# Provincial Department of Education
# Northern Province

## Third Term Examination – 2025

## SCIENCE I

| Grade 11 | 34 T I | Time : 1 hour |
|---|---|---|

**Instructions**

- Answer all questions
- For each of the questions numbered 1to 40, select the correct or most appropriate answer from the numbered choices (1), (2), (3), and (4)
- Mark an "X" in the Circle corresponding to the number of your answer for each questions on the answer sheet provided to you

## Part 1

1. Which of the following quantities has contain magnitude only?
   (1) Weight (2) Acceleration (3) Pressure (4) Force

2. What type of tissue is characterized by the presence of intercalated discs?
   (1) Skeletal muscular tissue (2) Cardiac muscular tissue
   (3) Smooth muscular tissue (4) nervous tissue

3. Which of the following plants produces seeds but not flowers?
   (1) Ferns (2) Grass (3) Pinus (4) Coconut

4. Metabolic waste product formed in mitochondria is;
   (1) urea (2) Carbon dioxide (3) lactic acid (4) Creatinine;

5. Which of the following pairs of substances, will give a solution when mixed each other?
   (1) Sugar + Coconut oil (2) Common salt +kerosene oil
   (3) Water + Ethanol (4) Hydrogen chloride + liquid ammonia

6. That element that forms an oxide exhibiting both acidic and basic properties is?
   (1) H (2) $Na$ (3) $Al$ (4) $N$

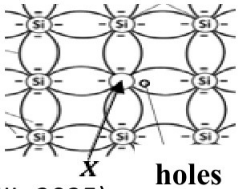
7. What is the unit used to measure frequency in terms of fundamental quantities?
   (1) $s^{-1}$ (2) $s$ (3) $m$ (4) $m^{-1}$

8. What is the colour of the methyl orange indicator in a basic solution?
   (1) Pale red (2) Red (3) Orange (4) yellow

9. Which sequences shows the increasing order of complicity in a multicellular organism?
   (1) Cell → Organ → Tissue→System (3) Cell→ Tissue → Organism → System
   (2) Cell→ Tissue→ System → Organism (4) Cell → Organ→ System → Tissue

10. How often does ovulation occur from a human female's ovary?
    (3) 14 Days (2) 28 Days (3) 42 Days (4) 56 Days

11. The figure shows the lattice of an impurity- doped silicon semiconductor. The element indicated by 'X' in the lattice is?
    (1) $B$ (2) $Si$ (3) $Ge$ (4) $P$



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12. Which of the following blood cells contains granules?
(1) Red blood cells (2) Lymphocyte (3) Monocyte (4) Neutrophils

- 13, 14 Questions based on the following equation
$2\,H_2O_{2(l)} \rightarrow 2H_2O_{(l)} + X$

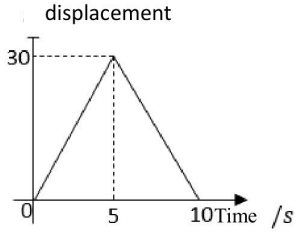
13. The type of chemical reaction and the product labeled **'x'** are, respectively

| | **Reaction type** | **Product *X*** |
|---|---|---|
| (1) | Single displacement | Oxygen |
| (2) | Chemical decomposition | Oxygen |
| (3) | Single displacement | Hydrogen |
| (4) | Chemical decomposition | Hydrogen |

14. The substance that can be used to decrease the rate of chemical reaction in this reaction is?
(1) $KMnO_4$ (2) $MnO_2$ (3) $Pt$ (4) $H_2SO_4$

15. What is the amount of work done, when an object of $4kg$ mass is lifted to a height of 5m? (Gravitational acceleration $g = 10m\,s^{-2}$)
(1) 20 J (2) 40 J (3) 50 J (4) 200 J

16. The motion of an object over 10 seconds is given by the displacement-time graph. Based on the graph, select the correct statement about the object's motion.




(1) The object accelerated for the first 5 seconds and then decelerated for the next 5 seconds.
(2) It traveled with the same velocity in the first 5 seconds and the next 5 seconds
(3) The average speed of the object is $6\,m\,s^{-1}$ and the average velocity is $0\,m\,s^{-1}$
(4) The total distance traveled by the object and its displacement are equal.

17. Consider the following characteristics of an invertebrate organism
$A-$ Have a radial symmetry
$B-$ Triploblastic
$C-$ Asexual reproduction is done by budding.
Which of the above characteristics belong to the Phylum Echinodermata?
(1) $A, B$ (2) $B, C$ (3) $A, C$ (4) $A, B, C$

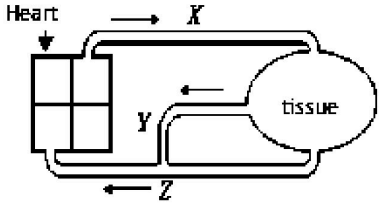
18. The suitable property of a substance which considered a weak acid is?
(1) It is an acid that does not dissolve completely in water (2) It is an acid that partially ionizes in water
(3) Its PH value is close to 7 (4)It releases $OH^-$ ions in an aqueous solution

19. which vitamin causes deficiency symptoms of anemia in humans?
(1) Vitamin $A$ (2) Vitamin $B$ (3) Vitamin $C$ (4) Vitamin $D$

20. What is the percentage of hydrogen by mass in one molecule of methanol $(CH_3OH)$?
$(H = 1, C = 12, O = 16)$
(1) 12.5% (2) 25% (3) 50% (4) 75 %

21. The formulae of the sulphate ***X* is *X* $SO_4$. X** belongs to period three.(3).Find out the electrons present in the outer most shell of element **X**
(1) 1 (2) 2 (3) 6 (4) 7

22. The figure shows the schematic diagram of the human blood circulatory system. The direction of flow of liquid fluid is indicated by the arrows. What is labeled as $Y$?




(1) Capillary tube (2) portal vein
(3) Lymph vessels (4) Venule

23. The increasing order of reactivity of the elements $Zn, Sn, Au, Cu$
(1) $Zn > Sn > Cu > Au$ (2) $Au > Cu > Sn > Zn$ (3) $Au < Cu < Sn < Zn$ (4) $Zn < Sn < Cu < Au$

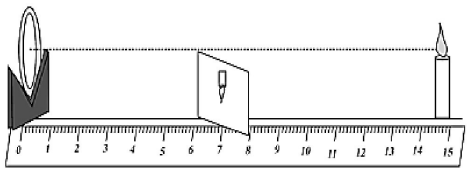
24. Express in terms of mass/volume(m/v) for the solute composition of $0.25 mol\ dm^{-3}$ concentration of an aqueous $NaOH$ solution? (Relative molecular mass of $NaOH$ is 40.)
(1) $10\ g\ dm^{-3}$ (2) $20\ g\ dm^{-3}$ (3) $30\ g\ dm^{-3}$ (4) $40\ g\ dm^{-3}$

25. Which change does **NOT** occur in a person's body when facing emergency situation?
(1) Increases heart beat rate and rate of aeration of lungs (2) Increases size of pupil
(3) Increases peristalsis (4) Inhibits saliva secretion

26. The figure shows how the image of a lighted candle is obtained on a screen in front of a concave mirror with a focal length $(f)$ is 4.5 $cm$.When the flame is moved towards the mirror, the change in image distance and image size is appropriately described by

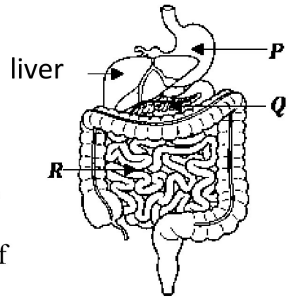
.

| | Image distance | Image size |
|---|---|---|
| (1) | increases | Decreases |
| (2) | Decreases | increases |
| (3) | increases | increases |
| (4) | Decreases | Decreases |



27. Which of the following statement is **incorrect** regarding the physical quantities of an ultrasonic wave with a frequency of 40 000 $Hz$ when it travels from air in to water?
(1) The speed of the ultra-sonic wave increases. (2) The wavelength of the ultra-sonic wave increases.
(3) The frequency of the ultra-sonic wave does not change. (4) The amplitude of the ultra-sonic wave increases.

- Question numbers28 and 29 are based on the following sketch of the human digestive system.

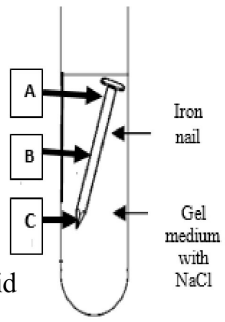



28. What change will be occurring in lipid food does the bile produced by the liver?
(1) Performing mechanical digestion (2) Neutralizing acidity
(3) Causing alkalinity. (4) Undergoing chemical digestion.

29. If the organ labeled 'Q' is removed from a person's body through surgery, the digestion of which nutrient substance will be immediately and severely affected?
(1) Protein (2) Carbohydrates (3) Lipids (4) Vitamins

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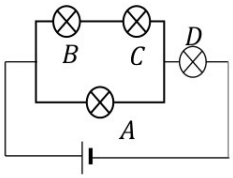
30. A setup prepared in the laboratory to demonstrate rusting of iron is shown in the fiqure.in this setup, which region from the regions $A, B, C$ of the test tube does the following reaction mainly occur.?
$Fe_{(s)} \rightarrow Fe^{2+}_{(aq)} + 2e$
(1) In region $A$
(2) In region $B$
(3) In region $C$
(4) In regions $A, B, C$




31. If tall plants are dominant over dwarf plants in garden pea plants, which parental pair in a monohybrid cross will produce tall and dwarf plants in an equal ratio?
Tall plant is denoted by $T$
(1) $TT \times tt$ (2) $Tt \times Tt$ (3) $Tt \times tt$ (4) $tt \times tt$

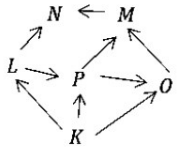
32. The common formulae of alkane is $C_nH_{2n+2}$. The octane (alkane) contains 8 carbon atoms. what is the formulae of octane?
(1) $C_8H_8$ (2) $C_8H_{14}$ (3) $C_8H_{16}$ (4) $C_8H_{18}$

33. Four bulbs (A, B.C, D) of equal resistance are connected in a circuit as shown in the figure. In which circumstance will the brightness of the bulbs further increase?



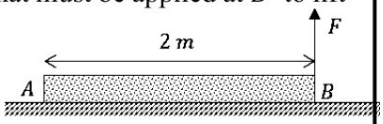

(1) Remove bulb $A$ from circuit
(2) Remove bulb $B$ from circuit
(3) Remove bulb $D$ from circuit
(4) Remove bulb $B, C$ from circuit

34. A food web found in an ecosystem is shown in the figure. Which organism in this food web is most likely affected by the concentration of heavy metals and persistent organic pollutants?




(1) $O$
(2) $P$
(3) $M$
(3) $N$

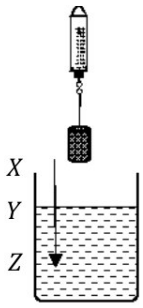
35. $AB$ is a uniform solid rod of mass $4kg$. What is the magnitude of the minimum force that must be applied at $B$ to lift it about point $A$ ? (Gravitational acceleration $g = 10\ ms^{-2}$ )

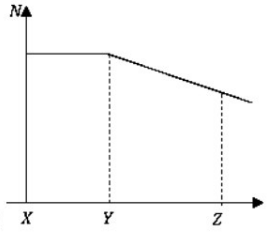


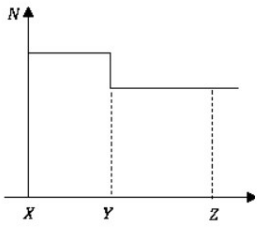

(3) $80\ N$
(2) $40\ N$
(3)$20\ N$
(4) $10\ N$

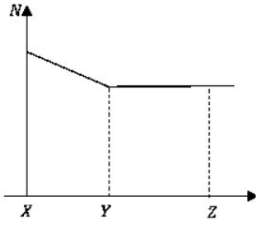
36. When heat is suppled to a metal solid,
(1) The vibrational kinetic energy of the particles increases, but their average kinetic energy decreases.
(2) The amplitude of vibration of the particles increases, causing its volume to increase.
(3) As the size of the solid increases, its density also increases.
(4) The movement of free electrons decreases as the temperature increases.

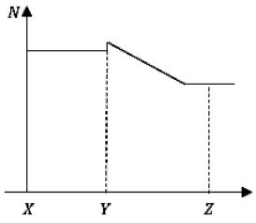
37. A metal block weighing $16N$ was fully submerged in a beaker of water along paths $X, Y, and Z$ while connected to a newton spring balance. Which graph appropriately shows the variation in the reading of the Newton spring balance in this scenario?



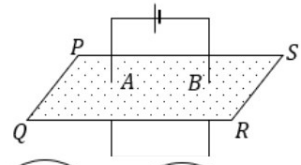

(1) 

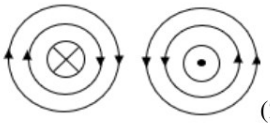
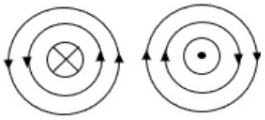
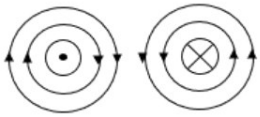
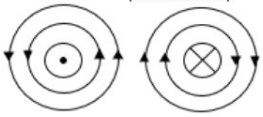
(2) 

(3) 

(4) 


38. Which diagram correctly indicates the direction of the current and the magnetic field at points $A\ and\ B$ of a conductor where the current flows perpendicular to the plane $PQRS$.?




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

39. What is considered a cause of (CKD) $(Chronic\ Kidney\ Disease)$ in srilanka?
(1) The use of inorganic fertilizers and herbicides in agriculture.
(2) Consumption of genetically modified vegetables.
(3) Urbanization and environmental pollution
(4) Inappropriate waste management processes.

40. $A-$ Water foot print $B-$ Carbon foot print $C-$ Food mile
The above are concepts related to the sustainable development of the environment. An increase in which of them has a direct influence on the increase of another.
(1) An increase in $A$ cause an increase in $B$.
(2) An increase in $B$ cause an increase in $C$.
(3) An increase in $B$ cause an increase in $A$.
(4) An increase in $C$ cause an increase in $B$.

# Provincial Department of Education
# Northern Province
## Third Term Examination – 2025

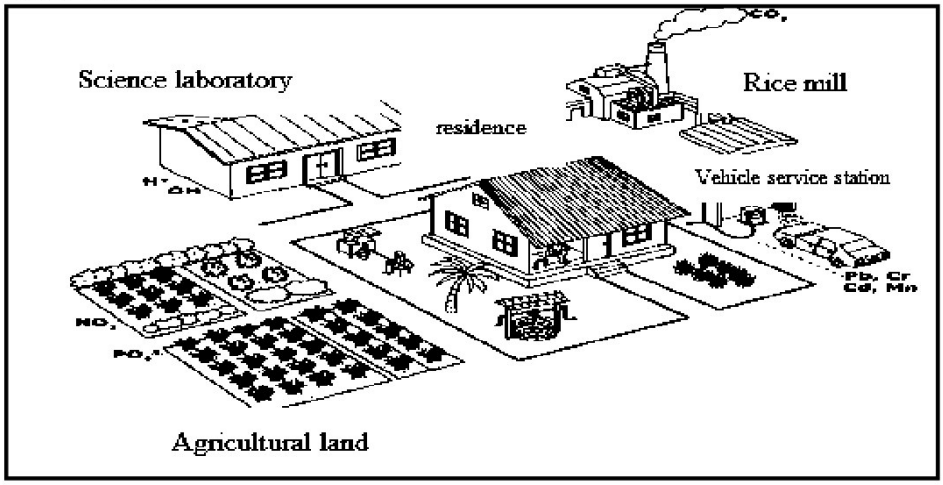
| Grade 11 | SCIENCE II | Time : 3 hours |
|---|---|---|
| Index No: ..... | 34 \| T \| II | Additional reading time 10 minutes |

**Instructions:**

- Write your answers in neat handwriting.
- Answer the **four** questions in part **A,** in the space provided
- Of the five questions in part B, answer three questions only.
- After answering, tie part A and the answer script of part B together and handover

### PART A – STRUCTURE QUESTION

1. **(A). The below picture shows buildings of a settlement environment and substances release from this settlement environment**




Fill in the blanks in the table below by Selecting an example from the diagram corresponding to each statement.

| | sentences | examples |
|---|---|---|
| 1. | The main source that releases the components causing **eutrophication** in the well water of the residence | (i)…… |
| 2. | The main substance contributing to the increase in global temperature and the place that releases it. | (ii)……..…… (iii) …… |
| 3. | A place that can **change the soil's pH** nature. | (iv) …… |
| 4. | A **heavy metal** and the source likely to release it. | (v) …….. (vi) …… |
| 5. | The place that have high frequency of causing respiratory diseases for people in settlement environment. | (vii) …… |

(viii).State one challenge the residents of this people living in settlement environment might face?
……
……

(ix). The roof of this residence is made of asbestos. State a respiratory disorder that can be caused by above asbestos roof.?
……

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(x). Are sustainable development and environmental management maintained in the given residential environment? Explain using the information.

……

……

**(B) The table shows information obtained regarding Soil pollution in a certain district during the period of year 2022, 2023and 2024.**

| year | pH | Electric conductivity (ds/m) | Density (g/cm³) | Humidity (%) |
|---|---|---|---|---|
| 2022 | 6.5 | 0.8 | 1.4 | 15 |
| 2023 | 6.4 | 1.1 | 1.5 | 18 |
| 2024 | 6.2 | 1.3 | 1.6 | 20 |

(ii) In which year was the acidic nature of soil found to be highest? ……

(ii) What is the electrical conductivity in 2023?

……

(iii). Based on the given table, state how the electrical conductivity changes with the soil's *pH* value

……

……

(iv). The electrical conductivity of the soil is calculated based on which components of the soil?

……

……

**2..(A). The body of organisms contains various chemical compounds. Some of them are given below.**

| Lipid, Carbohydrate, Minerals, Vitamins,Water, Protein |
|---|

Specify the compound for each statement.

(i). A substance that forms one of the structural components of nucleic acid. ……

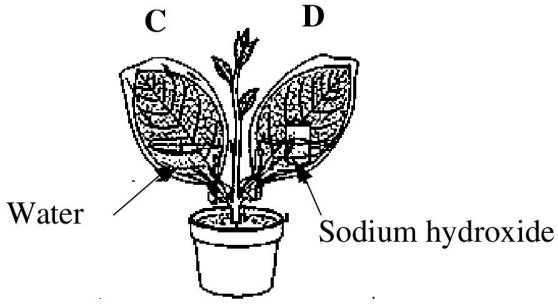
(ii). Mainly composed of Carbon, hydrogen oxygen and Nitrogen……

(iii). A substance that can generate a large amount of energy through oxidation? ……

(iv). The inorganic compound found in the highest quantity in body by mass? ……

(v). Deficiency symptoms are shown when …… and …… decreases in the body,

**(B). The diagram below shows the arrangement of an experiment related to photosynthesis**




(i). What is the aim of the experimental setup shown nearby? ……

……

(ii). State the reason for using potted plants in such experiments?

……

(iii) For the starch test for photosynthesis,which leaf (C, D) would lead to the conclusion that starch is present? ……

(iv) In this arrangement, specify which is the control experimental setup and which is the experimental setup from C and D?

Control experimental setup - …… Experimental setup - ……

**(C). Some major tissues found in plants are given below;**

| • Sclerenchyma • Collenchyma • parenchyma • Xylem tissue • Phloem tissue |
|---|

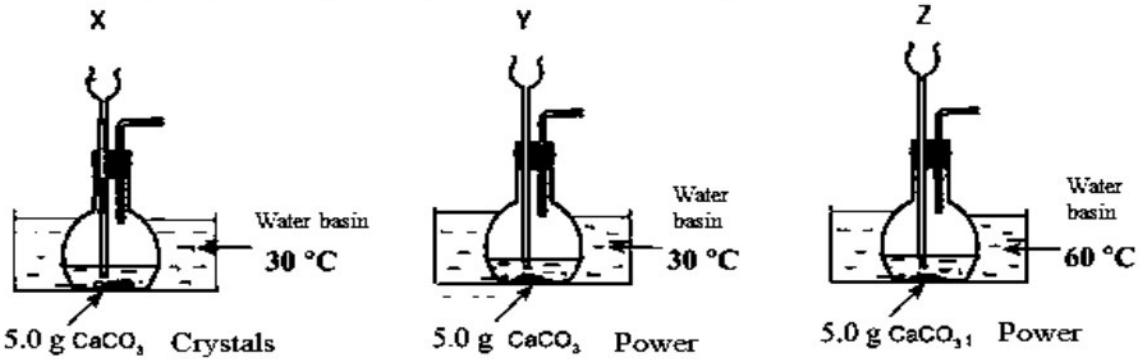
Specify which of the above tissues is present in each of the followings.

(i) Tissue composed of a living cell and three dead cells …….....

(ii) Cell walls are uniformly thickened and the central cell lumen is narrow……. …..

(iii) Performs the functions of Photosynthesis, food storage, storage of water and providing support…….

**3.(A).The figure above shows the setups X,Y and Z, each setup arranged with 50 $cm^{-3}$of 0.5 $mol\ dm^{-3}$, Hydrochloric acid (HCl) solution, to compare the factors affecting the rate of reaction.**




(i). Which factor influencing the rate of reaction of the above reaction is investigated using each of the following pairs of setups?

(a) X, Y …….. (b) Y, Z ……

(ii).

a. In which setup X or Y, will the chemical reaction occur faster? …….....

b. Which observation support you to confirm that the chemical reaction occurred faster? ……

……

(iii). State a factor that affect the rate of chemical reaction, other than those mentioned above in(X,YandY,Z)?

……

……

**(B). Consider the elements present in the compound's calcium carbonate and Hydrogen chloride.**

(i). Among the specified elements,

a. Which element has the **highest Electro negativity?** …….

b. Which element has the **valency of2?** …….....

c. The element with the electronic configuration 2, 8, 7.? …….....

d. Among the specified elements, which element can exist naturally as a diatomic and triatomic molecule? …….....

e. State one metallic **element** among these elements?

…….....

(ii). Consider the elements present in the above, Draw the Lewis dot cross diagram of the chemical compound formed by the combination of **group I** element and the **group vi** element found among these elements, inside the box provided nearby. (use the standard symbol of the element)

(iii). In this structure,

a. How many electrons are there on the central atom? ……..

b. How many covalent bonds are there in this molecule? …….

c. Which element involved in the bonding has a more electropositive character?

…….....

4.**(A).** **The table below shows some physics activities carried out by student groups during the club activities of grade 10 and 11 students in a school.**

| Groups | Activities |
|---|---|
| Group 1 | They were converging sunrays using a convex lens. |
| Group 2 | They were describing ohm's low using circuits that they constructed. |
| Group 3 | Exhibit different colours of permanent resistance. |
| Group4 | They were prepared a model of hydraulic jack. |
| Group 5 | They were prepared a model for showing how liquid pressure changes as the depth of liquid changes. |

(i). Which group of the above carried an activity similar to measure the approximate focal length of convex lens? ……

(ii). What is the property of the liquid that causes it to be used in hydraulic jacks in the activity carried out by group 4?

……

……

(iii). Draw the circuit diagram for the activity of group2 using standard symbols in given below box?

(i). State which other factor, besides depth, that depend on changes to cause a change in liquid pressure?

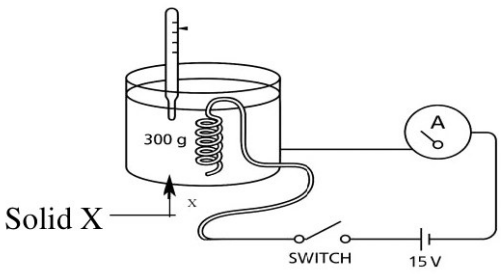
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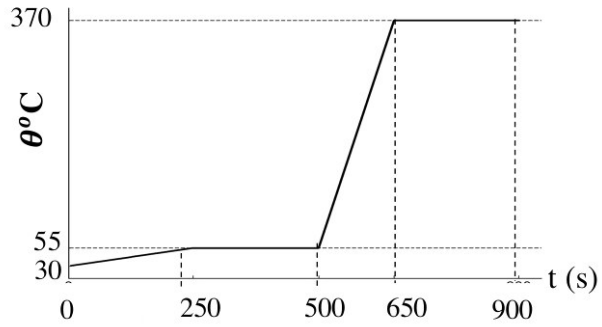
(ii). Find the resistance value of the resister, if the resistor displayed by group 4 were observed **red**, **yellow, and red.**? (red - 2, yellow- 4)

……

……

**(C).**The diagram below shows the experimental setup used to determine the **specific heat capacity** of a $300\ g$ pure solid substance $X$.Heat is supplied to the system using a nichrome wire coil such that the solid substance receives a $5\ A$ current from a $15\ V$ power source. The adjacent graph shows how the temperature of the system changes with time. Answer the questions using the graph.




(i). What is the initial temperature of solid X? ……

(ii). State the melting point of solid X? ……

(iii). Find the **time taken** for solid X to reach its melting point? ……

a. Find out the amount of electrical energy consumed for solid X to reach its melting point?

……

……

b. Assuming that the consumed electrical energy was used entirely to melt solid X, Find the specific heat capacity of the solid X.

……

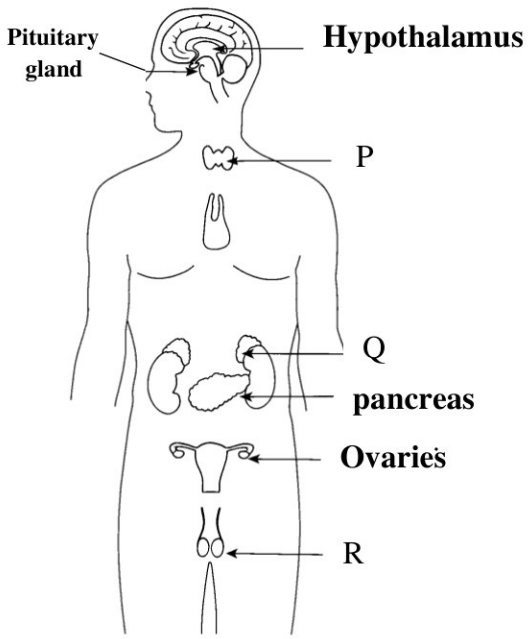
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## Part 11B

- **Answer only three questions out of questions 5,6,7,8 and 9.**
- **Answer for part B in your answer sheet**

**5. (A). Human endocrine system is given below.**




(i). Identify the endocrine systems P, Q and R

(ii). State (2) **TWO** characteristics of hormone?

(iii). Someone, upon Seeing a wild elephant approaching, became scared and immediately ran away very fast.

a. When the person sees the wild elephant, which organ received the stimulus?

b. Specify the hormone secreted to prepare the body during fright and the English letter representing the gland that secretes it?

(iv). "Glucose concentration in the blood Increases above the optimum level"
Which gland secretes the hormone responsible for glucose homeostasis in this situation?

(v). Specify the hormone that stimulates the male secondary sexual characteristics and the endocrine gland that secretes that hormone.

**(B). The building unit of organism is cell.**

(i). Which cell organelle generates energy within the cell?

(ii). Through which metabolic process is energy generated in the cell?

(iii). Write one substance formed during anaerobic respiration in plants?

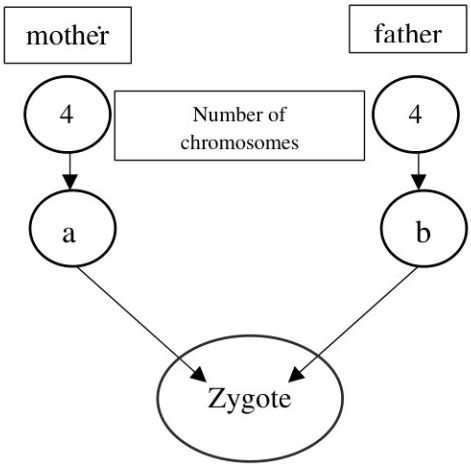
**(C) Kidney, skin and lungs are the excretory organs found in humans.**

(i) From which of the above organs are **Nitrogenous wastes NOT** excreted**?**

(ii) The functional unit of the kidney is the nephron.

a. State a process that occurs in the glomerulus, and a process that occurs in the peritubular capillaries formed by the branching of the efferent arteriole during urine formation in the nephron?

b. Mention one disease condition that can occur in the kidney?




**(D).** The number of chromosomes in the generations of a certain species during sexual reproduction is given below.

(i). What is the number of chromosomes in a and b?

(ii). What is the cell division that occurs during gamete formation?

**6. (A). Currently, hydrocarbon compounds are used in various products.**

(I) Define "hydrocarbons"

(i). Propane $(C_3H_8)$ is the component of cooking gas.

a. Propane is an alkane. Explain based on the common formula.

b. Write down the chemical symbol of the other component found in cooking gas, other than the one mentioned in question (a).

(ii). Ethene plays an important role in the formation of polymers. Polymers formed using ethane are called derivatives of ethane.

a. Draw the structure of ethene

b. What is the polymer formed using ethene?

c. Give the repeating unit of the above specified polymer?

(iii). Polymers can be classified as natural polymers and artificial polymers based on origin.

a. Give an example for artificial polymers?
b. State one disadvantage for using artificial polymers?

**(B). The main compounds found in hand Sanitizers are given in the nearby** figure.




Ethanol (80% v/v)
$C_2H_5OH$

Glycerol (1.45% v/v)
$C_3H_5(OH)_3$

Hydrogen peroxide (0.125% v/v)

Sterile distilled or boiled cold water

(i). Is this mixture a homogeneous mixture or a heterogeneous mixture?

(ii). What is the method by which the composition of the mixture is specified here?

(iii). Which component is present in the highest percentage in this mixture?

(iv). For the component found in the highest percentage in this mixture,

a. Find its molar mass? $(C = 12, H = 1, O = 16)$
b. What is the volume of ethanol that can be found in 250 $cm^3$ of hand sanitizer?

(v). Distilled water is used in the preparation of most solutions,

a. What is the reason for using distilled water when preparing solutions?
b. Using which separation technique is distilled water prepared?

**7. (A).** The distance from the optical center to the object and the distance from the optical center to the image for a certain lens were measured and tabulated. These were done as experiments A, B, C, D, and E. (The reason for the image distance being (-) during experiment E is that the image appears on the same side as the object)

| Experiment | A | B | C | D | E |
|---|---|---|---|---|---|
| distance from the optical center to the object (cm) | 25 | 20 | 15 | 10 | 5 |
| distance from the optical center to the image (cm) | 6.6 | 20 | 30 | - | (-10) |

Answer the following based on the table provided above.

(i). What is the type of lens used by the students for the specified experiment?

(ii). What is the reason for the answer you specified in question (i)?

(iii).

a. What is the focal length of the lens used for this experiment?
b. Specify which two experiments you selected to identify the focal length?

(iv)

a. Draw a rough ray diagram explaining the image position for the object in experiment C. (Use ↑ as the object.)
b. Give two properties of the image obtained in this case.

**(B). A light bulb box was marked with $20\,W/\ 240\,V\ /\ 50\,Hz$ .**

(i). The electric current required for this bulb to operate is Alternating current (AC) or Direct current (DC)?

(ii). Specify which data given in question (B)you selected to choose your answer?

(iii). What does $20\,W/\ 240\,V\ /\ 50\,Hz$ mean?

(iv). What is the magnitude of the current required for the specified bulb to operate?

(v). When 5 such bulbs operate continuously for 4 hours, give the amount of electrical energy consumed in $kWh$.

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8. **(A).** Some vegetables and animals' foods purchased for cooking in a restaurant are given below.

| **Vegetables** | **Animal foods** |
|---|---|
| Potatoes, Drum stick, Onion, Tomato, Chilies Coconut Gotukola/Vallarai | Prawn,Crab,Cuttle fish, sardine Trevally, Stingray, Chicken meet |

(i). In the vegetable set,

a. Give one vegetable obtained from Monocot plant and one from a Dicot plants?

b. Write a type of vegetable that could have been formed through sexual reproduction?

c. Specify the parts of the following vegetable plants used for reproduction.?

pennywort/Vallarai - Potato-

(ii). In the animal food set,

a. Give an animal with a vertebral column and an animal without a vertebral column?

b. write down separately, the Domain, Kingdom, phylum, to which the prawn belongs, separately?

**(B).** The data showing how the horizontal force applied on a $2\ kg$ wooden block changes with the frictional force applied on the wooden block against that horizontal force is tabulated below.

| Horizontal force applied on the wooden block. (**N**) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|---|
| Frictional force applied on the wooden block against the horizontal force (**N**) | 0 | 1 | 2 | 3 | 4 | 3.8 | 3.8 | 3.8 | 3.8 |

(i). What is the name given to the frictional force applied on the wooden block when the force applied on the wooden block is $3\ N$?

(ii). According to the given data, what is the limiting frictional force applied on the wooden block?

(iii). A large wooden block of mass $200\ kg$ needs to be pulled across a flat, rough surface. Specify two different methods to reduce the friction between the surfaces.

(iv). The specified $200\ kg$ wooden block was pulled a distance of $5\ m$ using a net force of $100\ N$.

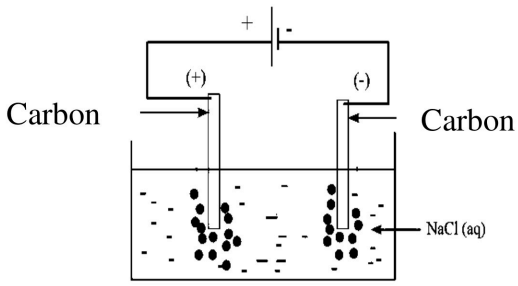
a. Calculate the acceleration of the wooden block in the direction of the force.

b. What is the amount of work done during this movement?

c. If took 10 seconds to complete the specified work, What is the rate at which the work is done (power)?

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**9. (A).** The below figure shows the electrolysis of a sodium chloride aqueous solution. The electrolytic cell is given nearby and a few drops phenolphthalein indicator, have been added to this solution.




(i). State a positive ion and a negative ion present in sodium chloride aqueous solution?

(ii). Name the gases producing in the anode and cathode when electrolyzing the solution.

(iii). Write down the half reaction equation occur in negative terminal?

(iv). When electrolyzing the solution,

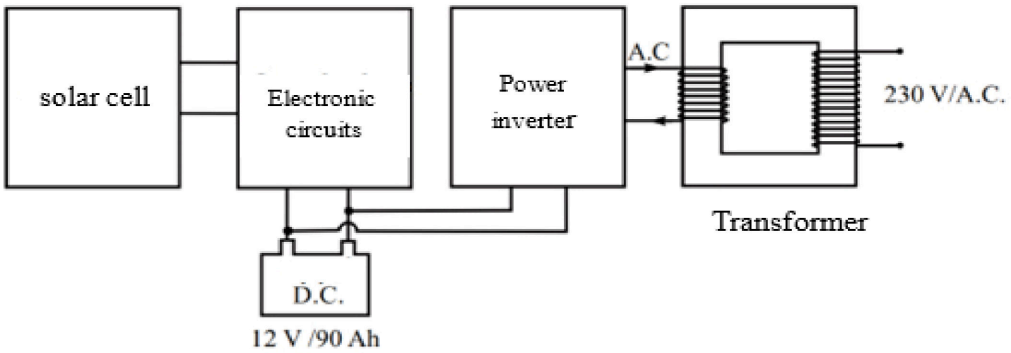
a. State the colour change obtain in electrolytic cell

b. Name the ion that responsible for the above colour change?

(v). Write down the changes that can be observed at the anode and cathode, if you use coppersulphate solution in steed of sodium chloride solution.?

(vi). Explain in brief "sodium chloride solution can be electrolyzed, but sugar solution can't"?

**(B).** The electricity produced by solar cells can be stored for use at night. And also stored in batteries for use to connect home electric circuits when power cut occurs. For that it is connected to power inverter for use in home electrical circuits, converted in to alternative current electricity and send to a specific transformer and connected to the home electric circuits.




(i). Write down the energy transformation in solar cell

(ii). State the function of power inverter?

(iii). A given transformer has 24turns in its primary coil. Voltage difference of 12V is supplied to the primary coil.

a. Which type of a transformer is this?

b. Find the turns in secondary coil of this transformer, if you want to get the voltage difference of 230V.

c. Assume there is no energy lost when the transformer works, find out the current input of the primary, if the current output of the secondary is 5A.?

(iv). A student wants to connect LED television in output circuit.

a. Which type of current is used for functioning *LED* television?

b. Draw the electronic circuit in your answer sheet for getting above mention(a) type of electric current.

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