JAFFNA HINDU COLLEGE

Risk Holiday Self - Education Worksheet - 2020

Grade - 11 | Science

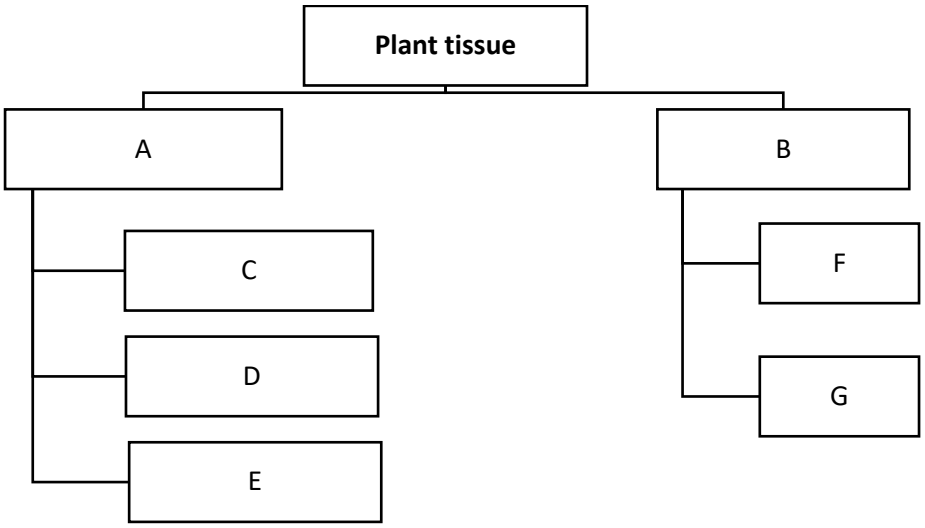
Name/Index No : ……

Mrs.N.Umakanthan, B.Sc & Mrs.K.Senthuan, NDT (Science)

Unit – 01

1. The basic structural unit of organisms is the cell .Cells collectively form tissue.

1. What is known as a tissue?
2. Fill in the blanks related to plant tissues.



a) A is a kind of tissue dividing actively by mitosis to produce new cell. Identify A and B?

b) Write four common characteristics of tissue A?

c) Height of plant increases due to tissue C. Identify tissue C?

d) Tissue D is found parallel to longitudinal axis of plant. Identify tissue D?

e) Give the function of tissue D?

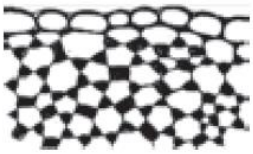
f) Identify the tissue E?

g) In which type of plant family, the tissue E is mostly found?

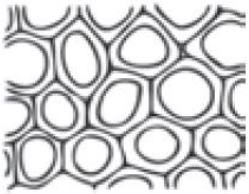
2.



Q



R



S

a) Name the 2 types of permanent tissue?

b) Identify tissues Q,R,S?

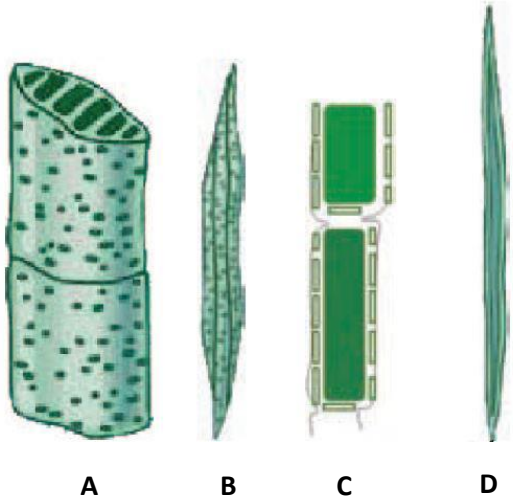
c) Give 2 structural difference between tissues Q,R,S?

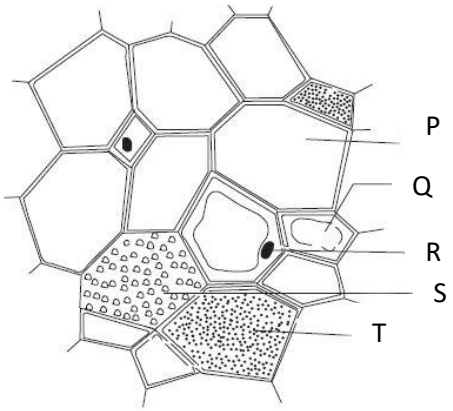
d) Give 2 locations of tissues Q,R,S in plant?

e) Give 3 features of permanent tissue that is not mentioned above?

f) Give 2 locations of above tissue in plants?

3. Xylem and Phloem tissues are complex permanent tissues.





a) Name the types of cell making Xylem tissue?

b) State a function of Xylem tissue?

c) Name the type of cell making phloem tissue?

d) Write a functions of phloem tissue?

4.

a) State 4 type of connective tissues found in our body?

b) State a liquid connective tissue?

c) Why blood tissue is considered a special connective tissue?

d) Give 2 main types of blood?

e) Give 4 functions of blood?

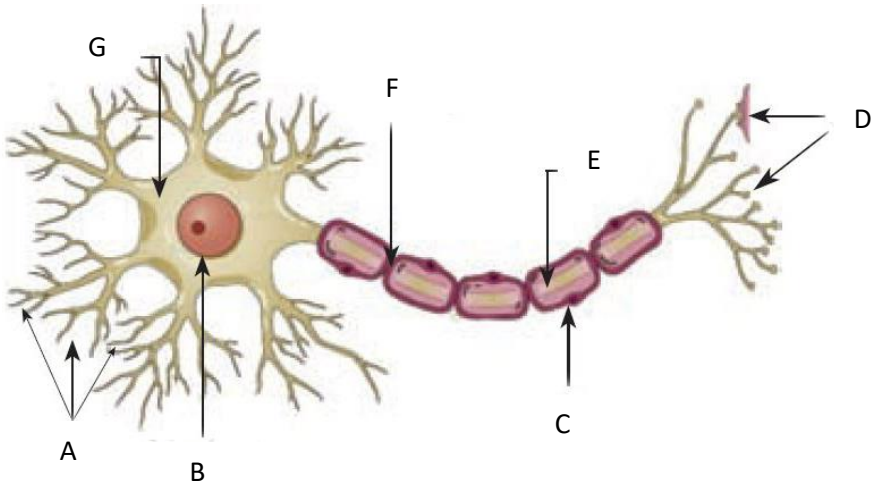
5.

a) State 3 types of muscle tissues in our body?

b) Write the main difference between skeletal and smooth muscle tissue?

c) State the special feature of cardiac muscle?

6.



a) Identify the cell shown above and name A,B,C,D & E?

b) State 2 parts found in cell body?

c) State 2 parts remaining in other part except cell body?

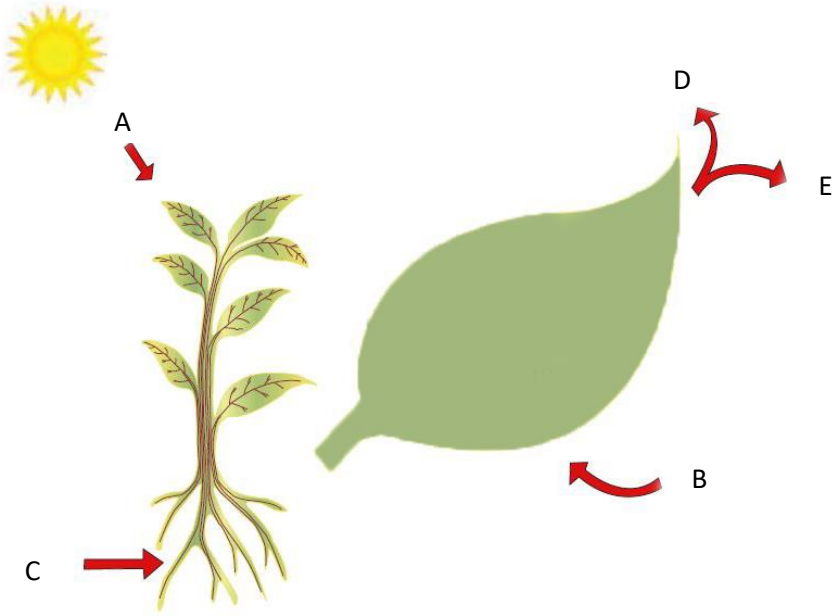
d) Give the function of myelin sheath?

e) Classify neurons based on function of them?

Unit – 02

1.

1. How do green plants obtain nutrition? What is the special name given to it?
2. What is mean by photosynthesis?
3. What type to reaction is photosynthesis?
4. Name A, B, C, D, E, & F?



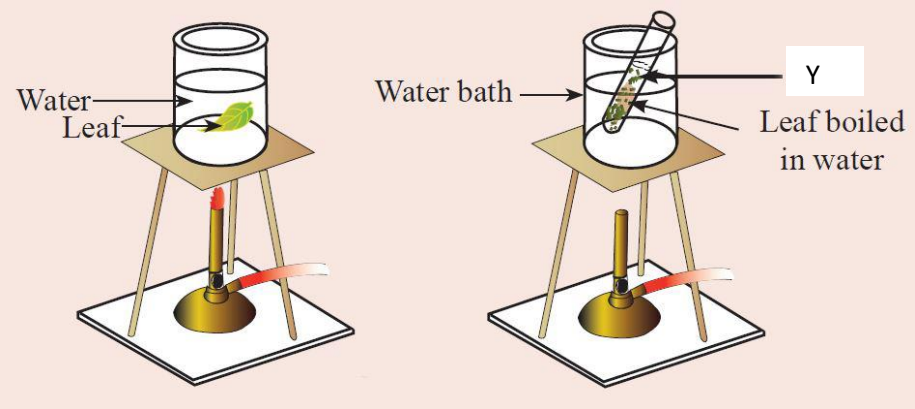
5. State the factors needed for photosynthesis differentiate them as internal and external factors?
6. What is the main energy source is used have & name the type of energy?
7. State the energy change occurring here?
8. What are the conditional factors for photosynthesis?
9. Give the equation for photosynthesis in word and symbol?
10. In which part of plant photosynthesis occurs and name the part of cell this process occur?
11. What is special feature that cell part possess to do photosynthesis
12. **Fill in the table**

Factor	**Place where it's found**	**How its obtained**
	Atmosphere	
Water		
Light		
		Leaf of a plant

13. How the process of obtaining water needed for photosynthesis by a plant is called?

2.

The set up shows structure prepared for testing one of products of photosynthesis.

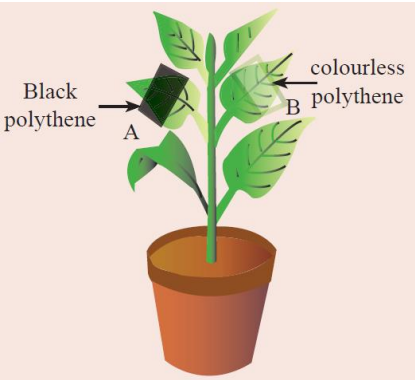


Step 1 Step 2

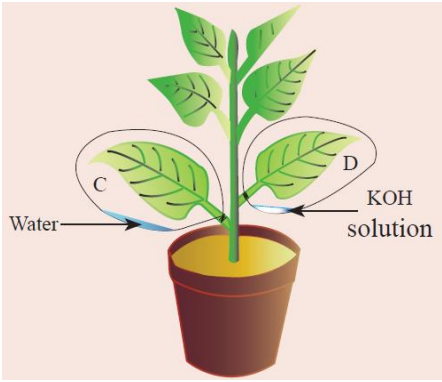
1. Which product is tested here?
2. List the things needed for this experiment?
3. In fig 2 what substance is taken in Y and why is the leaf heated dipped in water?
4. State the observation?
5. Why the structure Y is heated placed in a beaker with water?

3.

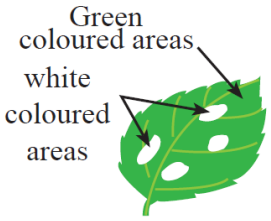
The above structures were made by some group of student to know the factors needed for photosynthesis.



Structure 1



Structure 2



Structure 3

1. Give the reason why the above 3 structures are arranged clearly?
2. What is the basic action to be done before arranging the structure?
   Give reason?
3. Why is potassium hydroxide used in structure 2?
4. Give the chemical symbol of potassium hydroxide?

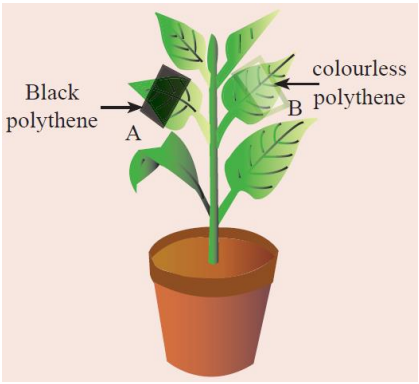
5. Calculate the molar mass of potassium hydroxide?
6. Which leaf indicate by English letters shows color change to starch test?
7. What is the reagent used for starch test?
8. What should be done before performing starch test to the leaf in structure 3?
9. What substance is used to remove chlorophyll in the steps of starch test?

4.

You are asked to do an experiment to investigate on by product of photosynthesis. You are provided with necessary things from laboratory and school environment. Answer the questions below regarding this.

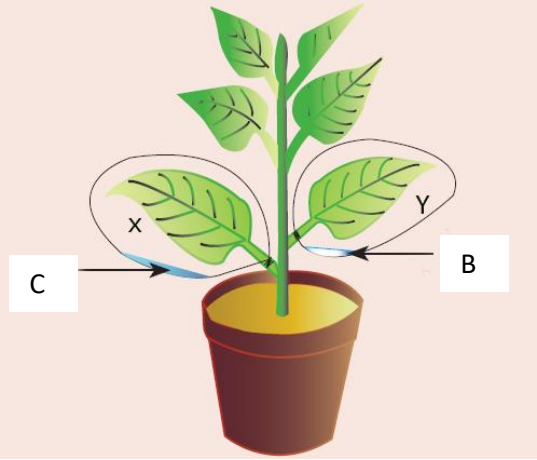
1. Draw the prepared set up & name it?
2. Another structure like above was prepared and one is kept under sunlight and other in darker conditions. Write your observation?
3. Which one of the by product is confirmed above?
4. What is the conclusion here?
5. Why do a glass funnel is used here?
6. Write why an aquatic plant is chosen for the experiment?
7. How would you confirm the by product above?

5. The following activity is done by a group of students.



1. State the experimental set up and control set up here.
2. Why is it said that a single leaf better for the experiment here?
3. What is the step you would do before performing this activity?
4. State why black colour paper is used instead of colour paper.
5. Which factor related to photosynthesis is tested here?
6. What would you observe when doing starch test to the leaf after the experiment?
7. Write the procedure of doing starch test to the leaf.
8. Which chemical substance is used in starch test?

6.



1. Which raw material for photosynthesis is tested here?
2. Why do the leaves X and Y are selected at same level?
3. Identify A and B
4. What us the function of B?
5. Which substance is C and why is it used?
6. state the experimental set up and control set up here.
7. What would you observe inthe set ups X and Y
8. What is the reason for the observation you made in Y?

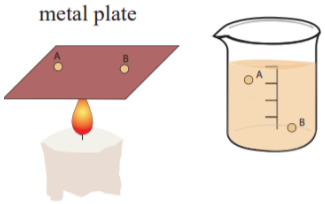
Unit - 03

1.

1) What is compound? Define it
2) Define solubility.
3) In which factors do, solubility depends.
4) Which factors influence the solubility of air?
5) Write the constituents in the following mixtures.
6) Give an example in day today life where the concept of solubility increases with increase of pressure

	Mixtures	**Constituents**
1	Cement mortar	
2	Tea	
3	Cake	
4	Well water	
5	Brass	

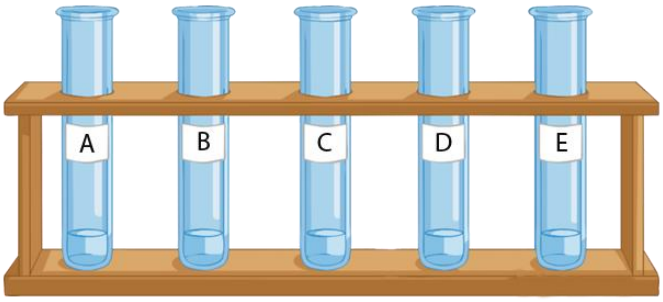
2.



Two drops taken from the points A, B in a beaker containing clay water solution are placed on a metal plate.

a) Where would you observe more solid deposit at (A or B)?
b) Is the transparency same at A and B in the clay eater solution?
c) If similar experiment is done with salt solution, write your observation on solid depsit
d) What is the purpose of this experiment?

3.



A – Distilled Water (25°C) + $MgCl_2$
B - Distilled Water (60°C) + $MgCl_2$
C - Distilled Water (25°C) + Sugar
D – Kerosene Oil (25°C) + Sugar
E - Kerosene Oil (25°C) + Grease

$MgCl_2$, sugar, grease are added in test tubes A, B, C, D, E Then they are made into solutions as shown in the figure below.

a) In which test tube a solid liquid heterogeneous mixture is prepared.
b) Write the solvent and solute in that test tube.
c) Which factor affecting the solubility can be tested with the following pair of test tubes given?
   I. A and B
   II. C and D
   III. D and E
d) Explain briefly about the observation in all test tubes based on polarity.

4.

a) What is homogeneous mixture? Give the Examples
b) What is heterogeneous mixture? Give the Examples
c) Classify the following as homogeneous and heterogeneous mixture.
(Salt, washing soda, copper sulfate, potassium permanganate, wheat flour, coconut oil, ethyl alcohol)

5. Fill appropriately

Substance 1	**Substance 2**	**Nature**	**Type of mixture**
Salt(s)			Solid and liquid homogenous
Coconut oil(l)	Water(l)		
Alcohol(l)			Liquid and liquid homogeneous

6. Fill in the table with the following mixtures

(Alcohol, Benzene, Carbon tetrachloride, formalin, carbon dioxide, ammonia, carbondisulfate, hydrogen chloride)

Chemical Compound			
Organic Mixtures		**Inorganic Mixtures**	
Polar	**Nonpolar**	**Polar**	**Nonpolar**

7. Most of the patients are treated at hospital with saline solution. 9g sodium chloride is mixed with 1dm3 distilled water to prepare normal saline solution.

a) To which type of solution does saline solution belong based on its nature? Give reasons.
b) Calculate the molar mass of sodium chloride. (Na-23,Cl-35.5)
c) Calculate number of moles in 9g sodium chloride
d) Calculate the concentration of normal saline solution mentioned here

8. At 250C, 30g $MgCl_2$ is dissolved in pure water and 100g solution is made.

a) Why is water chosen to prepare MgCl2 solution?
b) Express the composition of MgCl2 as weight percentage

9. There is 500cm3 acetic acid solution in a bottle. Its density is 1.04gcm3. Weight of acetic acid is 26g in the bottle.

a) Calculate the weight of acetic acid solution in the bottle.
b) Calculate the weight of acetic acid in the above solution.

10. 1.9g $MgCl_2$ is mixed with distilled water to prepare $10cm^3$ Solution.

a) Calculate the number of moles of $MgCl_2$ added.

b) Calculate the concentration of $MgCl_2$

11. Distilled water is used in the preparation of standard solution in laboratory. Composition is given as concentration in the label.

a) Define concentration.

b) Give the use of these instruments in preparing standard solution in lab.

I. Chemical balance

II. Volumetric flask

III. Glass funnel

IV. Wash bottle

c) Calculate the mass of NaCl needed to prepare 100cm3 solution of 1.00moldm3 NaCl solution.(Na-23,Cl-35.5)

d) How would you prepare the above mentioned NaCl solution in the lab? Give the steps in order

12.

a) Which physical quantity differences are used in mechanical separation?

b) Give examples where following techniques are used

I. Sieving

II. Magnetic Separation

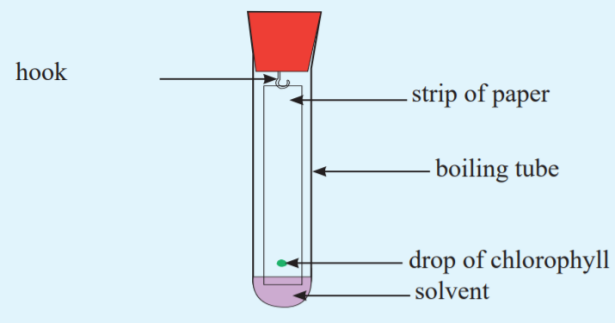
III. Winnowing

IV. Floating of water

13. Fill in the paragraph with appropriate words

To separate the iodine from water using suitable polar solvent, ……. method is used. Carbon tetrachloride is a ……. Solvent. Therefor iodine dissolve well in it. …….. coloured iodine water solution is well shake with Carbon tetra chloride and iodine in aqueous layer moves into Carbon tetra chloride layer and color of Carbon tetra chloride layer changes to ……. Then ……. layer is taken and Involved to ……

14.



Paper color chromatography experiment structure is given.

a) Give 3 instances where color chromatography is used.

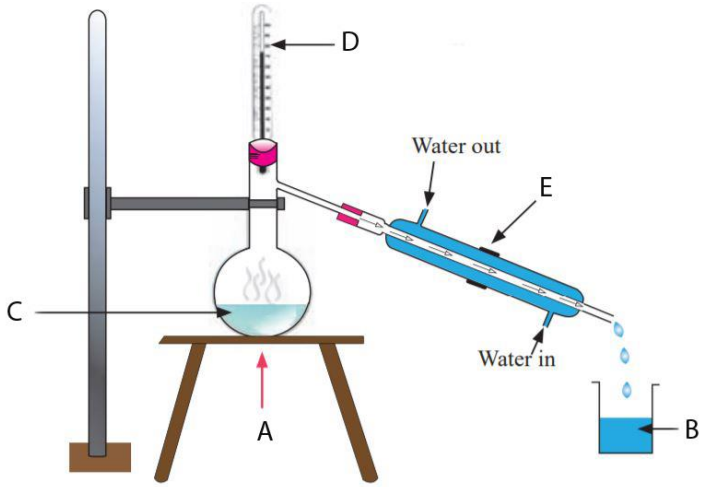
b) State some substances that can be used as solvent.

c) What are the 2 parts in static and dynamic phase of this experiment.

15.

a) Give 2 separation techniques used in separating salt form sea water.
b) State 2 factors to be considered when preparing slattern.
c) What are the salts precipitated in each steps of separation.
d) A byproduct produced in these steps is used in cement production industry. Name it
e) What is the use of above byproduct in that industry?

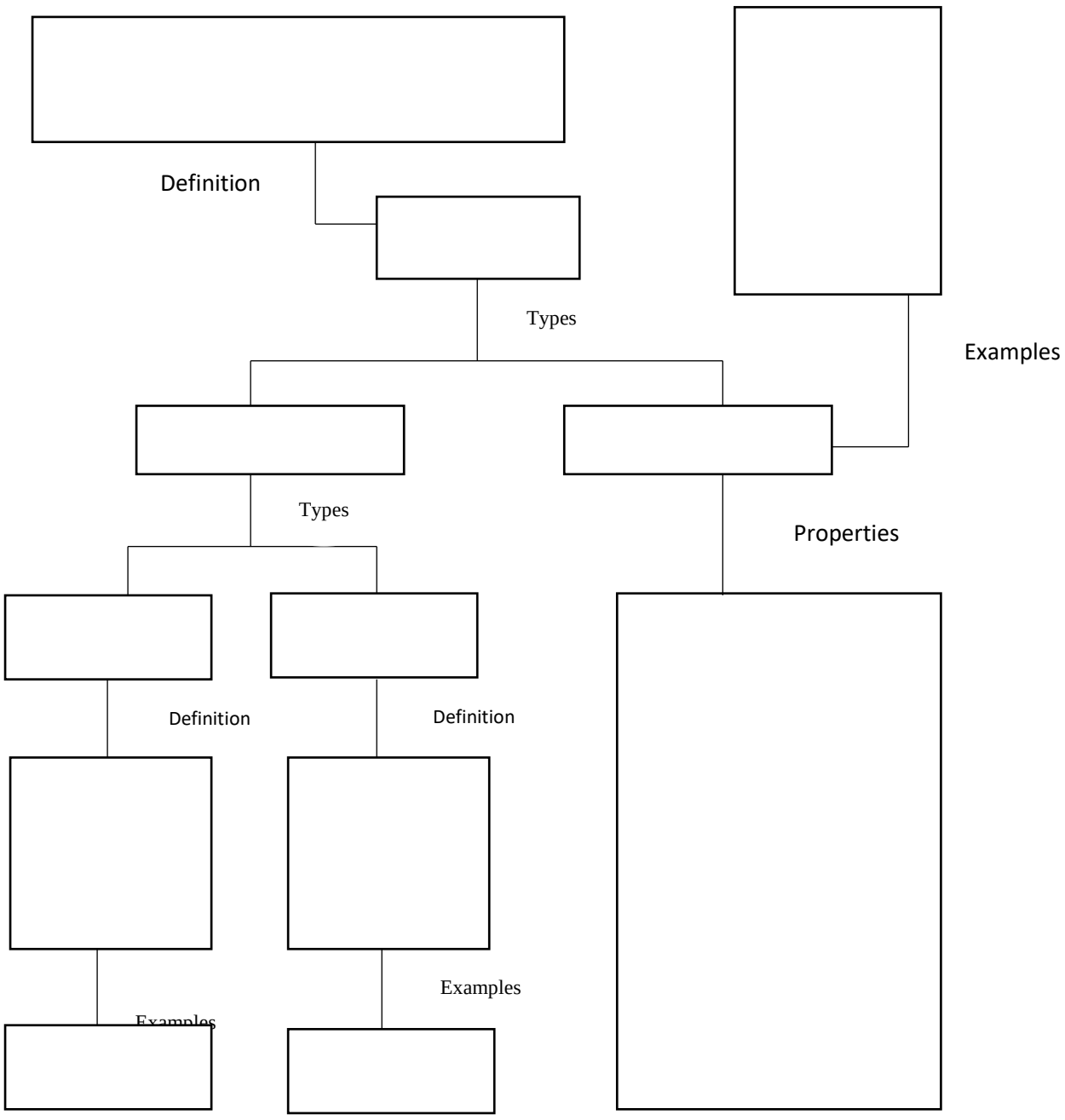
16.



a) Name A, B, C, D, E.
b) State a deficit found in the above structure.
c) What is the use of instrument E in the above process?
d) State the physical state change occur in E when heating
e) What is the reading of thermometer here?
f) In the end of the process what will be remaining in C?
g) Why is that substance remaining in C?

Unit - 4

01. Complete the concept map with using the knowledge of waves.



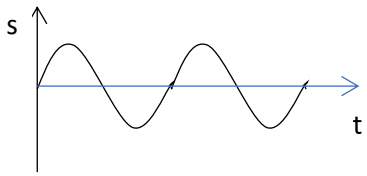
02. The picture of transverse wave is given below. Mark the following properties of waves and explain it.

(01) Wave length

(02) Amplitude

(03) Time period

(04) Frequency



03. Write the uses of given electromagnetic wave?

(01) Gamma rays

(02) X-rays

(03) Ultraviolet rays

(04) Visible light rays

(05) Infrared rays

(06) Microwave rays

(07) Radio wave rays

04. Write an experiment to show sound waves need a medium for propagation.

05. Write the properties of sound.

06. Give the hearing range of given animals.

(01) Human

(02) Dolphin

(03) Elephant

(04) Dog

(05) Rabbit

07. Write the uses of ultra sound

08. If the time taken by ultra sound waves transmitted by a ship to reach the detector again after reflection from the sea bottom is 6 sec. Find the distance between the ship and bottom of the sea? (Assume that speed of sound in sea water is $1440ms^{-1}$)

09. What happen to the speed of sound when the temperature increases in air?

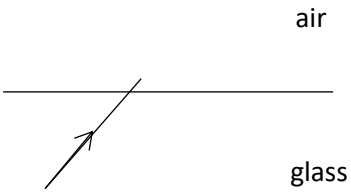
10. Write short description about **'Musical instruments'**.

Unit - 5

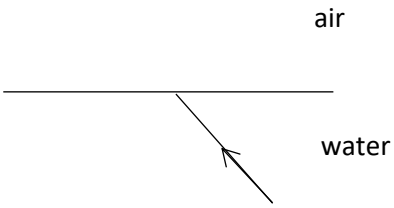
01. Write the special properties of light.
02. Draw the ray diagram for the followings
    (1) Light ray
    (2) Parallel light beam
    (3) Divergent beam
    (4) Convergent beam
03. What is reflection of light?
04. Write the laws of reflection of light.
05. Draw the ray diagram for the reflection of light ray from a plane mirror
06. Give the characteristics of image formed in a plane mirror by using the ray diagram
07. Explain an activity to find the focal length of concave mirror
08. Draw the ray diagram in the given mirrors when light travels parallel to principle axis
    (1) Plane mirror
    (2) Concave mirror
    (3) Convex mirror
09. Draw the ray diagram for the following instances by using concave mirror and write the features of image.
    (1) Mirror and the focal point
    (2) At focal point
    (3) Between F and 2F
    (4) At 2F
    (5) Beyond 2F
    (6) Object very far from mirror
10. Write the features of image formed in convex mirror by using ray diagram
11. What is refraction of light?
12. Draw the ray diagram for the refraction of light in block of glass

13. Complete the path of light ray.

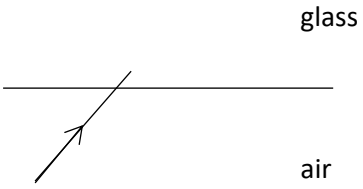
(1)



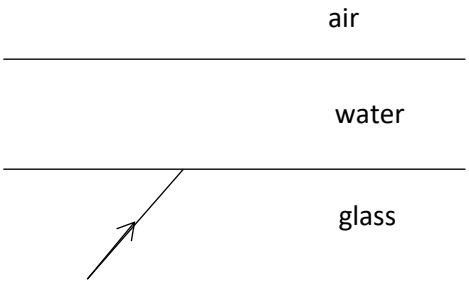
(3)



(2)



(4)

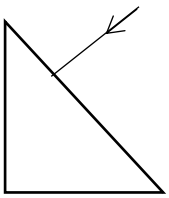


14. Write the laws of refraction of light

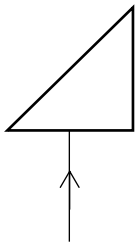
15. What is total internal reflection of light? Give the applications of internal reflection of light.

16. Complete the path of light ray.

(1)

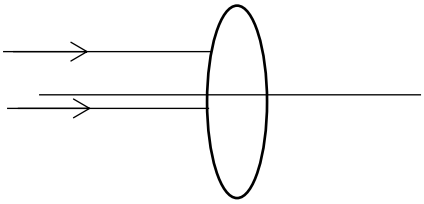


(2)

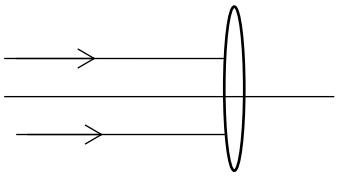


17. Co~~mplete the path of light ray i~~n the given lenses

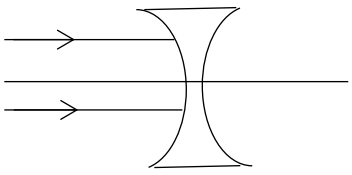
(1)



(2)



(3)



18. Draw the ray diagram for the following instances by using convex lens and write the features of image.

    (1) Lens and the focal point

    (2) At focal point

    (3) Between F and 2F

    (4) At 2F

    (5) Beyond 2F

    (6) Object very far from lens

19. Write the features of image formed in concave lens

20. Write the uses of mirrors and lenses