these statements are true?

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

23. What is the mass of NaOH required to prepare 250 cm^3 of a NaOH solution with a concentration of 1.0 mol dm^{-3}?

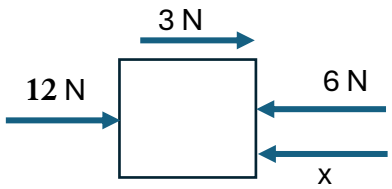
1. 40 g
2. 20 g
3. 10 g
4. 15 g

24 . The figure shows the forces acting on an object placed on a smooth surface which moves towards the East with a force of 3 N. What is the correct statement regarding this setup?

(A) The resultant force acting on the object is zero.

(B) The value of X must be 3N.

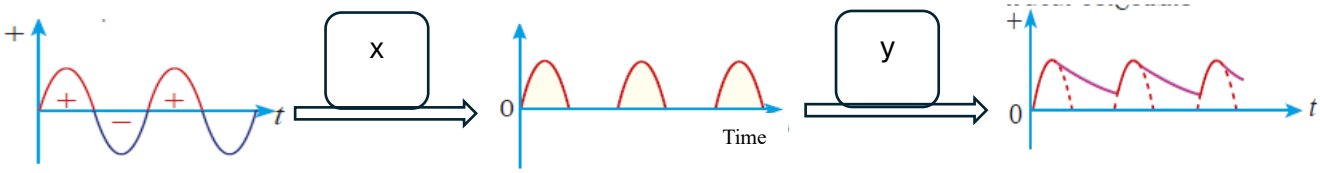
(C) The resultant force in the direction of force X is 12N.



Select the correct response:

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

25. An alternating current is passed through components **X** and **Y**. The resulting output waveforms are shown in the figure. Select the answer that correctly identifies components **X** and **Y** respectively.



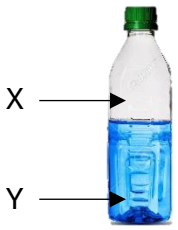
1. Diode bridge, Rectifier diode
2. Rectifier diode, Capacitor
3. Capacitor, Rectifier diode
4. Diode bridge, Capacitor

26. Select the FALSE statement regarding plant cells:

1. There are plant cells without a nucleus or chloroplasts.
2. Vacuoles are not found in some plant cells.
3. There are plant cells without cell walls.
4. Cell membranes are present in every plant cell.

27. A soda bottle was half emptied, tightly capped, and stored in a refrigerator.

Select the correct statement regarding the mole fraction of CO_2 inside the refrigerator.



1. The mole fraction of CO_2 decreases in both phases X and Y.
2. The mole fraction of CO_2 increases in both phases X and Y.
3. The mole fraction of CO_2 increases in phase X, while decreases in phase Y.
4. The mole fraction of CO_2 decreases in phase X, while increases in phase Y.

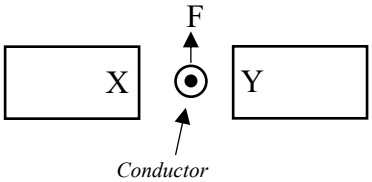
28. Consider following chemical reaction.

$$ZnSO_4 + X \longrightarrow X_2(SO_4)_3 + Zn$$

What could element X be?

1. Mg
2. Ca
3. Al
4. Cu

29. A diagram showing a conductor placed in a magnetic field is given below. X and Y are magnetic Poles. Select the correct statement made by a student regarding this:



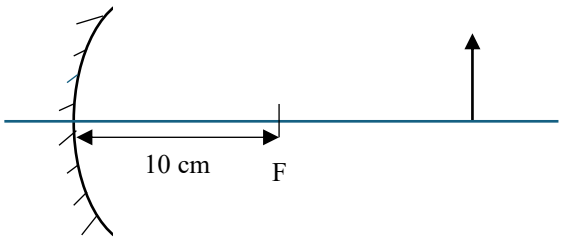
(A) X and Y must be the North Pole and South Pole respectively.

(B) To move the conductor wire downwards, the direction of the current must be reversed.

(C) X and Y must be the South Pole and North Pole respectively.

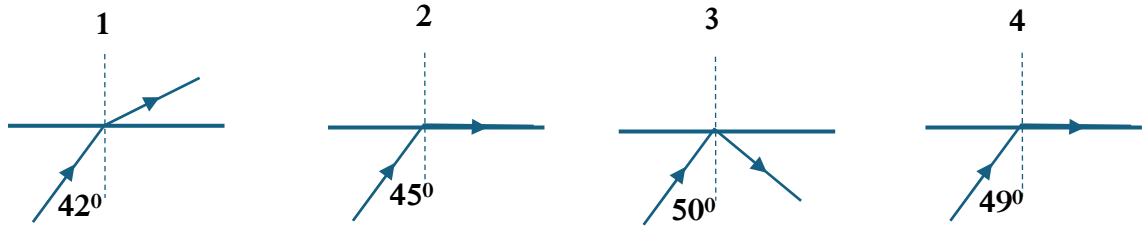
1. A and C are correct
2. B and C are correct
3. A and C are correct
4. A, B and C are correct

30. The image formed by a candle placed 20 cm in front of a concave mirror is:

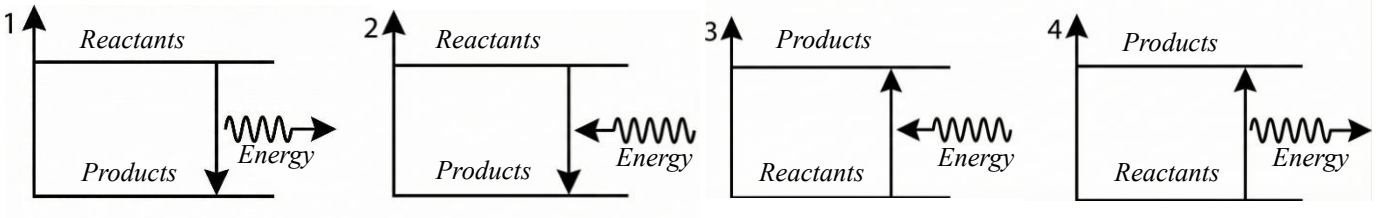


1. Real, inverted, and smaller in size
2. Virtual, erect, and larger in size
3. Real, inverted, and equal in size
4. Virtual, erect, and smaller in size

31. The following diagrams depict light rays propagating from water to air. Select the incorrect ray diagram. (The critical angle of water is 49^0)



32. Which is the correct energy level diagram for an endothermic reaction?



33. The condition where the arterial lumen narrows due to the deposition of cholesterol on artery walls is called:

1. Angina pectoris 2. Atherosclerosis 3. Hypertension 4. Thrombosis

34. Three statements regarding friction are given below:

(A) Dynamic (Kinetic) friction acts before an object moves.

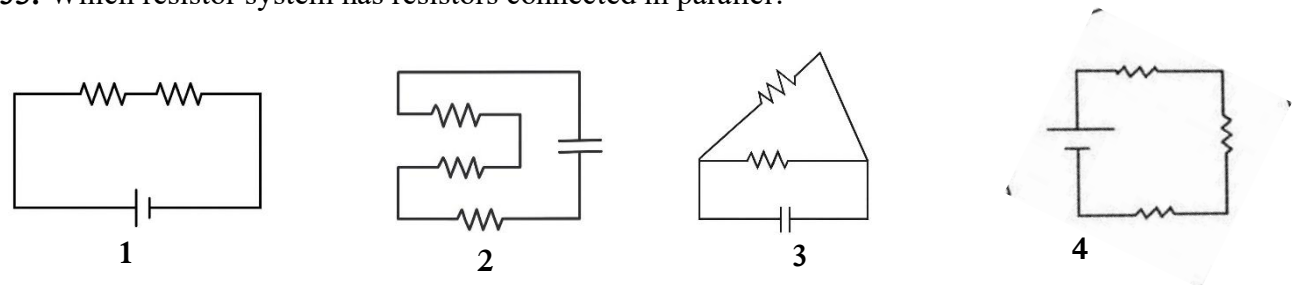
(B) Static frictional force is the maximum frictional force that can be generated on a surface.

(C) Dynamic (Kinetic) frictional force is less than the static frictional force.

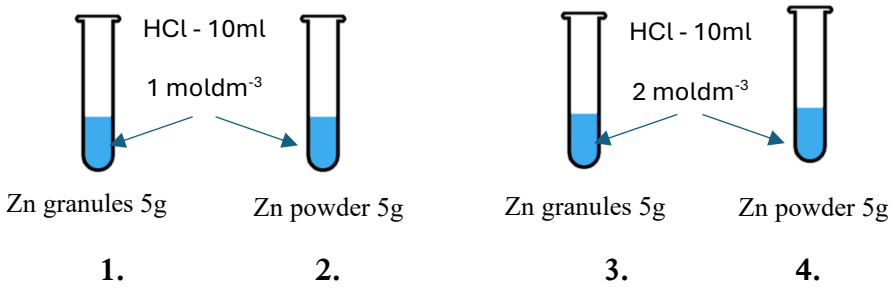
Which of these is/are correct?

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

35. Which resistor system has resistors connected in parallel?



36. A laboratory arrangement for investigating the rate of a chemical reaction is shown below. At room temperature, in which setup would gas bubbles be produced at the highest rate?



1. **2.** **3.** **4.**

37. In a monohybrid cross, the phenotypic ratio was 1:1. The two parent organisms subjected to the cross were:

1. Heterozygous and homozygous recessive organisms
2. Homozygous dominant organisms
3. Heterozygous organisms
4. Homozygous and heterozygous organisms

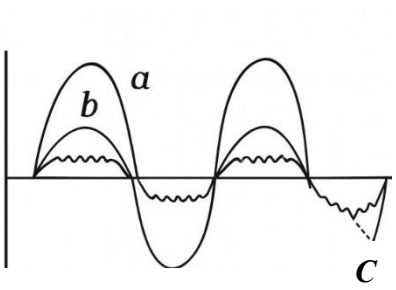
38. **The waveforms of three sound waves are shown on the same graph.**

Consider the following statements regarding the waves:

(A) The frequency of waves ***a*** and ***b*** are equal.

(B) ***C*** indicates the quality (timbre) of the sound.

(C) The loudness of wave ***a*** is greater than that of ***b*** wave.



Select the correct answer:

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

39. Nimal and Kamal were walking in a forest and found a snake belonging to the same genus as the Green Vine Snake (*Ahaetulla nasuta*). Below are the names suggested by them for this new species according to scientific nomenclature.

What is the most correct suggested name?

1. *Nasuta kamal* 2. Ahaetulla kamal 3. *Ahaetulla kamal* 4. Ahaetulla Kamal

40. Consider the information given below:

P – Population
Q – Technological advancement
R – Climate change

For a developing country to achieve its expected goals, the factors that drive the search for energy sources are:

1. P and Q only 2. Q and R only 3. P and R only 4. All P, Q, and R

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Uva Provincial Department of Education

Practice Test - II 2025 (2026)

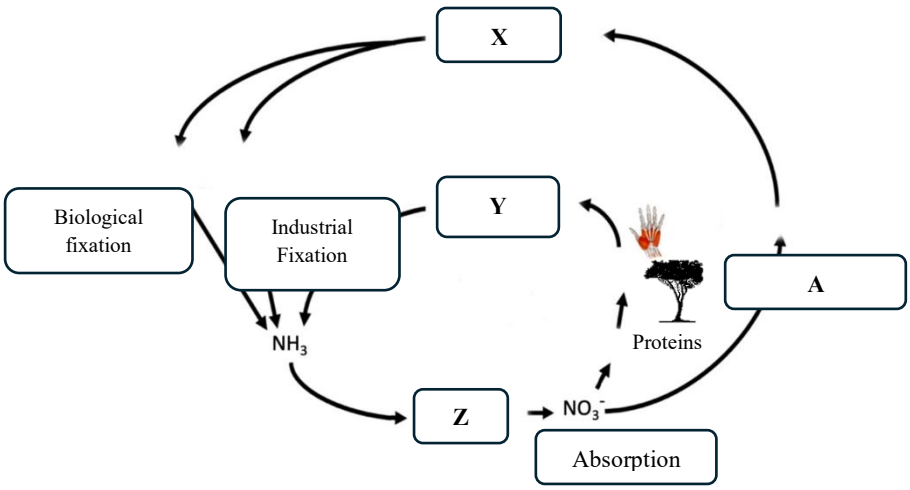
Grade 11	Science - II	Time – 03 hours

Name / Index Number: .....

- Answer all questions in Part A within the space provided.
- Answer only three selected questions from Part B.

Part - A

01. A) The continuous cyclic movement of essential chemical elements through the atmosphere, hydrosphere, and lithosphere is referred to as **biogeochemical cycles**. A diagram showing the cycle of an element labelled **X** is given below.



i. Which element is represented by **X** in this biogeochemical cycle?..... (1)

ii. Identify and name the two processes **A** and **Y.**

A - …… Y - ……..... (2)

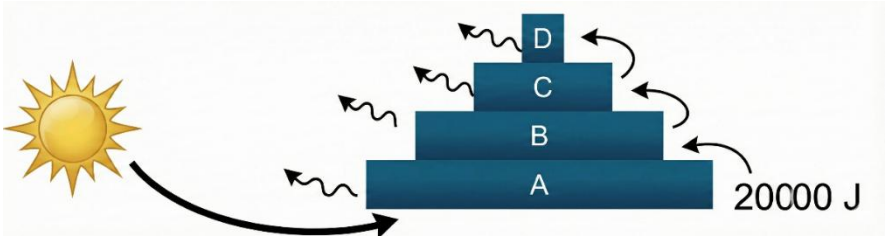
iii. Nitrifying bacteria, such as *Nitrosomonas*, first convert ammonium compounds into **Z**. What is the ion shown as **Z**? ..... (1)

iv. What is the other method of fixation for **X** that is not shown in this diagram?
..... (2)

v. Write two forms in which **X** exists within plants and animals

.... (2)

B). The transfer of matter and energy along a food chain, as well as the quantity of matter and energy present at each trophic level, can be represented graphically. Such a representation is shown below.



i. What type of ecological pyramid is this? ..... (1)

ii. What is the natural process by which energy is stored in the bodies of producers?
..... (2)

iii. If the stored energy at the basal level is 20,000 J, how much energy flows to level **D**?
..... (2)

iv. Define "Energy Dissipation".
..... (2)

02.(A) Shown below are two diagrams related to various laboratory activities demonstrating the factors required for photosynthesis and its products.

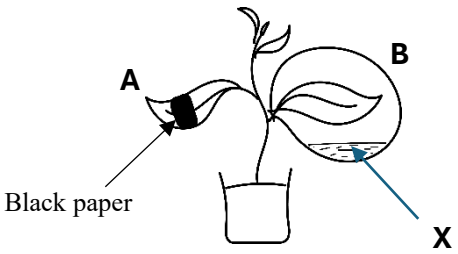


Figure 1

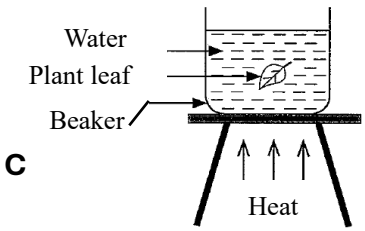


Figure 2

i. Separately write the factor required for / product obtained from photosynthesis expected to be investigated by setups **A**, **B**, and **C**. (3)

A - …… B - …….. C - ……..

ii. Name the solution used as "**x**" in setup **B** and write its function. (1)

.....

iii. According to Figure 1, the plant is kept in the dark for 48 hours before the relevant activity. What is the reason for this? (1)

.....

iv. Setups **A** and **B** are exposed to light and then subjected to the test by boiling in water as shown in Figure 2.

a) Write two other steps performed after the step shown in Figure 1 (2)

.....

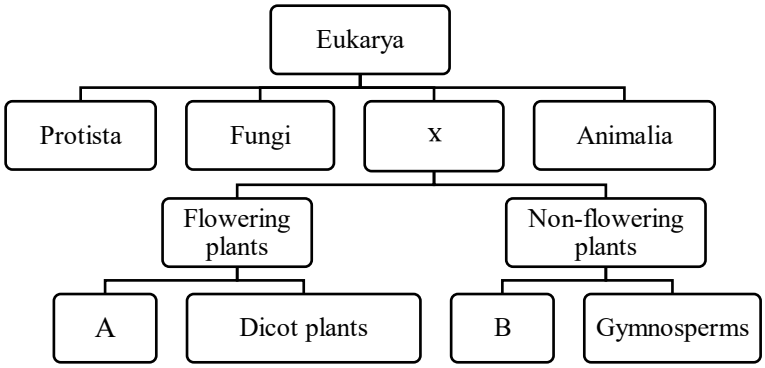
.....

b) After those two steps, small amount of brown iodine solution was added. Write an observation that can be seen in leaves **A** and **B**. (2)

A - ……..……

B - .....……

(B). Below is an incomplete chart regarding the classification of organisms.



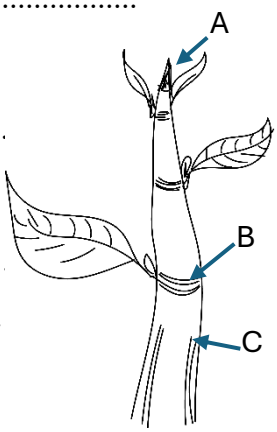
i. Write suitable terms for the blanks **A** and **X**. (1)

A - ……..……..

X - ……..……..

ii. Name a plant that is an example for **B**. (1) .....

iii. The diagram denotes the tissues in a dicotyledonous plant.



a). To which main tissue type do **a**, **b**, and **c** belong? (1)….....

b). Mention 2 features of the cells of the particular tissue. (1)

……

……

c). Identify the tissue types **a**, **b**, and **c**, and state the locations in the plant body where each is found. (3)

a - ……. b - ……. c - ……

03. (A) Several elements with atomic numbers less than 20 in the Periodic Table are shown here. (These are not standard symbols; use only the given symbols when answering).

			A	B	C	D	E
F	G	H					

i. Select and write the element suitable for the following statements. (4)

a) Monatomic gas. (.....)
b) The element forming a diatomic element with triple bonds (.....)
c) The element with highest electronegativity (.....)
d) An element forming an amphoteric oxide (.....)

ii. a). What is the formula of the compound formed by the combination of elements **F** and **C**?..... (1)

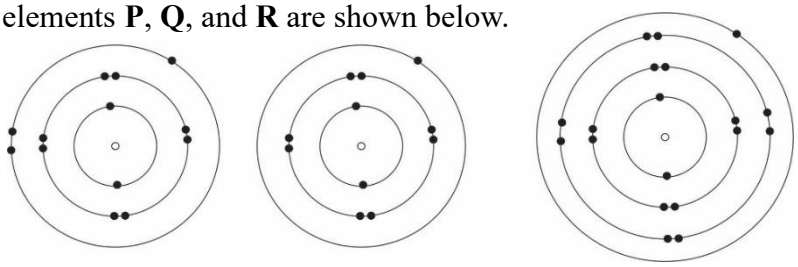
b). What is the type of bond possessed by the compound mentioned in (a) above?
..... (1)

iii. Draw the Lewis structure of the compound formed between **A** and **D** (2)

iv. Sketch the variation of First Ionization Energy against Atomic Number on the graph. (2)



(B). The atomic structures of three elements **P**, **Q**, and **R** are shown below.



P Q R

i. Among the above elements, which element has a valency of 2? (1)

.....

ii. Write the elements **P**, **Q**, and **R** in ascending order of reactivity. (2)

.....

iii. What is the method used to extract metal **Q**? (1)

.....

iv. What is the specific equipment used to separate metal **Q**? (1)

.....

04. (A) A diagram of a seesaw in a children's playground and a slide is shown below.

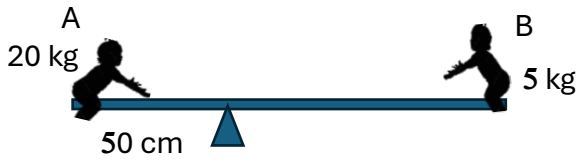


Figure 1

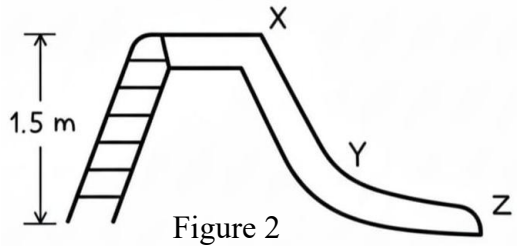


Figure 2

- Two children, **A** and **B**, with masses 20 kg and 5 kg respectively, are seated on either side of a uniform metal rod of length 200 cm (2 m) as shown in the figure. The rod is not pivoted at the exact center.

i. Mark the forces acting on the seesaw in the figure when it is in equilibrium. (3)

ii. What is the weight of the uniform metal rod of the seesaw shown in Figure 1? (2)

.....

iii. Write 2 examples for instances where a moment of force (torque) acts. (1)

.....

.....

iv. Find the potential energy possessed by child **A** after climbing to position **x** on the slide shown in Figure 2. (2)

.....

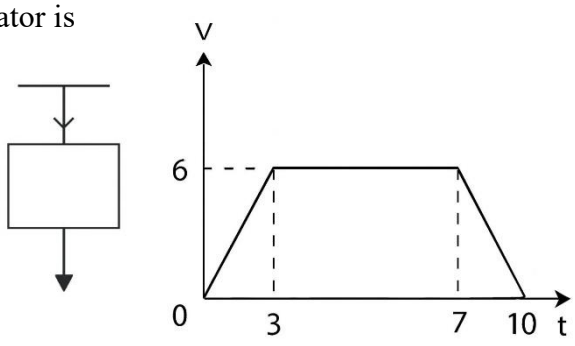
.....

v. What is the momentum of the child when he slides down along the board and reaches position **y**? (Assume no energy loss occurs). (2)

.....

.....

(B). A velocity-time graph relevant to the motion of an elevator is shown below.



i. What is the height traveled by this elevator? (2)

.....

.....

.....

.....

ii. What is the law that can describe the motion of the elevator during the time from 3 to 7 seconds? (1)

.....

iii. If the weight of the elevator is 1000 N, find the tension force created in its cable by the motor while it travels during the first 3 seconds. (2)

.....

.....

Part - B

5. (A). The two diagrams illustrate two systems in the human body.

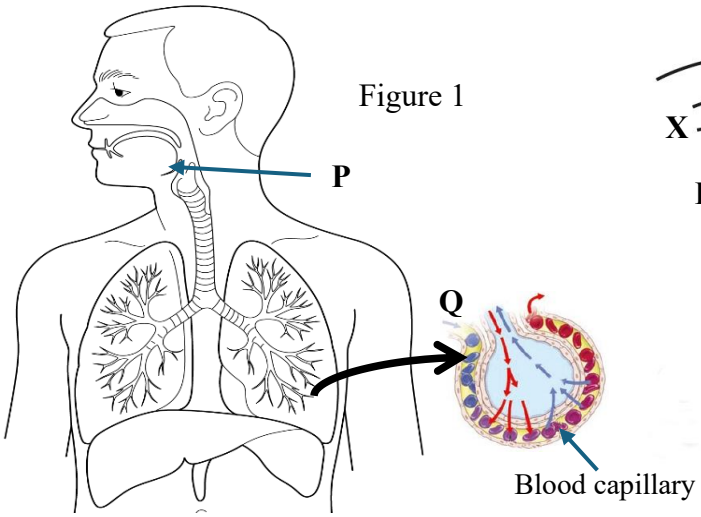


Figure 1

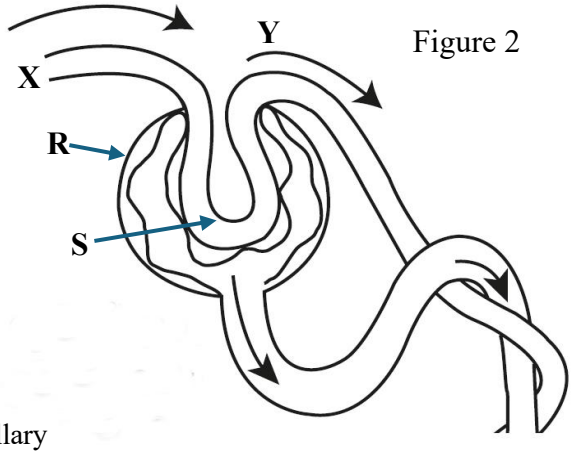
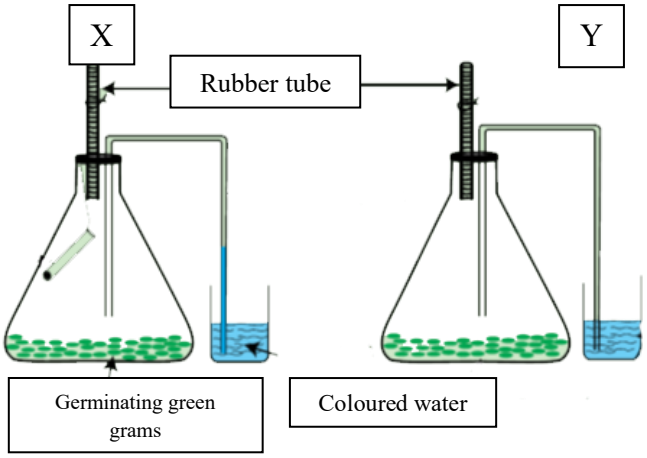


Figure 2

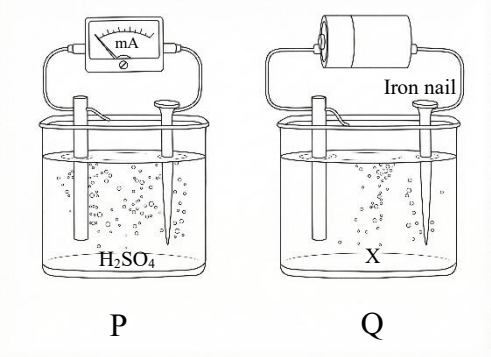
i. Name the systems/structures shown in Figure 1 and Figure 2. (1)
ii. Name the structures **P**, **Q**, **R**, **S** belonging to those systems. (2)
iii. Structure **Q** in Figure 1 is called a respiratory surface. What is a respiratory surface? (2)
iv. Name the substances entering and leaving from the blood capillaries in **Q**. (2)
v. Write 2 adaptations of **Q** to make its process efficient. (1)
vi. Write 2 differences between **X** and **Y** in Figure 2. (1)
vii. Name 2 substances that do not filter from structure **S** to structure **R**. (1)

(B). A student has prepared the apparatus shown below to demonstrate cellular respiration.



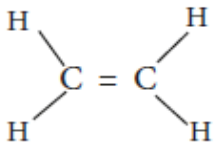
i. What is cellular respiration? (1)
ii. Name the organelle where cellular respiration occurs. (1)
iii. Write the balanced chemical equation relevant to the aerobic respiration occurring in that organelle. (2)
iv. Write the observations that can be seen in setups **X** and **Y**. (1)
v. What is the purpose of rubber tube used in this setup? (1)
vi. Write 2 assumptions made in this activity. (2)
vii. If this setup was used to demonstrate that CO_2 is released during the respiration of germinating green gram seeds, write 2 changes that should be made to setup **X**. (2)

06. (A). Two setups prepared to demonstrate the action of a simple cell and an electrolytic cell are shown in the figures below.

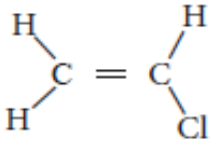


i. Identify and name cells P and Q. (2)
ii. State an observation that can be seen during the operation of cell P. (1)
iii. What is the solution indicated as X in cell Q? (1)
iv. Draw the Q cell in your answer sheet and clearly label the anode and cathode. (2)
v. Write the anodic half-reaction. (2)

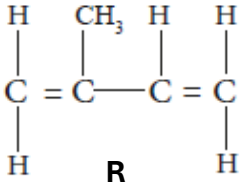
(B). The structural formulas of 3 hydrocarbons are shown below.



P



Q



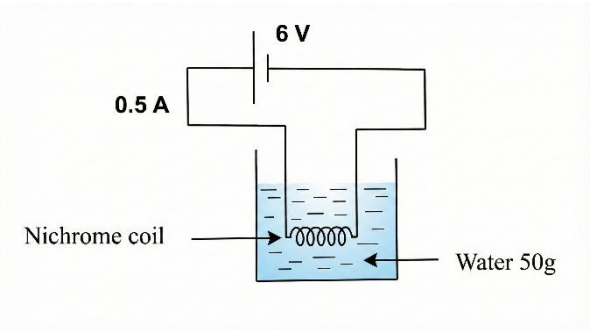
R

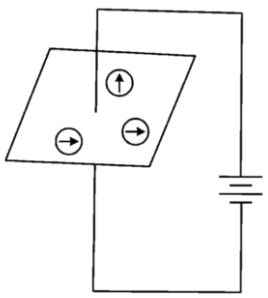
i. Identify and name **P**, **Q**, and **R**. (3)
ii. Name the natural polymer mentioned. (1)
iii. What is the polymer formed by the polymerization of **Q**? (1)
iv. Draw the structure of the repeating unit of the polymer of **Q**. (1)
v. The reaction relevant to the complete combustion of C_2H_6 is given below:

$$C_2H_{6\,(g)} + O_{2(g)} \longrightarrow CO_{2(g)} + H_2O_{(g)}$$

a) Write the above reaction as a balanced chemical equation. (1)
b) Show the enthalpy change of this reaction in an energy level diagram. (2)
c) Calculate the mass of CO_2 added to the atmosphere when 30g of C_2H_6 burns. (C=12, H=1, O=16) (3)

7. (A). Electric current can produce various effects. The figure below shows two laboratory setups prepared to investigate these effects.



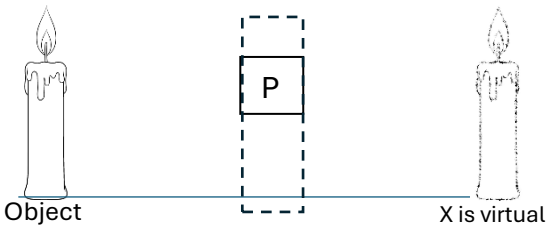


i. Name the effect of electricity expected to be investigated by Figures 1 and 2. (1)
ii. What is the resistance of the Nichrome wire coil used in Figure 1? (1)
iii. Find the power of this Nichrome heating coil. (2)
iv. Explain the reason for making Nichrome wire as a coil. (1)
v. The temperature of the water in the boiling tube is 30°C. Calculate the amount of heat required for that temperature to become 40°C. (Specific Heat Capacity of water = 4200 J kg^{-1} $°C^{-1}$) (2)
vi. Calculate the time taken for this, assuming no heat loss occurs. (2)

(B). As shown in Figure 2, when a current flows through the conductor, the indicator of the compass placed near it is deflected.

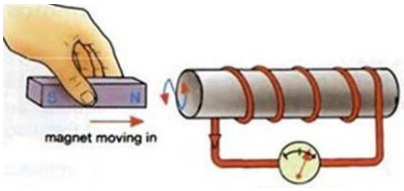
(i) Using the given diagram, indicate the direction of the magnetic field. (1)
(ii) State the law used to determine this direction. (1)
(iii) Give two examples of everyday applications of electromagnets. (1)

(C). Students carried out an activity on image formation by lenses and mirrors. The diagram below illustrates how the image is formed.



i. It was stated that the image formed in **x** is virtual, and its nature does not change even if the object distance is changed. What is the optical instrument with opaque curved surfaces that can be fixed inside box **P**?
ii. Draw a ray diagram to illustrate how the image is formed when this optical instrument is used. (2)
iii. State one situation in which this type of image formation is used. (1)
iv. Name a transparent optical instrument that can form a similar virtual, erect, and diminished image. (1)

(D). The figure shows a simple activity performed in the laboratory to study electromagnetic induction.



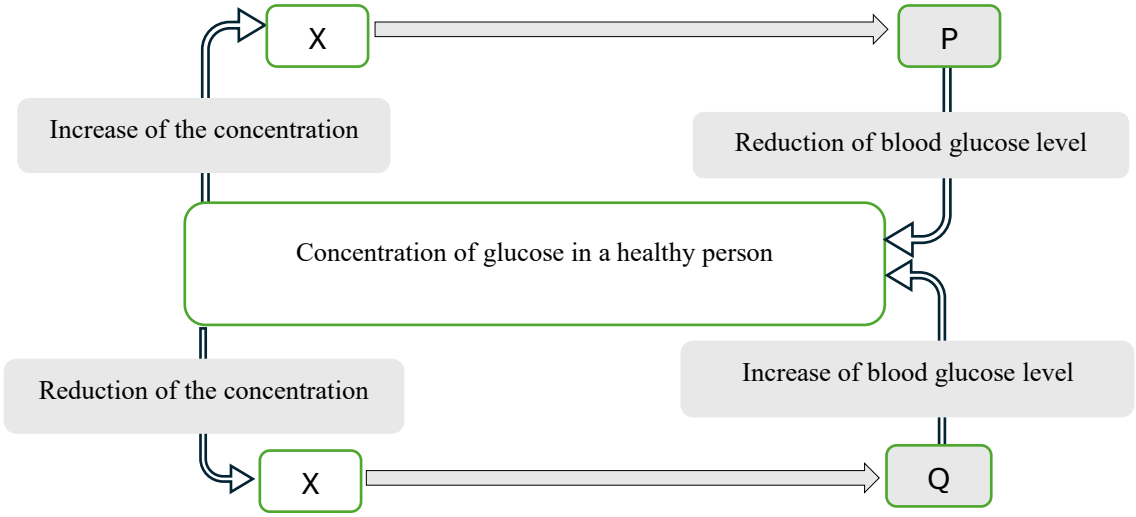
- The galvanometer doesn't show a reading only in 2 specific instances.

(i) What are those instances? (1)

(ii) State 2 things that can be done to increase the reading shown by the galvanometer. (1)

(iii) Name 2 devices that utilize electromagnetic induction. (1)

08. (A). The chart below illustrates the regulation of blood glucose levels in humans.

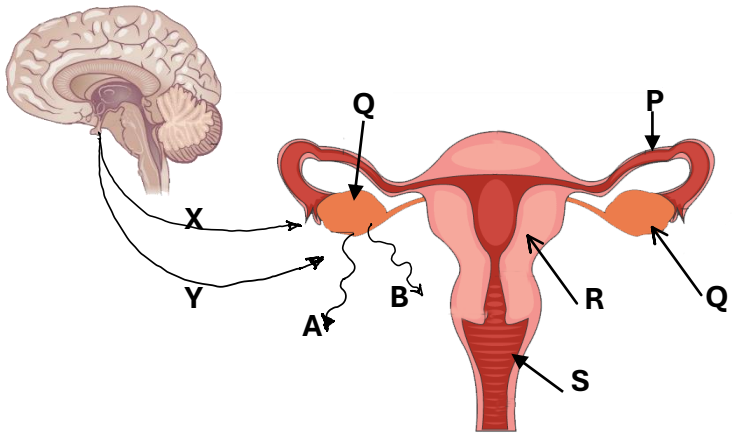


i. What is the normal blood glucose level in a healthy person? (1)

ii. Identify the organ labelled **X** that is involved in regulating blood glucose. (1)

iii. Name the hormones **P** and **Q**. (1)

iv. A deficiency of which hormone, **P** or **Q**, leads to diabetes? Explain your answer. (2)



(B). (i) Identify the hormones **X**, **Y**, **A**, and **B** relevant to processes **i–iv** given below, and write the corresponding letter. (2)

i. Hormone **X** stimulates the primary follicles in **Q**.

ii. Hormone **Y** triggers ovulation from **Q**.

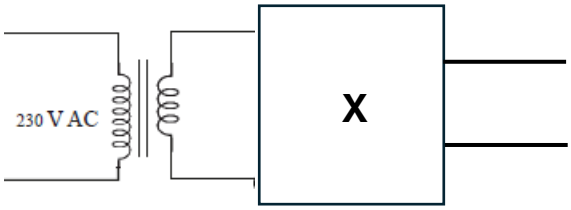
iii. **A** promotes the development of the wall of **R**.

iv. **B** stimulates the glands in the wall of **R** to become active and secretory.

(ii) Name the structures **P**, **Q**, **R**, and **S**. (2)

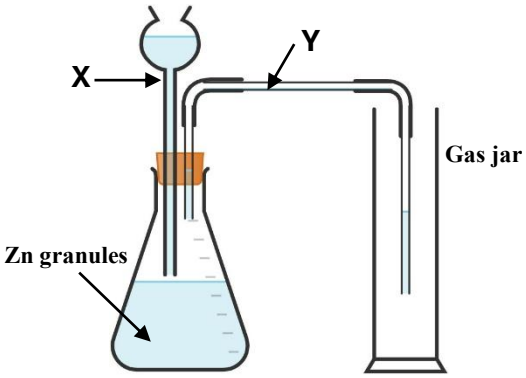
(iii) State two other hormones secreted by the glands that produce **X** and **Y**. (1)

(C). The mains electricity supplied to a house from the national grid is **230 V** at a frequency of **50 Hz**. However, a computer connected to this supply operates at **12 V**. The figure below shows a section of the components in the power pack used for this purpose.



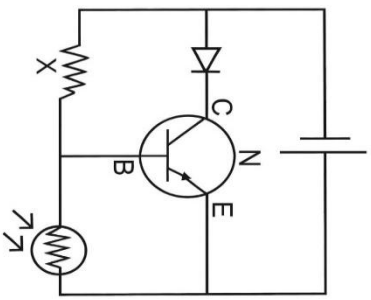
i. Name the device used for this purpose. (1)
ii. State the principle on which it operates. (1)
iii. Determine the number of turns in the secondary coil of the device shown in the figure. (2)
iv. Assuming that there is no energy loss in the device, if a current of **5 A** flows through the primary coil, calculate the current in the secondary coil. (2)
v. In which coil of this device should thicker wires be used? (1)
vi. Justify your answer to part (v). (2)
vii. State one electronic component that could be present in the section marked **X** of the power pack. (1)

09. (A) The figure below shows an apparatus used to prepare a sample of hydrogen gas using **dilute hydrochloric acid (HCl)** and **zinc (Zn)** metal.



i. Identify the apparatus labelled **X** and **Y**. (2)
ii. State two defects in the above setup. (2)
iii. Redraw the correct apparatus arrangement after correcting the defects you mentioned in part (ii). (2)
iv. Name the gas collected in the gas jar. (1)
v. State the test used to identify this gas and the expected observation. (2)
vi. Mention one industrial use of this gas. (1)

B). The diagram below shows a circuit arranged so that a small LED lamp switches on automatically at night when the mains electricity supply is interrupted in a child's bedroom.



i. State one fault in the circuit shown in the figure. (1)
ii. Identify the components labelled **x**, **y**, and **z** in the circuit diagram. (3)
iii. State the purpose of component **x** in the circuit. (1)
iv. Explain how the LED lights up when the main electric bulb is switched off. (2 marks)
v. If the circuit is to be powered using the household AC mains supply instead of the 3 V battery, name three components that should be included in the circuit. (3)