



# Provincial Department of Education Northern Province



## Second Term Examination - 2023

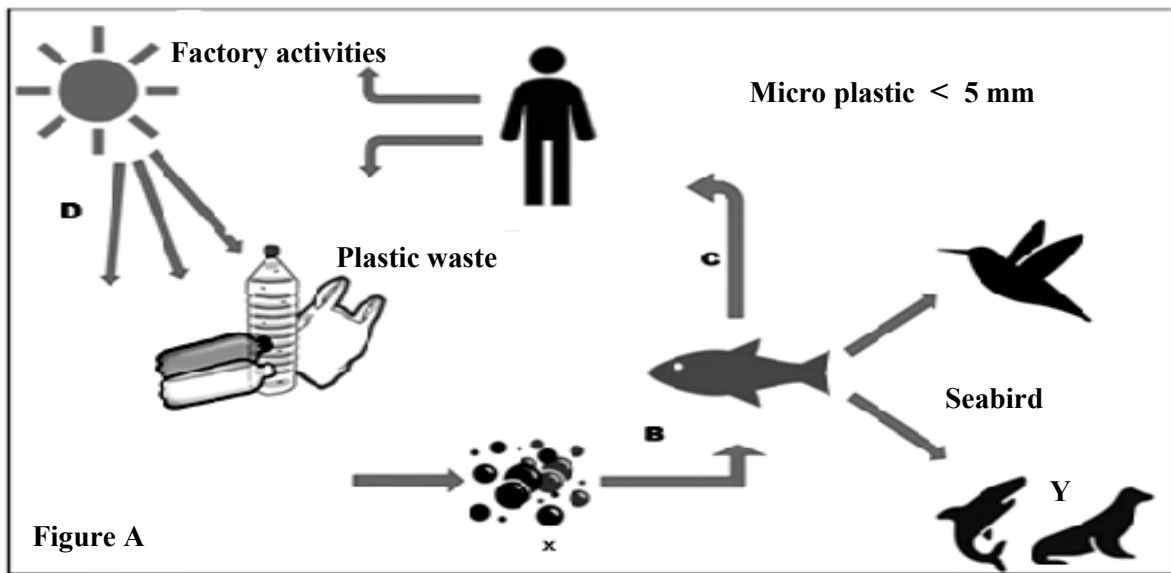
<b>Grade :- 11</b>	<b>Science II</b>	<b>Time :- 3 hours 10 minutes (additional Reading Time)</b>		
<b>Index Number :- .....</b>	<table border="1" style="margin: auto;"> <tr> <td style="padding: 5px;">34</td> <td style="padding: 5px;">T</td> <td style="padding: 5px;">II</td> </tr> </table>		34	T
34	T	II		

**Instructions:**

- ◆ Use the additional time to go through the question paper in order to select the questions and to organize answering based on priority.
- ◆ Answer all four questions in part A in the space provided.
- ◆ Answer 3 questions only out of five questions in part B.
- ◆ Attach part A with the answer script of part B and hand over.

### Part II A

01. A) “A person consumed nearly 5g micro plastic equal to the size of credit card per week”  
The above warning was given by Neutritionist. A university research report also indicates the microplastic particles mixed in food, water and air. The figure given below shows How the micro plastic particles reach the human body.

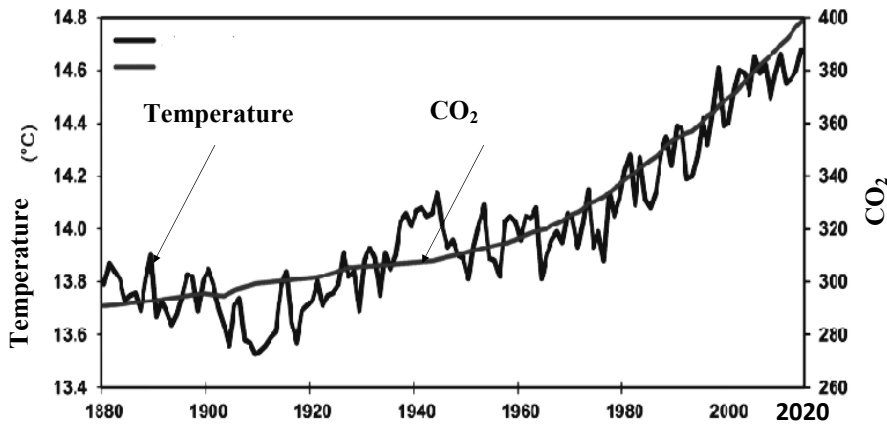


**Based on the informations answer the following questions.**

- I) What can be said about the size of micro plastic. ....
- II) The plastics added to environment form micro plastic by fragmentation. Mention the letter which indicates this process?.....
- III) The ultraviolet radiation also influences in the formation of micro plastic. Give the letter related with it?.....

- IV. The organism live in water intake micro plastic directly which is shown in the figure
- Compare to this organism, the concentration of micro plastic in human with the above organism .....
  - How is the above mentioned process called .....
  - Mention 2 problems caused to human by this process. ....

B) The change of climatic factors with time is shown in the graph.



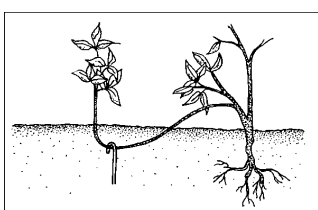
- Which one is the direct effect of pollution, that you can understand from the graph .....
- In the duration from 1880 to 2020,
  - Calculate the change in the amount of carbon dioxide? .....
  - Calculate the temperature change? .....
- Name the change that was a result of the process mentioned in question ii (a) .....
- Mark correct or incorrect
  - The kyoto protocol helps to reduce the amount of green house gases (.....)
  - The sea level may reduce as the result of increase the amount of carbon dioxide. (.....)

C) Answer the questions based on the following nutritional relation hip between organisms.

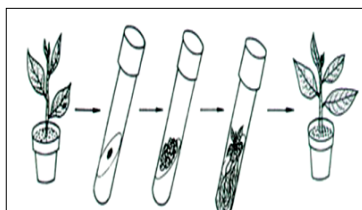
Paddy → Locust → Frog → Snake

- How many trophic levels are found here .....
- Mention the mode of nutrition of secondary consumer .....
- How many links are found here .....

02. A) Some of reproduction methods were shown in the figure. Select suitable letter and fill in the blanks.



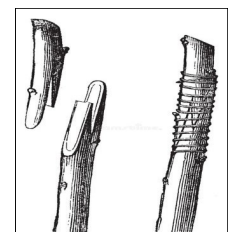
I



II



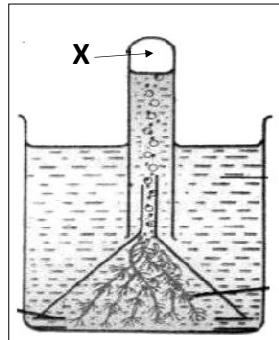
III



IV

- a) Fixing scion on the stock of same species of dicot plants ( )
- b) Getting clone from any vegetative tissue of plant in a culture medium under controlled Condition ( )
- c) Initiate rooting while it is still attached to mother plant ( )
- d) Generation of new plants naturally from underground part of mother plants ( )

B) The biological activity carried out by an aquatic plant under light is shown in the figure.



- I) Give the biological activity, shown here? .....
- II) Name a suitable plant which can be used here? .....
- III) Mention the gas denoted by the letter 'X' .....
- IV) Write down 2 observations, while the setup was kept under intense sunlight.
  - 1. ....
  - 2. ....
- V) Write down the identification test for the gas 'X' .....

C) The disease Hemophilia is caused by sex linked recessive gene h. The dominant gene of it is H  
A healthy male married a woman. The possibility of disease caused to children is shown in the punnet square.

- I) Mention Genotype of mother  
.....
- II) Complete the blanks in the punnet square  
.....
- III) What percentage of male children is likely to be born with the disease  
.....
- IV) Give the percentage of carrier female child.  
.....

♂	$X^H$	Y
♀	$X^H$	$X^H Y$
	$X^H X^h$	

(15 marks)

03. A) Consider the statements related with the elements

- ◆ P – When exposed to air get rusting
- ◆ Q – When putting in water moves here and there.
- ◆ R – Used to make jewellerys
- ◆ S – Burn with bright white flame and remains as white colour residues.

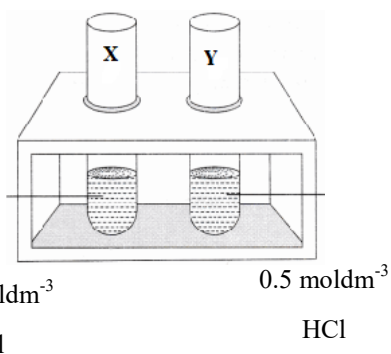
I) Based on rate of reaction, arrange the elements in ascending order.

.....

II) Write down the extraction method of Q and R from their ores

Q ..... R .....

III) The same sized 2 pieces of metal S' were added in to the setup X, Y separately at the same time



a) Compare the rate of release of bubbles in X and Y

.....

b) Mention the factor that influence the rate of reaction was tested here .....

c) Write down the balanced equation for the reaction.

.....

IV) a) Name the compound of Q which is found in sea water

.....

b) Write down the extraction method of Q from sea water

.....

c) Write down 2 features of the place where the above mention extraction is carried out.

.....

d) Mention the extraction method.

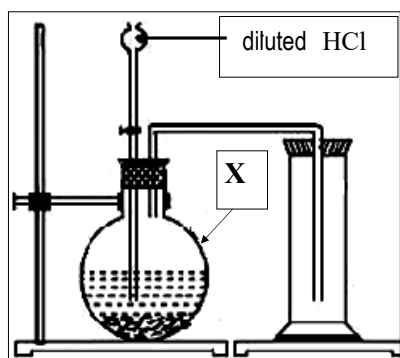
i) Extraction of jiggery from plam sap.

.....

ii) Extraction of sugar from sugar cane.

.....

B) The gas prepared by the reaction of acid with a carbonate is shown here.



I) Name the gas prepared here.

.....

II) Mention the collecting method of the gas

.....

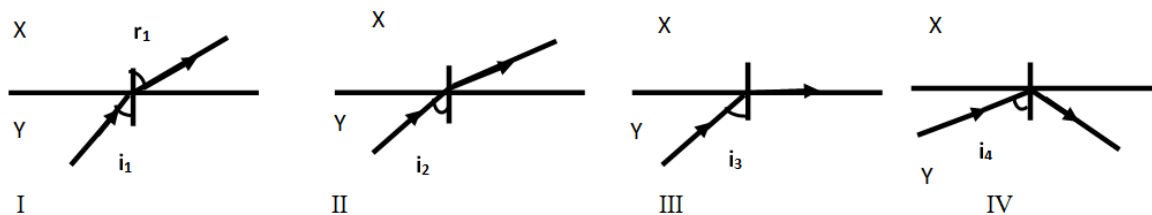
III) write down the chemical formula of a suitable substance which can be added into X.

.....

IV) Mention a use of the gas collected here.

.....

04. A) X, Y are two different transparent medium of light. Four instances related to X, Y are shown in the figure I, II, III, IV.



I) To compare the density and velocity of the medium X, Y ; use the marks, >, <, =

- a) Density of medium X  medium Y
- b) Velocity of light in medium X  medium Y

II) Which are indicated by the letters mentioned in figure I

- a)  $i_1$  .....
- b)  $r_1$  .....

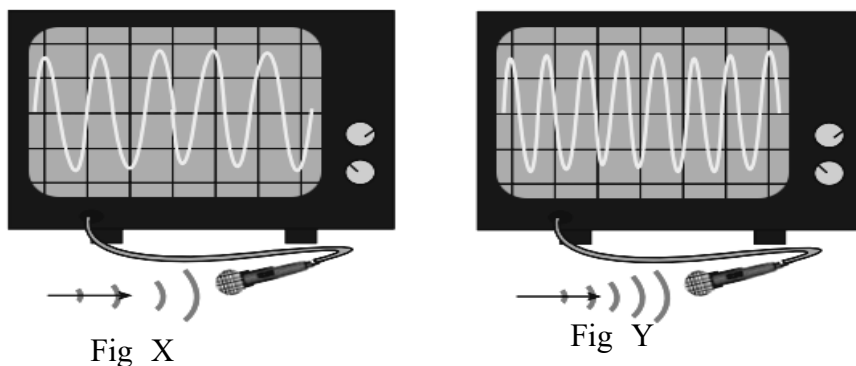
III) Arrange  $i_1, i_2, i_3, i_4$  in decending order based on the magnitudes of them.

.....

IV) Give the letter which indicates critical angle

.....

V) Name the phenomena which is indicated in the figure IV



.....

B) The displacement time graph (for 1 sec) of an equipment is shown in the figure X, Y

I) Name the above equipment

.....

II) Which quality of sound differs in X and Y ?

.....

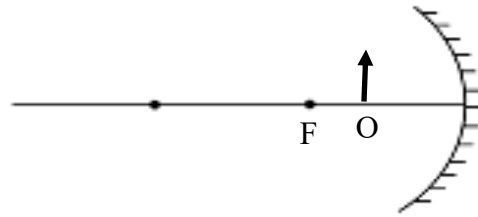
III) Which one shows high frequency sound ?

.....

IV) Calculate the wave length of sound mentioned in graph X (Velocity of sound is  $330\text{ms}^{-1}$ )

.....

C) The object 'O' positioned in front of an optical instrument. It is illustrated below.



I) Name the optical instrument.

.....

II) Draw ray diagram in the given box and Name the image as I

.....

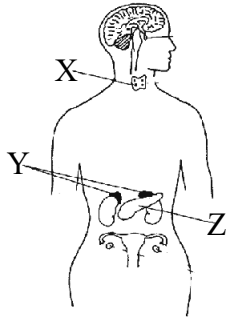
III) Mention 2 features of the image

1. ....

2. ....

## Essay II B

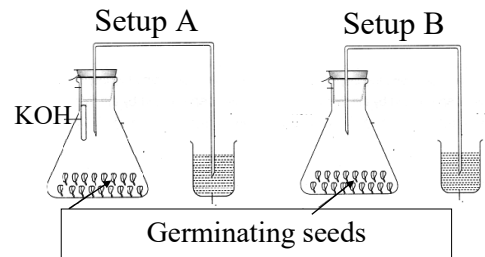
5. A) Position of endocrine glands of human are shown in the diagram.



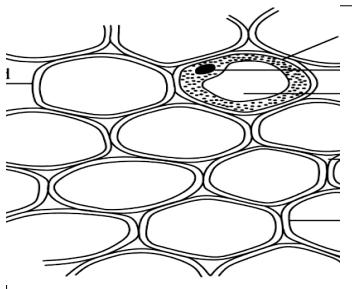
- I. Name the special kind of substance secreted by these glands.
- II. Write down 2 features of the substance mentioned above.
- III. Name the type of coordination performed by this system.
- IV. Name X, Y
- V. 'Z' acts as endocrine and Exocrine gland Explain the statement.
- VI. Name the substance, and the gland which acts in emergency.

B) The activity is carried out to show a biochemical reaction occurs in organisms

- I. Name the biochemical reaction
- II. Mention the aim of the activity.
- III. Write down The observations in A and B.
- IV. Give the reason for using KOH in the set up A.
- V. Reason out the observation in B.



C) The plant tissue with same kind of cell is shown here

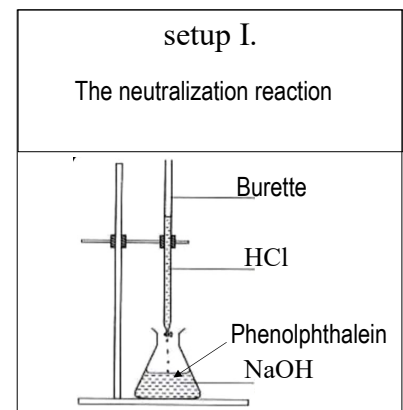


- I. Name the tissue
- II. Write down a structural feature which is used to identify the tissue
- III. Write down 2 functions of the tissue.

(20 marks)

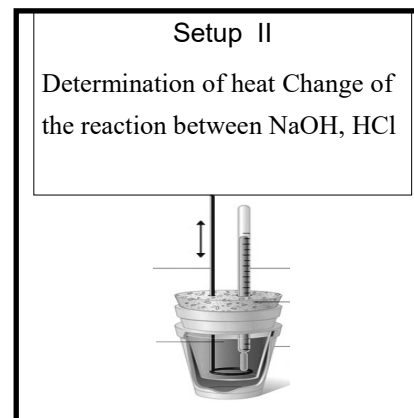
6.A) The experimental setup arranged by Grade 11 students were given below Answer the questions related to setup I.

- I. Write down the balanced equation for the reaction occurred in setup I.
- II. How do you know the end point of reaction.
- III. What is the reason for adding HCl as drops.
- IV. Which part of digestive system secretes the above acid.



**B) Answer the questions related to setup II**

- I. A student prepared  $100\text{cm}^3$  of a  $2\text{mol dm}^{-3}$  NaOH solution. Calculate the amount of NaOH needed to prepare the above solution. (Na = 23 O = 16 H = 1)
- II. Mention 4 laboratory apparatus used here to prepare the solution.
- III. Write down a precaution to reduce heat loss.
- IV. Draw energy level diagram of heat change
- V. Mention the type of reaction based on heat change.



C) Below given table denotes the atomic number of the consecutive elements belong to 3rd and 4th periods and English letters denotes the elements.

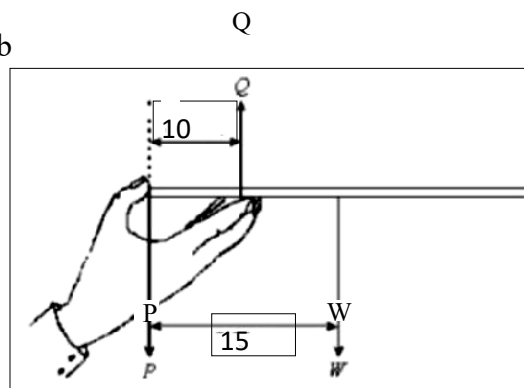
Elements	K	L	M	N	O	P	Q	R	S	T
Atomic number	(n-3)	(n-2)	(n-1)	n	(n+1)	(n+2)	(n+3)	(n+4)	(n+5)	(n+6)

- I. Give 2 elements of the same group.
- II. Write down the ascending order of the elements P, Q, S, T based on the ionization energy of them.
- III. Mention the elements which show the highest electronegative value from the above table.
- IV. Give 2 elements in gaseous stage
- V. Which one of the above mentioned element is found as monoatomic gas.
- VI. Mention a metalloid from the table.

(20marks)

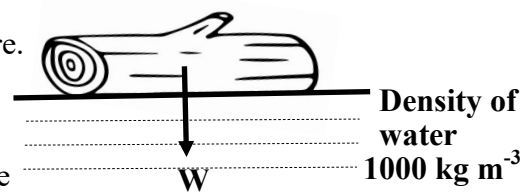
7. A) Server of a Hotel carried a plate by his hand using thumb and fingers as shown in the diagram. The system is in equilibrium. Assume the thumb point acts as fulcrum.

- I. What is the resultant force of the system.
- II. If the system is in equilibrium, what will be the relationship between P, Q, W.
- III. If the weight of plate is 100g calculate Q.
- IV. If a cup is kept on the plate. Which of the force should be increased to keep the system equilibrium.
- V. Give 2 examples for the above physics concept used in question number 3.



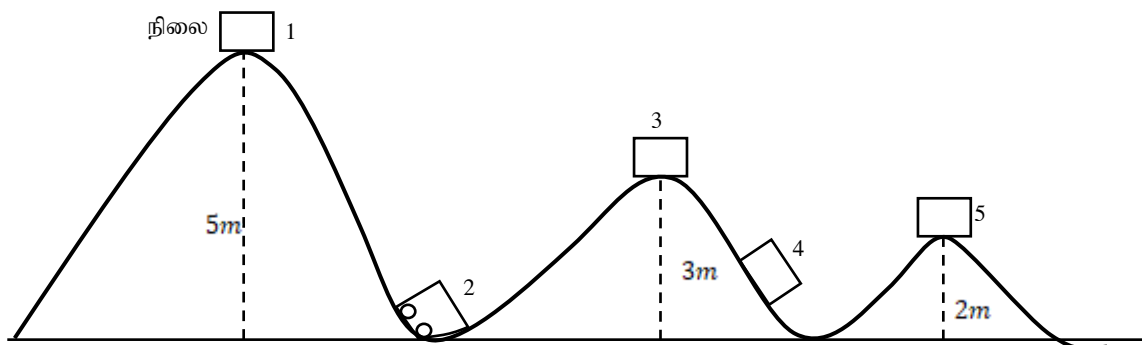
B) A wooden log of 10kg floats on water as shown in the figure.

- I. How much is up thrust?
- II. What is the weight of water displaced by wooden log?
- III. If the volume of displaced water is  $0.08\text{m}^3$  calculate the density of the log.
- IV. Mention the principle used here





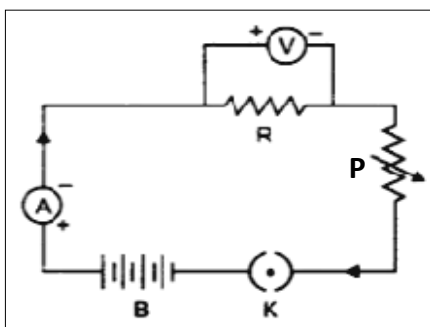
C) Different position of Roller Coaster is shown. (Assume the frictional force is negligible)



- I. Give the equation for potential energy related with kinetic energy.
- II. Which position shows high amount of potential energy.
- III. Which position shows high amount of kinetic energy.
- IV. If the height of position 1 is 5m calculate the velocity at position 2.

(20 marks)

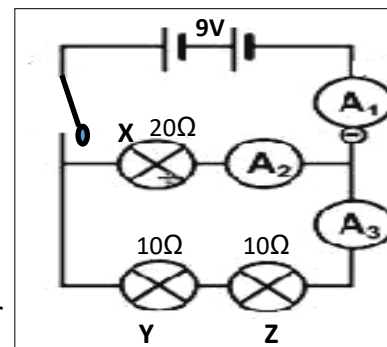
8) A) The following circuit is made to identify the relationship between the current flow and potential difference between the points of conductor.



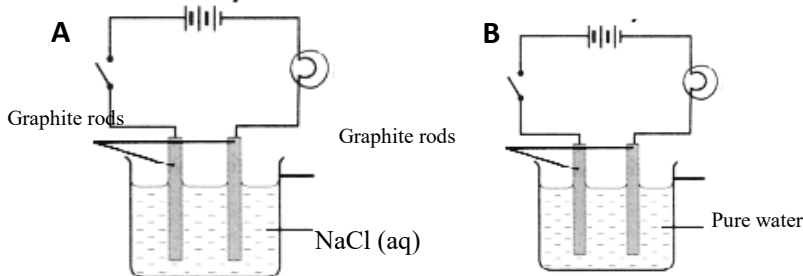
- I. Name the law which is tested here.
- II. Identify P
- III. Why P is re connected in the circuit
- IV. Draw the graph which can be gained by plotting the readings of voltmeter and ammeter.

B) The bulbs X, Y, Z with the resistance of  $20\ \Omega$ ,  $10\ \Omega$ ,  $10\ \Omega$  are connected to a circuit with 9V electric source as shown in the figure.

- I. What is the current flow of the circuit when switch is on ?
- II. Mention the reading of  $A_2$  when switch is on.
- III. What is the potential difference across the bulb Y.
- IV. What is the power of Y.
- V. Calculate the amount of energy released by Y , when it is used for 10 seconds.



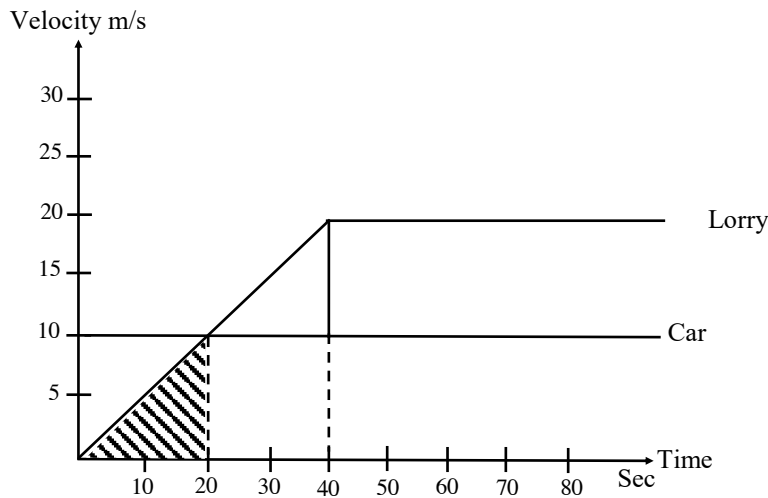
C)



- I. In which set up Bulb glows if switch is on.
- II. Draw the Lewis structure of pure water
- III. Write down the type of chemical bonds found in NaCl, Pure water.

(20 marks)

- 9) A) A car, and a lorry stopped at the signal point and then started to travel at the same time. The car was moving with the constant velocity but the lorry was moving with acceleration for a certain time and then traveled with the constant velocity. These pattern of motion was illustrated the given graph.



- I. How long the lorry should be travelled to reach the velocity of car. ? (2marks)
- II. How much distance lorry should be travelled for this. ? (3marks)
- III. What is the velocity of lorry in 20 seconds ? (1mark)
- IV. What will be the distance between car and lorry in 50 seconds. ? (1mark)
- V. ,Which one will go first in the above instance. ? (1mark)

B) The organisms live on world show diversity. Classifying organisms ease the work various aspects

- I. Belongs to which kingdom the multicellular Animals are included.
  - II. Based on which feature the above mentioned kingdom classified into 2 groups. (1mark)
  - III. The organisms starfish, Neries, Octopus Jellyfish and Centipede are in same group based on the feature mentioned above in question 2.
    - a) Name the group. (1mark)
    - b) Mentined the class of the organsims given below.
      - i) ,Body with 2 layers.
      - ii) Have jointed appendages.
      - iii) have muscular foot (3 marks)
  - IV. i) Who is father of Binomial Nomenclature
  - ii) Write down the scientific name of human in standard form. (2 marks)
- (20marks)