

# Experiment on Diffusion

## Aim

To demonstrate the process of diffusion by potassium permanganate crystals

## Materials Required

Beaker, water, potassium permanganate crystals

## Procedure

Take a beaker and put clean water in it. Drop a crystal of potassium permanganate in one corner. Leave the beaker undisturbed for some time.

## Observations

The crystal of potassium permanganate dissolves slowly and its molecules start spreading throughout water.

- In the beginning, the molecules of potassium permanganate are more concentrated in and around the crystal.

- The molecules of potassium permanganate diffuse away from the region of their higher concentration to the region of their lower concentration.
- In the beginning, the colour of the solution near the crystal is dark purple and lighter and lighter away from the crystal.
- The movement of molecules continues till the molecules are evenly distributed in the solution, making it purple.

## Inference

Molecules of potassium permanganate crystal diffused evenly throughout water since there is no obstacle of any kind in the path of molecules of potassium permanganate (solute).

## Precautions

1. Water taken for the experiment should be pure and clean.
2. Crystal of potassium permanganate should be placed gently in one corner of the beaker.
3. The set-up should be left undisturbed at room temperature.

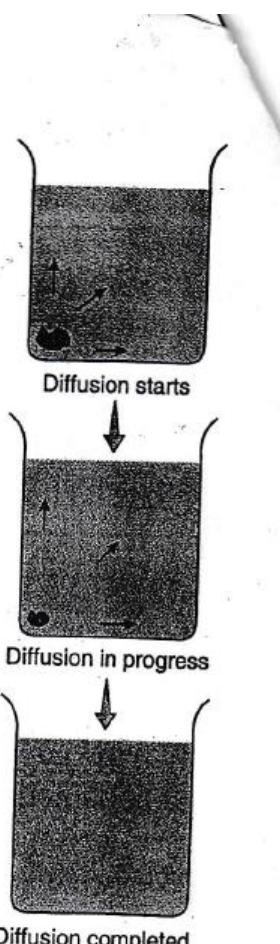


Fig. 2.1 Experiment to show the process of diffusion

# Experiment on Osmosis

## Aim

To study the process of osmosis with the help of thistle funnel experiment

## Materials Required

Thistle funnel, iron stand, parchment or cellophane paper, sugar solution and water in a beaker

## Procedure

- Take a thistle funnel.
- Cover its mouth with cellophane paper securely. Seal the edges by applying grease or vaseline to make it airtight.
- Pour 20% sugar solution in the thistle funnel to about  $\frac{1}{3}$  of the height of stem.
- Now, dip the thistle funnel in a beaker containing water. Support it in vertical position with the help of a stand.
- Mark the initial level of sugar solution with a glass marker.
- Leave the set-up for about 2 hours.

## Observation

You will observe that the level of sugar solution in the thistle funnel rises and the level of water in the beaker drops. Taste the water in the beaker. It is not sweet.

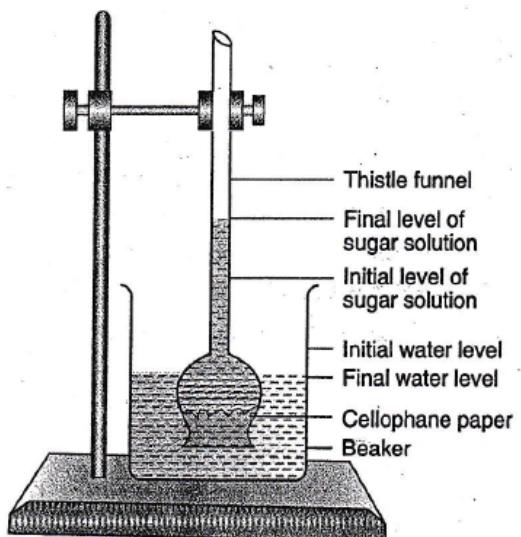


Fig. 3.1 Thistle funnel experiment to study osmosis

## Inference

The rise of sugar solution in thistle funnel is only due to the passage of water into it through the cellophane paper. But no sugar has gone out into the water of the beaker because it does not taste sweet. From this, we can infer that

- In the experimental set up, some water from the beaker has passed through the cellophane paper to enter the sugar solution.
- Cellophane paper is semipermeable because it allows only water molecules to pass through it.
- Sugar from thistle funnel has not passed into the beaker.

## Precautions

- The edges of cellophane paper should be properly sealed by applying grease or vaseline.
- The thread around the mouth of thistle funnel should be tied tightly.
- The initial level of sugar solution in the stem of thistle funnel should be marked only after dipping the mouth of thistle funnel in the water of the beaker.

## Aim

To study osmosis using a potato osmometer

## Materials Required

Potato tuber, a knife or scalpel, 10% sugar solution, red colour, distilled water, beakers, alpins

## Procedure

- Peel off the skin of a medium-sized potato. Cut one end flat and carefully make a cavity with the help of knife or scalpel in the centre of the potato, opposite to the flat surface.
- Clean a small beaker and fill it half with water. Add 2 or 3 drops of red colour (red ink) or safranin to it so that water becomes coloured.
- Keep the potato on its flat cut end in the beaker half-filled with coloured water. Half-fill the cavity with 10% sugar solution and mark its level with the help of a pin. It functions as an osmometer.
- Leave the set-up for one hour and then again mark the level of sugar solution in the cavity of potato with another pin.

## Observation and Inference

The level of sugar solution in the cavity of potato has risen. Also the sugar solution has become coloured.

The experiment shows that only the living or semipermeable membrane is responsible for the entry of water into the sugar solution.

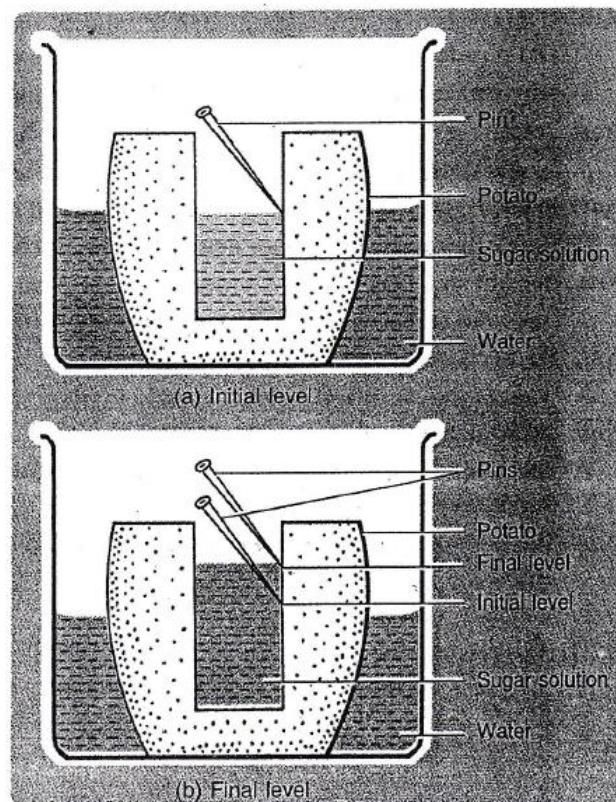


Fig. 3.2 Demonstration of osmosis by potato osmometer

## Explanation

- The potato cavity is surrounded by living cells.
- The plasma membrane of each cell inside the cell wall acts as a semipermeable membrane.

When potato osmometer is placed in water, water enters it through cell membrane of potato cells. This phenomenon is called endosmosis, i.e., water from the beaker (from its higher concentration) diffuses into cells (lower concentration). On the other hand, water from potato cells moves into the cavity containing sugar solution by the process of exosmosis. Hence, the level of sugar solution in the cavity has increased.

## Precautions

1. Make the lower end of potato flat so as to keep it stable in the beaker.
2. The cavity should be deep enough leaving only a thin layer of tissues between it and the base.
3. Sugar solution should be of higher concentration (10-20%) as compared to the sap of potato cells.

# Experiment on Absorption of Water

## Aim

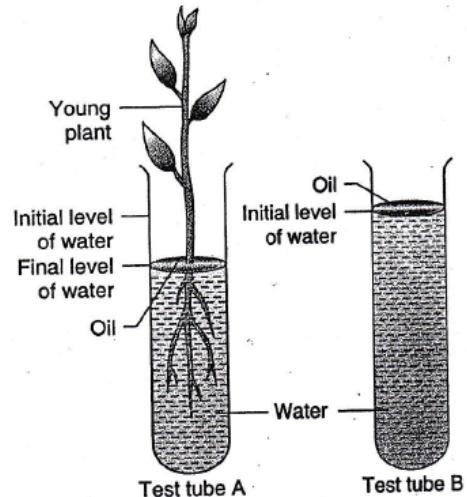
To show that roots absorb water

## Materials Required

Two test tubes, water, eosin dye, oil, young leafy plant

## Procedure

- Take two test tubes A and B. Fill them with dilute eosin solution (dye dissolved in water).
- Mark the level of water in both the test tubes.
- Pull a young leafy plant from the soil with its roots intact.
- Wash the soil particles with fresh water.
- Insert the roots into the test tube A immediately.
- Put a few drops of oil in both the test tubes to prevent any loss of water due to evaporation.
- Leave the test tubes for some time.



## Observation

The level of water in test tube B remains the same but it has fallen in test tube A.

## Inference

It shows that loss of water in test tube A is due to transpiration by leaves. Hence, water has been taken (absorbed) from the test tube by the roots.

Fig. 4.1 Experiment to show that roots absorb water

## Precautions

1. Only young green plant should be taken.
2. Insert the uprooted plant immediately in water in the test tube.
3. Cover the level of water in the tubes with a few drops of oil to avoid evaporation of water.

## Experiments on Photosynthesis

### Starch Test

#### BASIC CONCEPTS

- Green plants are autotrophic in nutrition. They make their food by the process of photosynthesis.
- Photosynthesis is the process by which green plants manufacture their food from carbon dioxide and water with the help of green pigment, chlorophyll, in the presence of solar energy (sunlight).
- Oxygen is released during photosynthesis.
- All animals depend on the organic matter or food manufactured by plants for survival.
- Green plants also purify air by removing carbon dioxide gas from it.
- Photosynthesis is a biochemical process in which oxidation of water and reduction of carbon dioxide takes place to form organic compound glucose.

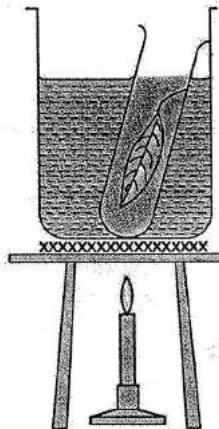


Fig. 6.1 Removal of chlorophyll from leaf

#### Destarching

For experiments on photosynthesis, the plant to be used should initially be destarched by placing it in the dark for 24 - 48 hours. During this period, all the starch from the leaves is removed and the leaves do not show the presence of starch.

#### Iodine Test (To test the leaf for starch)

Remove a leaf from a plant kept in dark and dip it in boiling water for 1-2 minutes. This will kill its cells. Now, boil the leaf in methylated spirit over a water bath till it becomes pale white due to the removal of chlorophyll. Leaf now becomes hard and brittle.

Place the leaf again in hot water to soften it. Then spread the leaf in a dish or on a white tile and pour iodine solution on it. Presence of starch is indicated by blue-black colour.

### Experiment No. 1

#### Aim

To show that light is necessary for photosynthesis

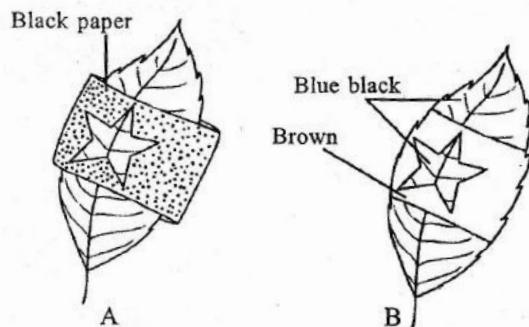
#### Materials Required

A potted plant with green leaves, strips of black paper, clips, iodine solution, a test tube, a beaker, methylated spirit and water

#### Procedure

- Take a potted plant and destarch its leaves by keeping it in dark for 48 hours.

- Test one of the leaves by iodine test to ensure that it is destarched.
- Take strips of black paper and cover both the upper and lower surfaces of the leaf. Clip the strips tightly as shown in the figure.
- Detach the leaf and remove black paper strips. Now test for the presence of starch with iodine solution.



*A – Covered leaf; B – Leaf after iodine test*

*Fig. Light is necessary for photosynthesis,*

### **Observation**

Only the part of the leaf that received light turns blue-black showing the presence of starch in it.

### **Inference**

This shows that light is essential for photosynthesis.

### **Precautions**

1. Plant used in the experiment should be properly destarched.
2. Black paper should be fixed tightly on both the sides.

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## **Experiment No. 2**

### **Aim**

To show that carbon dioxide is necessary for photosynthesis

### **Materials Required**

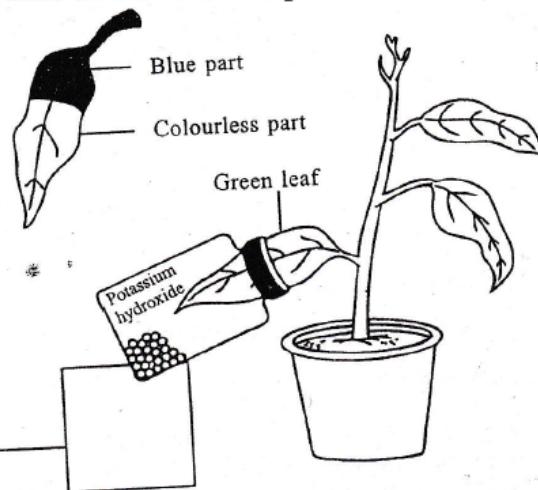
A green destarched plant, a wide-mouthed bottle, a split cork, caustic potash (KOH) solution, a clamp stand, iodine solution and water

### **Procedure**

- Take a destarched plant and on one of its leaves perform iodine test to ensure that the plant is destarched.
- Insert one-half of a leaf through the split cork into the wide-mouthed bottle containing a little KOH solution.
- The leaf should be kept half inside the bottle and half outside the bottle.
- Make connections airtight by applying vaseline.
- Place the set-up in the sunlight for 4–6 hours.
- Remove the leaf and perform iodine test for starch with this leaf in usual manner.

## Observations

The part of leaf inside the wide-mouthed bottle does not turn blue-black while the part of leaf that was outside shows positive starch test, i.e., turns blue-black.



**Fig.** Experiment showing that the carbon dioxide is necessary for photosynthesis.

## Inference

This shows that carbon dioxide is necessary for photosynthesis.

## Explanation

The part of leaf inside the wide-mouthed bottle did not form starch because no CO<sub>2</sub> was available to it (as CO<sub>2</sub> was absorbed by KOH solution). Thus, it does not turn blue-black.

## Precautions

1. Make the connections airtight.
2. Leaf in use should be destarched properly.
3. The inner part of the leaf should not be in contact with KOH solution.
4. Keep the set-up in sunlight for 4-6 hours.

## Experiment No. 3

### Aim

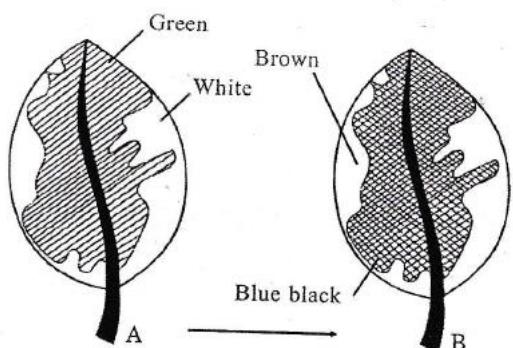
To show that chlorophyll is necessary for photosynthesis

### Materials Required

A potted plant with variegated leaves (*Coleus* or *Croton*), iodine solution, a beaker, methylated spirit and water

### Procedure

- Take a plant (*Coleus* or *Croton*) with variegated leaves having chlorophyll in patches.
- Destarch the plant by keeping it in dark for about 48 hours.
- Place the plant again in sunlight for 4-6 hours.
- Detach a leaf from the plant. Draw its outline on a paper, marking the distribution of chlorophyll (green and nongreen areas).
- Test the leaf for starch with iodine solution as in Experiment 6.1.



A - Croton leaves;  
B - Croton leaf after iodine treatment

**Fig. Chlorophyll is necessary for photosynthesis**

### **Observation**

Only the parts which were green initially, turn blue-black with iodine solution.

### **Inference**

Starch was present only in the green parts of the leaf. Nongreen parts had no chlorophyll and no starch was formed in them, i.e., no photosynthesis has occurred. It proves that chlorophyll is necessary for photosynthesis.

### **Precautions**

1. Mark the green and nongreen areas of variegated leaf clearly.
2. Expose the leaf to sunlight for 4-6 hours before testing for starch.
3. Keep the leaf in boiling water before dipping in alcohol.
4. Wash the leaf for softening before iodine test.

## Experiment No. 4

### **Aim**

To show that oxygen is evolved during photosynthesis

### **Materials Required**

Aquatic plant like *Hydrilla*, a large beaker, funnel with a short stem, a test tube and pond water

### **Procedure**

- Take some *Hydrilla* plants in a beaker containing water.
- Cover the plants with the help of an inverted funnel. Keep the funnel slightly raised from the bottom of the beaker for free flow of water.
- Invert a test tube full of water over the stem of the funnel.
- Place the set-up in sunlight or bright-light for few hours.

### **Observations**

- Soon gas bubbles are seen arising out of the plant.
- These bubbles rise upwards and get collected in the test tube. As a result water level lowers down in the test tube.

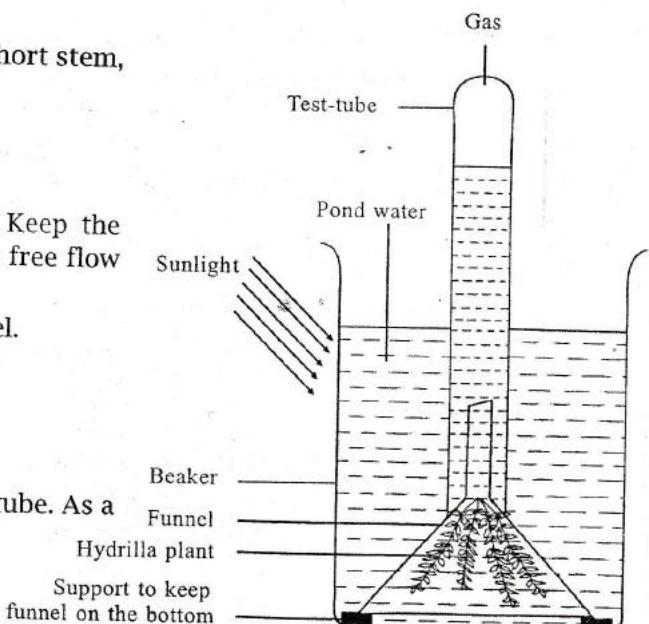


Fig. An experiment to show that oxygen is given out during photosynthesis

- When sufficient gas is collected in the test tube, test it with the help of a glowing splinter.
- The glowing splinter bursts into a flame, showing presence of oxygen in the test tube.

### **Inference**

This experiment shows that oxygen is produced during photosynthesis.

### **Precautions**

1. Keep the funnel slightly raised above the bottom of the beaker.
2. The set-up should be kept in sunlight or bright light for few hours.
3. The test tube should be full of water.

## Experiments on Transpiration

### **EXPERIMENT – 1**

**Object :** TO SHOW THAT PLANTS TRANSPIRE.

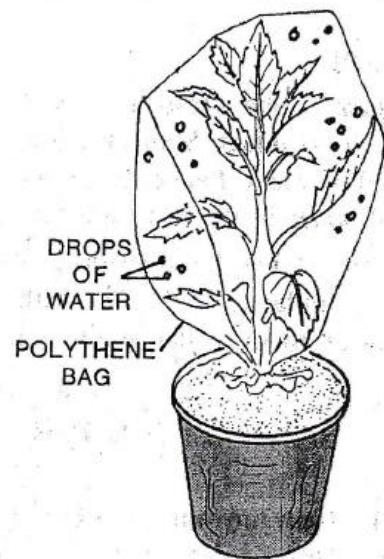
**Requirements :** A medium-sized well-watered potted leafy plant and a polythene bag.

For setting up, cover the plant with a transparent polythene bag and tie its mouth round the base of the stem [3.1]. Leave the plant in sunlight for an hour or two.

**Observation :** Drops of water will soon appear on the inner side of the bag due to the saturation of water vapour given out by the leaves.

**Control :** A similar empty polythene bag with its mouth tied and kept in sunlight will show no drops of water.

**Conclusion :** The aerial parts of the plant give out water as water vapour i.e. perform transpiration.



*Fig. 3.1 An experiment to demonstrate transpiration by a green plant.*

## ✓ EXPERIMENT - 2

### TRANSPIRE

**Object :** TO SHOW THAT PLANTS RESPIRE THROUGH LEAVES (AN IMPROVED MODIFICATION OF THE PREVIOUS EXPERIMENT).

**Requirements :** Three bell-jars, two similar well-watered preferably broad-leaved potted plants, two large polythene bags, a cork sheet and cobalt chloride paper.

Set up the experiment as shown in Fig. 3.2.

Keep all the three bell jars in the sun and leave for about half an hour.

**Observation :** The first bell jar (A) will show *water vapour condensing* on its inner walls.

- The second bell jar (B) would also show a similar *condensation* and at the same time, the initially blue cobalt chloride paper in it would *turn pink*.

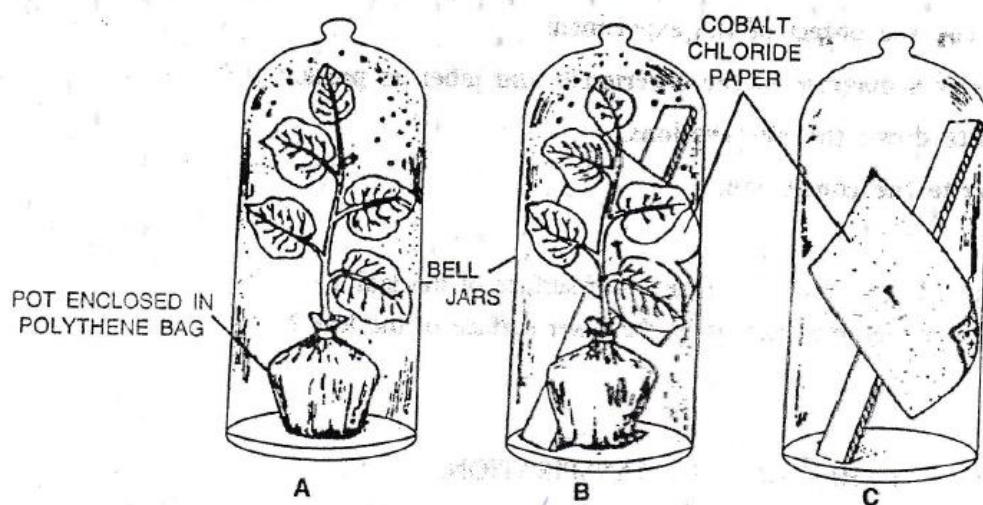


Fig. 3.2 A double demonstration of transpiration by the plant by the condensation of water vapour and cobalt chloride paper method.

- The blue colour of the cobalt chloride paper in the third bell jar (C) does not change at all and there are no water drops on the jar's inner walls either.

The third bell jar in this experiment is a control which proves that there was no moisture in the air.

**Conclusion :** The aerial parts of the plant give out water vapour (*transpiration*).

### **EXPERIMENT - 3**

**Object :** TO DEMONSTRATE UNEQUAL TRANSPERSION FROM THE TWO SURFACES OF A LEAF.

**Requirements :** A potted plant, cobalt chloride paper, glass slides and rubber bands.

Set up the experiment as shown in the figure.

Note how the two glass sheets are holding the cobalt chloride paper on the two sides of the leaf.

**Observation :** The piece of cobalt chloride paper which is facing the lower surface of the leaf turns pink in shorter time than the one on the upper surface.

**Conclusion :** More transpiration occurs from the lower surface of the leaf.

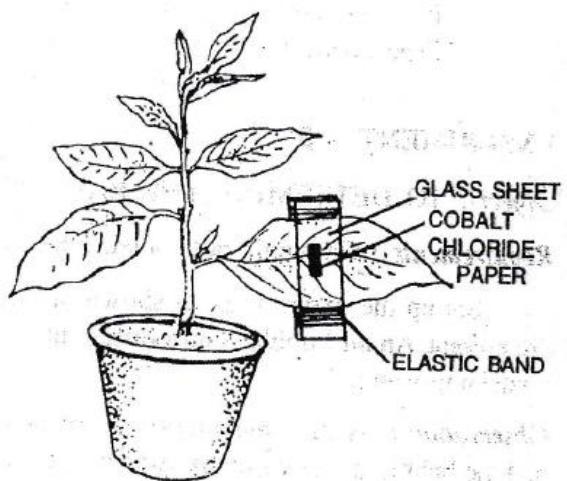


Fig. 3.3 Unequal transpiration from the two surfaces of a leaf.

### **Experiment no. 4**

**Object :** TO DETERMINE THE RATE OF TRANSPERSION (POTOMETER METHOD).

**Requirements :** Ganong's potometer, a beaker filled with water and a freshly taken twig of a plant (e.g. Coleus).

Set up the experiment as shown in Fig. 3.5. The entire apparatus is filled with water so that no air spaces are present. An air bubble is introduced into the horizontal graduated capillary tube which is dipping into the beaker containing water.

**Observation :** As the transpiration proceeds in the twig, a suction is set up which pulls the water from the beaker and the bubble in the capillary tube moves along. The readings on the capillary tube will give the volume of water lost in a given time. The air bubble can be brought back to its original position by releasing some more water into the capillary tube by opening the stop-cock.

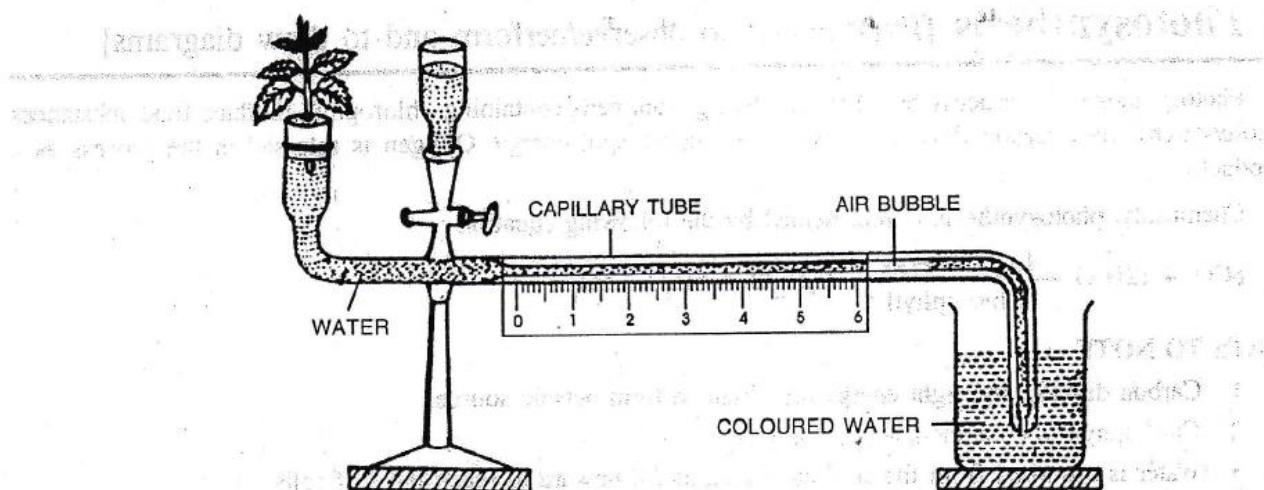


Fig. 3.5 A demonstration of rate of transpiration by potometer method.

**Conclusion :** The rate of respiration per unit time for the twig is calculated.

# Project Work: Class 10

2020



SUBJECT :	CHEMISTRY
Time to be Spent (___ Hours per day for ___ Days) :	1 hour for ten days
Work Specification :	Practical file
Materials / Resources Required :	Practical file
Instructions / Guidelines :	Presentation in Practical file should be good. Overwriting, scribbling, colour pen, whitener will result in deduction of marks.

## Any Other Information:

Date of submission: 11<sup>th</sup> June 2020

### PRACTICAL FILE

1. **Do Page no 6,7, 8-** Copy and Write 10 identification of gases as 1 experiment.
2. **Page no 12 –** as experiment no 02 (Inference from changes observed on dry heating of the salt)
3. **Page no 17,18,19 -**Experiment no 3 (test for sulphuric acid)
4. **Page no 21,22,23 and 24**-Experiment no 4 (Test for detection of anion)
5. **Page no 28 -** Experiment no 5 (Identification of acidic and alkaline solutions)
6. **Page no- 29 –** as Experiment no 6 (Identification of copper oxide and manganese di oxide)
7. **Page no 13 -**Experiment no 7 (Flame test).

Head of the Department / Subject Coordinator

Head of Shikhar

## **PROJECT WORK' 2020: Class 10**



<b>SUBJECT:</b>	<b>COMMERCIAL APPLICATIONS</b>
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<b>Time to be Spent (____ Hours per day for ____ Days):</b>	One hour for 10 days
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<b>Work Specification:</b>	<p>Assignments –</p> <ol style="list-style-type: none"><li>1. Study five different advertisements in any one media (print, television, audio) of the FMCG (fast moving consumer goods) such as Coke, Pepsi, Lux, Surf, Tide, etc. and explain their positive and negative points.</li><li>2. Write an essay on the role of the Central Bank (Reserve Bank of India) in any economy with special reference to the Indian scenario.</li></ol>
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<b>Materials / Resources Required:</b>	A-4 size ruled sheets, black pen (ball or gel), scale, stick file and commercial studies book.
<b>Instructions / Guideline:</b>	As given below.

### **Any Other Information:**

1. Use practical sheets with one side ruled and the other side blank. (Can use colored sheets also)

**Head of the Department / Subject Coordinator**

**Head of Shikhar**

2. First page will be the cover page. Write your name, class, section, subject, and to whom it is to be submitted.
3. Acknowledgement
4. Certificate
5. Index
6. Topic of the 1<sup>st</sup> project (Five Advertisements.)
7. Content (Stick pictures or any document on the blank side of the sheet.)
8. Conclusion
9. Topic of the 2<sup>nd</sup> Project (Reserve Bank of India)
10. Content
11. Conclusion
12. Bibliography
13. Only one Acknowledge, Certificate and Index is required for both the projects)

**Date of submission: 11 June 2020**

## **PROJECT WORK' 2020: Class 10**



<b>SUBJECT:</b>	<b>COMMERCIAL STUDIES</b>
<b>Time to be Spent (____ Hours per day for ____ Days):</b>	One hour for 10 days.
<b>Work Specification:</b>	<p>Project 1. Meet or telephonically call ten responsible persons of your town and ask them whether they know the rights of the consumers provided under the Consumer Protection Act. Prepare a list of rights known to each of the above mentioned persons. Also prepare a chart depicting the consumer rights.</p> <p>Project 2. Ask your parents how they prepare the monthly budget of your family, or else you prepare a budget for your family. Separately mention how much share of the budget is spent on your needs and for what purpose. Also separately show what are your expenses which can be curtailed down so as to reduce your share in the budget.</p>
<b>Materials / Resources Required:</b>	A-4 size ruled sheets, black pen (ball or gel), scale, stick file and commercial studies book.
<b>Instructions / Guideline:</b>	As given below

**Any Other Information:**

**Head of the Department / Subject Coordinator**

**Head of Shikhar**

1. Use practical sheets with one side ruled and the other side blank. (Can use colored sheets also)
2. First page will be the cover page. Write your name, class, section, subject, and to whom it is to be submitted.
3. Acknowledgement (**Only one Acknowledge and Certificate is required for both the projects**)
4. Certificate
5. Index (**In one sheet write the Index for both the projects**)
6. Topic of the 1<sup>st</sup> project (SURVEY OF KNOWLEDGE REGARDING CONSUMER RIGHTS)
7. Content (Stick pictures or any document on the blank side of the sheet.)
8. Conclusion
9. Bibliography
10. Topic of the 2<sup>nd</sup> Project (BUDGET)
11. Content
12. Conclusion

**Date of submission: 11 June 2020**

## Project Work: Class 10



<b>SUBJECT :</b>	<b>COMPUTER APPLICATION</b>
<b>Time to be Spent (___ Hours per day for ___ Days) :</b>	2 hours per day for 7 days
<b>Work Specification:</b>	Assignment File to be completed
<b>Materials / Resources Required:</b>	Computer with BlueJ and JDK installed, Printer, A4 Printing Sheets, Text Book, Ring File
<b>Instructions / Guidelines :</b>	<ul style="list-style-type: none"><li>• Complete first 10 Assignments from the assignment list shared.</li><li>• For each assignment, arrange printout of:<ul style="list-style-type: none"><li>➢ Problem Statement</li><li>➢ Coding</li><li>➢ Input / Output screen</li><li>➢ VDT</li></ul></li></ul> <p>Each Printout must have a footer as specified: Student name/class/ICSE 2021/Computer Application/Practical File</p>

**Any Other Information:** Please arrange black and white printouts.

\* In case you get any error in a program which you are unable to resolve, please mail it to [neha\\_thombre@sanskaarvalley.org](mailto:neha_thombre@sanskaarvalley.org)

**Date of submission:**

### JAVA ASSIGNMENTS TO BE COMPLETED FOR ICSE 2020 PRACTICAL FILE

**Head of the Department / Subject Coordinator**

**Head of Shikhar**

## **Number Problems/Menu Driven programs based on usage of loops/switch**

### **ASSIGNMENT -1**

Using the switch statement, write a menu driven program for the following:

- (i) To print the Floyd's triangle [Given below]

```
1
2 3
4 5 6
7 8 9 10
11 12 13 14 15
```

- (ii) To display the following pattern based on value of n.

For example if n=5 then print,

```
#@#@#
#@#@#
#@#
#@@
#
```

For an incorrect option, an appropriate error message should be displayed.

### **ASSIGNMENT -2**

**Write a program in Java to accept a number and check whether it belongs to the Fibonacci Series (sequence) or not.**

**Fibonacci Series:**

The Fibonacci Sequence is the series of numbers: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, ...

The first two numbers in the series is '0' and '1' and every next number is found by adding up the two numbers before it.

The 2 is found by adding the two numbers before it (1+1)

Similarly, the 3 is found by adding the two numbers before it (1+2),

And the 5 is (2+3),

and so on!

**Example:** the next number in the sequence above would be  $21+34 = 55$

Here is a longer list:

0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377, 610, 987, 1597, 2584, 4181, 6765, 10946, 17711, 28657, 46368, 75025, 121393, 196418, 317811, ...

### **ASSIGNMENT -3**

The International Standard Book Number (ISBN) is a unique numeric book identifier, which is printed on every book. The ISBN is based upon a 10-digit code. The ISBN is legal if  $1 \cdot \text{digit}_1 + 2 \cdot \text{digit}_2 + 3 \cdot \text{digit}_3 + 4 \cdot \text{digit}_4 + 5 \cdot \text{digit}_5 + 6 \cdot \text{digit}_6 + 7 \cdot \text{digit}_7 + 8 \cdot \text{digit}_8 + 9 \cdot \text{digit}_9 + 10 \cdot \text{digit}_{10}$  is divisible by 11.

Example: For an ISBN 1401601499

Sum= $1 \cdot 1 + 2 \cdot 4 + 0 \cdot 0 + 4 \cdot 1 + 5 \cdot 6 + 6 \cdot 0 + 7 \cdot 1 + 8 \cdot 4 + 9 \cdot 9 + 10 \cdot 9 = 253$  which is divisible by 11.

Write a program to:

- (i) input the ISBN code as a 10-digit number
- (ii) If the ISBN is not a 10-digit number, output the message “Illegal ISBN” and terminate the program
- (iii) If the number is 10-digit, extract the digits of the number and compute the sum as explained above.

If the sum is divisible by 11, output the message “Legal ISBN”. If the sum is not divisible by 11, output the message “Illegal ISBN”.

### **ASSIGNMENT 4:**

An Emirp number is a number which is prime backwards and forwards.

Example: 13 is an Emirp number since 13 and 31 are both prime numbers. Write a program to accept a number and check whether it is an Emirp number or not.

### **ASSIGNMENT 5:**

**Head of the Department / Subject Coordinator**

**Head of Shikhar**

Write a menu driven program in Java to provide the following options to generate and print output based on user's choice:

- (a) To input a number and check whether it is a NEON number or not
- (b) To print the REPUNIT series: 1, 11, 111, 1111, .... upto 'n' terms
- (c) To print the sum of factorial of first n terms, where n is input by the user. For example if n=5 then sum=1+2+6+24+120=153 which is the sum of  $1!+2!+3!+4!+5!$

A number is said to be NEON, if sum of all the digits of the square of the number is equal to the number itself. For example 9 is a NEON number.

(Workings: Square of 9 = 81. Sum of digits of square:  $8 + 1 = 9$ )

Write a main method to display the menu and to create an object of the class to call the two methods that display output as per the choices displayed in the menu.

For an incorrect menu choice an appropriate error message should be displayed.

### **Programs based on if ..else /switch conditional construct**

#### **ASSIGNMENT 6:**

A Credit card company allows a limit to spend Rs. 15000 to its clients. It also offers cash back facility according the table shown below. Input the amount spent by the user and display the cash back amount that he is entitled to.

Amount (in Rs.)	Cash Back (in Rs.)
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First 1000	100
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Next 2000	$200 + 2\% \text{ of amount exceeding } 1000$
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Next 4000	$400 + 4\% \text{ of amount exceeding } 3000$
Next 8000	$800 + 8\% \text{ of amount exceeding } 8000$

Write a program to declare the class 'Credit' that takes in the name of the client and the amount spent by him. Calculate the cash back amount and print it along with all the other input details.

(Assume there are 20 clients. Take details and print the requisite output for each of them one by one.)

## **ASSIGNMENT 7:**

An electronic shop has announced the following seasonal discount on purchase of certain items.

Purchase Amount in Rs.	Discount on Laptop	Discount on Desktop PC
0-25000	0.0%	5.0%
25001-57000	5.0%	7.5%
57001-100000	7.5%	10.0%
More than 100000	10.0%	15.0%

Write a program based on the above criteria to input name, address, amount of purchase, and type of purchase (L or 1 for Laptop and D or 2 for Desktop) by a customer. Compute and print the net amount to be paid the customer along with name and address.

[Hint : discount= (discount rate /100) \* amount of purchase

Net amount= amount of purchase – discount]

## **ASSIGNMENT 8:**

WRITE A PROGRAM TO ACCEPT A NUMBER FROM THE USER. THEN ASK HIM TO ENTER 1, 2 OR 3. IF HE PRESSES 1 DISPLAY A PATTERN AS SHOWN IN (A), IF HE

PRESSES 2 DISPLAY A PATTERN AS SHOWN IN (B), IF HE PRESSES 3 DISPLAY A PATTERN AS SHOWN IN (C), ELSE DISPLAY “INVALID CHOICE..

EXAMPLE: IF INPUT NUMBER IS: 6

THEN OUTPUT IS:

(A)	(B)	(C)
6 5 4 3 2 1	654321	6
54321	65432	65
4321	6543	654
321	654	6543
21	65	65432
1	6	654321

#### **ASSIGNMENT 9:**

Write a program in JAVA to find the Prime factors of a number.

Prime factors of a number are those factors, which are prime in nature and by which the number is completely divisible (1 will not be taken as prime number).

Few such numbers are: Prime Factors of 24 are 2, 2, 2, 3 Prime Factors of 6 are 2, 3

#### **ASSIGNMENT 10:**

Write a menu driven program to generate the sum of the following series as per the choice entered by the user.

$$1) \frac{x^2}{3!} - \frac{x^3}{4!} + \frac{x^4}{5!} - \dots \dots \dots \frac{x^n}{(n+1)!}$$

$$2) 99, 80, 63, 48 \dots \dots \text{ up to 10 terms}$$

**Evaluation of practical work (Assignments) will be done as follows:**

Criteria (Total 40 marks)	Class design /program (2 mark)	Variable description/program (2 marks)	Coding and Documentation/program (2 marks)	Execution OR Output/program (4 marks)

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## **PROJECT WORK' 2020: Class 10**

<b>SUBJECT:</b>	<b>COOKERY</b>
<b>Time to be Spent(Hrs/Day):</b>	<b>½ an Hours per day for 15 Days</b>
<b>Work Specification:</b>	<ol style="list-style-type: none"> <li>1. Balance Diet Plan for Different Age-Groups and Occupations</li> <li>2. Types of Kitchen equipment used for cooking in the kitchen</li> <li>3. Types of Kitchen, their advantages and disadvantages</li> <li>4. Types of Table service</li> </ol>
<b>Materials / Resources Required:</b>	Project file, writing material, a computer with wifi for research work.
<b>Instructions / Guideline:</b>	<p>Project file should have all the above information, if required, do research to collect data or material.  Organize your writing material.  Write in your own handwriting in the file; computer print-outs are not allowed.  Sub-headings: Title, Acknowledgement, Content, Observation, if applicable, Conclusion, Bibliography  Add pictures, photographs, press-release, wherever necessary.  Cover the File.  Write the project title, your name, Name of the School &amp; year – you can decorate your file, as much as you can.</p> <p><b>Practical File:</b> Write about the <b>Balanced Diet Plan For the following</b> in the practical file:</p> <ol style="list-style-type: none"> <li>1. Preschool children, School going children, teenager, Adults, Male, Female, Pregnant &amp; Lactating Women, Elderly people.</li> <li>2. People working for different organizations &amp; the type of work they do.</li> <li>3. Paste pictures of all the necessary equipments used in the kitchen with their uses.</li> <li>4.Types of Kitchen, their advantages and disadvantages(Paste pictures of all the types of kitchens)</li> <li>5.Types of Table service (Paste pictures of all the types of table services)</li> </ol>

**Any Other Information:** Please try to get information for all the age groups, gender, occupation and health status of a person their likes & dislikes and the necessary equipments used in the kitchen with their uses, Types of kitchens, Types of table services. Paste pictures where ever is required. Project file should have spiral binding.

**Date of submission: 11 June 2020**

**Head of the Department / Subject Coordinator**

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## **PROJECT WORK' 2020: Class 10**



<b>SUBJECT:</b>	<b>ECONOMIC APPLICATIONS</b>
<b>Time to be Spent (half an Hours per day for 20 Days):</b>	10
<b>Work Specification:</b>	<b>2 Projects on Topics mentioned in the scope of the Syllabus or any other relevant topics</b>
<b>Materials / Resources Required:</b>	A-4 Sheets (thick white / light colour sheets, one side rules one side plain), pencil, black-ink pen, scale, stick-file, internet, and Economics book
<b>Instructions / Guideline:</b>	<ol style="list-style-type: none"><li>1. The name of the student, subject and topics of the project should be mentioned on the first page.</li><li>2. It should be hand written in black ink.</li><li>3. Try to include diagrams and tables in the project.</li><li>4. The projects should be analytical.</li><li>5. All the projects will have common Acknowledgement, Certificate and Index.</li><li>6. Cover page, acknowledgement, certificate will be provided later.</li><li>7. Avoid unnecessarily decorating the project.</li><li>8. Every project will have an appropriate conclusion.</li><li>9. There will be only one bibliography for all the projects at the end.</li></ol>

**Any Other Information:**

**Date of submission:11 June 2020**

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## PROJECT WORK' 2020: Class 10



<b>SUBJECT:</b>	ENGLISH LITERATURE
<b>Time to be Spent (____ Hours per day for ____ Days):</b>	30 Minutes per day for 10 days.
<b>Work Specification:</b>	Research Project
<b>Materials / Resources Required:</b>	Project File/Textbooks, Internet
<b>Instructions / Guideline:</b>	<p><b><u>Assignment:</u></b></p> <p>You are required to do <b>three</b> assignments:</p> <ul style="list-style-type: none"> <li>A. Any <b>two</b> questions on the play, 'The Merchant of Venice'</li> <li>B. One question from poem</li> <li>C. One from short story.</li> </ul> <p>The entire project has to be completed in <b>1500 words</b>. You are free to divide them between the play, the poem and the short story in any way that suits you.</p> <p><b>Please remember</b> that these projects will be assessed for the ICSE Board examination and will constitute a part of the marks awarded for <b>Internal Assessment</b>.</p> <p>Also keep in mind that marks will be awarded for creativity, appropriate expression, vocabulary, content and presentation.</p>

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**A) Drama – The Merchant of Venice -- By W. Shakespeare.**

**[Any two]**

1. What does one understand about the friendships and bonding among the main male characters of the drama from the 1<sup>st</sup> and 2<sup>nd</sup> Acts of the play? Substantiate your answer with suitable examples.
  
2. What is the significance —both structurally and thematically—of the ring episode in the Trial and later scenes of the drama?
  
3. Shylock's speech, beginning, "Hath not a Jew eyes...?" is often called "Shylock's Defense." Write a speech from the perspective that Shylock is a villain; the other, from the perspective that Shylock is a victim. Find textual examples to support your claim.

**B. [Attempt one question on poem and one on the short story out of the choices given below]**

**Poem**

1. Is the poem 'The Heart of the Tree' by Henry Cuyler Bunner relevant in the present day world? Comment on how the idea conveyed in the poem relate to the society today.

**OR**

2. William Wordsworth once said that " ordinary things should be presented to the mind in an unusual way". How far is this statement true? Do you think the poem, *Daffodils* justifies the statement? Give examples from the poem to support your answer.

**Short Story**

- 1."Love is essential for human survival." In the light of this statement discuss the theme of the story 'An Angel in Disguise'

**OR**

	<p>2. The way of life and language differed between Muni and the Red faced man but they got along well and their conversation creates a lot of humour as well. Discuss with reference to the story, '<i>A Horse and Two Goats</i>'.</p>
<b>PROJECT GUIDELINES: ENGLISH</b>	
<b>GENERAL FORMAT</b> <ul style="list-style-type: none"> <li>1. It must be written on A4 size paper.</li> <li>2. Your full name and class must be written CLEARLY on the cover.</li> <li>3. Make the cover attractive.</li> <li>4. Index/ Table of Contents.</li> <li>5. Each item must begin on a fresh page.</li> <li>6. Put a Bibliography at the end.</li> <li>7. Overall presentation: layout/ neatness/ grammar, spellings/ illustrations/hand written.</li> <li>8. Final projects MUST be written LEGIBLY.</li> </ul>	

**Any Other Information:**

**Date of submission: 11 June 2020**

**Head of the Department / Subject Coordinator**

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## **PROJECT WORK' 2020: Class 10**



<b>SUBJECT:</b>	<b>ENVIRONMENTAL SCIENCE</b>
<b>Time to be Spent ( _____ Hours per day for _____ Days):</b>	2 Hours per day for 10 Days
<b>Work Specification:</b>	<p><b>Number of PROJECTS to be completed - 03</b>  <b>(For further details on project topics refer to ICSE syllabus/Rules and Regulation booklet.)</b></p>
<b>Materials / Resources Required:</b>	Transparent file, sheets, print out material, photographs, statistics, graphs, cutouts, tables etc.
<b>Instruction s / Guideline:</b>	<p style="text-align: center;"><b><u>General guidelines for completing projects</u></b></p> <p style="text-align: center;"><b>No. of Projects - 3</b></p> <p style="text-align: center;"><b>FOR COVER PAGE:</b></p> <div style="border: 1px solid black; padding: 5px; margin-left: 200px;">         THE SANSKAAR VALLEY SCHOOL          ENVIRONMENTAL SCIENCE PROJECT          NAME OF THE TOPIC:          NAME OF THE STUDENT:          STUDENT ID NUMBER:          CLASS &amp; SECTION:          SESSION:       </div> <p style="text-align: center;"> <b>*ACKOWLEDGEMENT – 1 PAGE</b>  <b>*INDEX WITH PAGE NUMBER – 1 PAGE</b>  <b>*INTRODUCTION OR PROJECT OVERVIEW – 1 PAGE</b>  <b>*CONTENT OR BODY FOR PROJECT- 20 PAGES OR MINIMUM 2500 WORDS WITH HEADINGS, SUBHEADINGS.</b>  <b>*CONCLUSION – 1 PAGE</b>  <b>*BIBLIOGRAPHY – MENTION COMPLETE LINKS WITH SITES- 1 PAGE</b>  <b>*ATTACH PRINT OUT MATERIAL IF TAKEN AFTER BIBLIOGRAPHY.</b>  <b>*STICK PHOTOGRAPHS WHERE EVER NECESSARY.</b>  <b>*SUPPORT YOUR PROJECT OR CASE STUDY WITH STATISTICS, GRAPHS, CUTOUTS, TABLES ETC</b>  <b>* USE BLACK INK TO WRITE. USE PROJECT SHEETS TO WRITE. PUNCH THEM AND FILE THEM.</b> </p>

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**Any Other Information:** Neatness and accuracy should be maintained while organizing the project file. The quality of the project work is more important than the volume of the assignment.

**Date of submission: 11 June 2020**

**Head of the Department / Subject Coordinator**

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## PROJECT WORK' 2020: Class 10

SUBJECT :	GEOGRAPHY
Time to be Spent ( ___ Hours per day for ___ Days) :	½ AN HOUR EVERYDAY
Materials / Resources Required :	A-4 Sheets, pencil, black-ink pen, scale, stick-file, internet and Geography book
Work Specification :	<p>Candidates will be required to prepare a project report on <u>Any One</u> topic. The topics for Assignments may be selected from the list of suggested assignments given below.</p> <p>Your SYLLABUS BOOK (Page No. 51) has the evaluation criteria. Please keep it in mind when you are going about with your project.</p> <p><b><u>SUGGESTED LIST OF ASSIGNMENTS:</u></b></p> <p><b>1. TRANSPORT</b> Impact of an effective transport network.</p> <p><b>2. ENVIRONMENT</b> Wildlife conservation efforts in India.</p> <p><b>3. INDUSTRY</b> Tourism as an industry and the economic benefits.</p>

**Instructions /  
Guidelines :**

- The project should include;
- **INDEX** (All topics and sub topics)
  - **ACKNOWLEDGEMENT** (People who have helped/inspired you for this project)
  - **INTRODUCTION** (Brief outline of the topic chosen)
  - **OBJECTIVE AND SCOPE** (Reason for choosing your topic and varied fields you would be touching upon)
  - **METHODOLOGY** ( It is the systematic, theoretical analysis of the methods applied to a field of study)
  - **MAIN BODY** (The core content of the topic chosen)
  
  - **CONCLUSION** (Your deductions and suggestions)
  
  - **BIBLIOGRAPHY** (Mention all your reference points)

**Any Other Information:** Neat and well researched projects would be appreciated.

The cover page should be Leaf green.

**Date of submission:**

**Head of the Department / Subject Coordinator**

**Head of Shikhar**

## PROJECT WORK' 2020: Class 10

<b>SUBJECT :</b>	<b>HINDI</b>
<b>Time to be Spent ( ___ Hour per day for ___ Days) :</b>	<b>1 Hour daily for 3 days</b>
<b>Work Specification :</b>	<b>ICSE PROJECT</b>
<b>Materials / Resources Required :</b>	<b>A-4 Size Paper, Blue Color Plastic File ,Books, Course Books, Internet</b>
<b>Instructions / Guidelines :</b>	<p>विशेष :-</p> <ol style="list-style-type: none"> <li>1. आपको जो विकल्प अपनी रुचि एवं सुविधानुसार सर्वाधिक सहज प्रतीत हो उसी विकल्प को चुनें। अपने परिश्रम से स्वयं परियोजनात्मक कार्य पूर्ण करें।</li> <li>2. तीन विषयों पर ही परियोजना कार्य पूर्ण कीजिए। वर्ग 'अ' से एक और वर्ग 'ब' से दो विकल्पों का चयन कर परियोजनात्मक कार्य तैयार करें।</li> <li>3. अपने कार्य के सौन्दर्य और प्रस्तुति हेतु सुन्दर व स्पष्ट लेखन में ही लिखने का प्रयास करें। चित्रों, कला, ऑडियो एवं वीडियो सी. डी. विभिन्न व्यक्तियों, पुस्तकों, समाचार पत्रों पाठ्यपुस्तक एवं मैगज़ीन आदि की सहायता से कार्य की गुणवत्ता बढ़ा सकते हैं।</li> <li>4. यदि आप किसी पुस्तक या इन्टरनेट से कोई जानकारी या सूचना लेते हैं तो पुस्तक आदि का नाम, पृष्ठ संख्या, वेबसाइट का नाम अवश्य लिखें। चित्र स्वनिर्मित अथवा कहीं से काटकर भी संलग्न कर सकते हैं। पृष्ठ के एक ओर ही लिखें।</li> <li>6. अवकाश कार्य आप सादे ए-4 आकार के कागज पर बना कर <u>नीले रंग</u> की प्लास्टिक फाइल फोल्डर में ही प्रस्तुत करें। अवकाश कार्य के लिए अंक दिए जाएंगे जो कि आपके वार्षिक परीक्षा परिणाम में सम्मिलित किए जाएंगे।</li> <li>7. परियोजनात्मक कार्य के प्रस्तुतीकरण का क्रम इस प्रकार हो –  <u>प्रथम पृष्ठ</u> –व्यक्तिगत परिचय  ( 1. विद्यालय का नाम, 2. सत्र, 3. स्कूल का लोगो, 4. हिन्दी परियोजना कार्य ,  5. विद्यार्थी का नाम, 6. कक्षा , 7. वर्ग , 8. शिक्षिका का नाम )  <u>द्वितीय पृष्ठ</u> – विषय सूची (क्रमांक, विषय, पृष्ठ क्रमांक )</li> </ol>

तृतीय पृष्ठ – आभार ज्ञापन

चतुर्थ पृष्ठ – संदर्भ सूचिका लेखक, पुस्तक आदि का नाम, पृष्ठ संख्या, वेबसाइट का नाम

पंचम पृष्ठ – परियोजना कार्य प्रारंभ

सहायतार्थ विकल्प :-

वर्ग 'अ'

(इस वर्ग में से किसी एक विकल्प का चयन कर 500 शब्दों में परियोजना कार्य तैयार करें।)

1—‘आधुनिक जीवन शैली दुख और विषाद का कारण है’ इस कथन के पक्ष अथवा विपक्ष में अपने विचार व्यक्त करें।

2—यात्रा हमेशा कुछ न कुछ अनुभव देती है। यह न केवल जीवन जीना सिखाती हैं बल्कि कई नए स्थानों की जानकारी भी हमें देती है। आज अगर संसार में हम इतना परिवर्तन देखते हैं तो यह किसी न किसी घुमांतू की देन है। आप ने यात्राओं से क्या अनुभव प्राप्त किया किसी एक यात्रा से प्राप्त अनुभव लिखिए।

3—आपको कुछ समकालीन उपन्यास की सूची दी जा रही है ये उपन्यास निश्चित ही आपको अपने समय को जानने समझने की दृष्टि देंगे। इनमें से किसी एक उपन्यास की संवेदना पर अपने विचार लिखिए।

उपन्यास-

‘वे वहाँ कैद हैं’ – 136 पृष्ठ लेखक – प्रियंवद – संवाद प्रकाशन

‘त्रिशूल’— लेखक – शिवमूर्ति – राजकमल प्रकाशन

4—‘हथेली पर सरसों जमाना’, ‘नाम बड़े और दर्शन थोड़े’, ‘हाथी के दाँत खाने के और और दिखाने के और होते हैं’ आदि लोकोक्तियों पर आधारित किसी एक पर मौलिक कहानी लिखिए।

5—आज हिन्दी में अनूदित विश्व कलासिक साहित्य सर्वसुलभ है, इन कहानियों को पढ़ कहानी पढ़ने के अपने अनुभवों को लिखकर साझा कीजिए।

सूची –

1. जिंदगी से प्यार और अन्य कहानियाँ – जैक लंडन – राजकमल प्रकाशन

2. कितने चाँद ज्यूपिटर के – एलिस मुनरो की कहानियाँ – संवाद प्रकाशन  
वर्ग 'ब'

(इस वर्ग में से किसी दो विकल्प का चयन कर 250 शब्दों में परियोजनात्मक कार्य तैयार करें।)

1—‘बहू की विदा’ एकांकी समाज में व्याप्त दहेज प्रथा को प्रदर्शित करती हुई एक कथा है। यदि प्रत्येक परिवार समझदारी से काम ले तो आज के युग में इस प्रथा का

चलन समाप्त हो सकता है। एकांकी को आधार बनाकर चित्रात्मक प्रस्तुति देते हुए बताइए कि विचारों का यह परिवर्तन क्यों आवश्यक है और इसके क्या लाभ हैं?

2—अपनी पाठ्य पुस्तक ‘नया रास्ता’ पुस्तक की समीक्षा कीजिए। उपन्यास के कथानक, संवाद तथा पात्रों को उस समीक्षा में सम्मिलित कीजिए।

3—‘मातृभूमि का मान’ एकांकी की ऐतिहासिक पृष्ठभूमि के आधार पर सारांश लिखिए।  
या

‘सूखी डाली’ एकांकी संयुक्त परिवार को संगठित करने की कथा है। यदि परिवार का मुखिया समझदारी से काम ले तो आज के युग में एकल परिवार का चलन समाप्त हो सकता है। दादाजी की चारित्रिक विशेषता पर प्रकाश डालते हुए संयुक्त परिवार के विघटन के कारण तथा निवारण पर प्रकाश डालिए।

**Any Other Information:** कार्य स्वच्छता से तथा सुन्दर लेख में ही करिए।

**Date of submission:** परियोजना कार्य जमा करने की अंतिम तारीख 11-06-2020 है।

**Head of the Department / Subject Coordinator**

**Head of Shikhar**

## PROJECT WORK' 2020: Class 10

SUBJECT :	HISTORY
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Time to be Spent ( ___ Hours per day for ___ Days) :	1 Hour for 5 days
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<b>Work Specification :</b>	<p><b>(CHOOSE ANY ONE OF THE FOLLOWING TOPICS)</b></p> <p><i>For any topic you choose prepare a project document that contains all the components specified below from point no. 4-12.</i></p> <p><b>Topic: Nazi Concentration Camps</b></p> <p>The term <i>concentration camp</i> refers to a camp in which people are detained or confined, usually under harsh conditions and without regard to legal norms of arrest and imprisonment that are acceptable in a constitutional democracy.</p>
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**1. Learning Objectives:**

To understand the violation of Human Rights in these camps on the pretext of the Anti-Semitic propaganda.

**2. Scope:**

- Life in a concentration camp
- Women during Holocaust
- Medical experiments
- Treatment to the handicaps
- Inside a Nazi Camp
- Gas chambers

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### **3. Learning outcomes:**

On completion of the project students should be able to understand the horrors of the concentration camps, the Anti-Semitic propaganda and the holocaust. They will also understand the extermination process – extermination by means of merciless forced labor. ‘Extermination by labor’ – as this “compromise” was called between those who called for immediate extermination and those who sought to exploit Jewish labor until their very end.



**OR**

### **Topic 2: Life sketch and contributions of Dr. Dr. A.P.J. Abdul Kalam.**

Indian scientist and politician who played a leading role in the development of India's missile and nuclear weapons programs. He was president of India from 2002 to 2007. Kalam wrote several books, including an autobiography, *Wings of Fire* (1999). Kalam has also won the prestigious Padma Bhushan and Padma Vibhushan for his contributions to ISRO and DRDO, as well as for his role as a scientific advisor to the Government of India. He was also awarded the Bharat Ratna (1997).

**1. Learning Objectives:**

The basic teaching of Dr. Kalam can help us in wiping off the malaise that exists in our present system of education. It may be said that the study of educational philosophy and thoughts of Dr. Kalam will illuminate the path and enlarge the scope of free thinking along new and unexplored lines.

**2. Scope:**

Early life and education

Career as a scientist

Presidency

Writings

Awards and honours

Religious and spiritual views

Death

Legacy

**3. Learning outcomes:**

The principle and philosophy of "High thinking, simple living " can be learnt from his life. The study of thinking on education system of A.P.J. Abdul Kalam will help effectively the present education system.

**OR**

**Topic 3: India's Independence and Partition.**

The Partition of India of 1947 was the division of British India into two independent dominion states, the Union of India and the Dominion of Pakistan. But the process of partition was attended by mass migration and ethnic violence that has left a bitter legacy to this day.

**1. Learning Objectives:**

To understand the perspective of the Partition which was a highly controversial arrangement and remains a cause of much tension on the Indian subcontinent today.

To understand the present-day bilateral relation between these two countries.

	<p><b><u>2. Scope:</u></b></p> <ul style="list-style-type: none"> <li>• Background</li> <li>• Self-government</li> <li>• Geographic partition, 1947</li> <li>• Law and order</li> <li>• Princely states</li> <li>• Independence, population transfer, and violence</li> <li>• Post-Partition migration</li> </ul> <p><b><u>3. Learning outcomes:</u></b></p> <p>To understand the present issues and its root causes in the subcontinent. It would also help to enrich information about the formation of our country.</p>

<b>Materials / Resources Required:</b>	Internet, Libraries, newspaper, magazines and Textbook
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<b>Instructions / Guidelines :</b>	<p><b><u>COMMON INSTRUCTIONS ( FOR BOTH THE TOPICS)</u></b></p> <p>4. <b><u>Acknowledgement:</u></b> People who have helped and inspired you in the making of the project.</p> <p>5. Cover Page</p> <p>6. Index</p> <p>7. <b><u>Introduction:</u></b> Brief outline of the topic chosen.</p> <p>8. <b>Content :</b> 20 pages</p> <p>9. The project should be <b><u>handwritten.</u></b></p> <p>10. <b><u>Pictures ( to support your content):</u></b> To be pasted or drawn neatly.</p>
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	<p><b>11. <u>Conclusion:</u></b> Your deductions and suggestions</p> <p><b>12. <u>Bibliography:</u></b> Mention the sources of reference.</p>
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### **Any other Information:**

#### **Evaluation**

Evaluation Criteria	Distribution of Marks
Process	4
Understanding, application of knowledge and Analysis	4
Presentation	4
Choice of Technique/ Detailed procedure	4
Analysis and Evaluation	4
Total	20

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# PROJECT WORK' 2020: Class 10



SUBJECT:	MATHEMATICS
Time to be Spent (...Hours per day for ...Days)	1 hour per day for 15 days
Work Specification:	During this Academic year (ICSE – 2021) you have to complete two assignments on different topics of mathematics. These assignments are to be submitted to your subject teacher.
Instructions / Guideline:	<p>1) You have to submit <b>Two</b> Assignments to your subject teacher.</p> <p>2) The assignments should be related to <b>different branches</b> of Mathematics e.g One from Statistics then Second from Geometry or Commercial Mathematics, Trigonometry or Mensuration etc.</p> <p>3) The assignment/project should be ideally between 12 to 20 pages (excluding cover page, Index and bibliography). A good project must have:</p> <ul style="list-style-type: none"> <li>• Cover Page [It includes School's name, Mathematics project, Topic/topics, Name of the Student, ID, Class and section]</li> <li>• Introduction (what the assignment is about/ what problem is being tackled)</li> <li>• Main content (how problem is being tackled)</li> <li>• Conclusion &amp; Analysis (what is the solution of the problem)</li> <li>• Bibliography</li> </ul> <p><i>(Use of computer for research and design purposes will be appreciated).</i></p> <p><b><u>Some suggested/recommended topics are-</u></b></p> <p>1) Observe and record various <b>mathematical patterns</b> in nature /architecture/designs/floors and comment on their <b>mathematical significance. (Geometry)</b></p> <p>2) Survey of various types of bank accounts (Savings Account, Fixed Deposit, Current Account, Recurring Deposit)</p>

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	<p>Which bank is giving the best offer under the scheme of R.D. for a monthly deposit of rupees 1200/- for 3 years.</p> <p><b>(Com. Mathematics)</b></p> <p>3) Comparative newspaper coverage of different items: -</p> <ul style="list-style-type: none"> <li>• Crime</li> <li>• Education</li> <li>• Sports</li> <li>• Social Awareness</li> <li>• Stock Market/Business</li> <li>• Celebrity</li> </ul> <p>✓ Consider at least three different newspapers      ✓ Draw the pie-charts for the data you have collected.      ✓ Use one graph sheet for comparison</p> <p><b>(Statistics)</b></p> <p>4) To use a Newspaper/News Channel to study and report on <b><i>Shares and Dividend of 5 different companies:</i></b></p> <ul style="list-style-type: none"> <li>• Tata Motors</li> <li>• Reliance Industries</li> <li>• Indian Oil Corporation</li> <li>• State Bank of India</li> <li>• Bharat Petroleum</li> </ul> <p>Also find the change in annual income of a person who invests same amount of money (2.5 lacs to 3.5 lacs) in any of the two different firms.</p> <p><b>(Com. Mathematics)</b></p> <p>5) Make a Mathematical Instrument Clinometer for measuring the angle of Elevation/Depression of an object and Calculate the height of an object using it.</p> <p><b>(Trigonometry)</b></p> <p>6) Consider different sequences and verify that they are Arithmetic Progression by paper cutting and Paper folding activity. You can Use Graph Papers, Glazed Papers or colored craft papers etc. Also verify <math>\sum n = \frac{n(n+1)}{2}</math> by graphical method.</p> <p><b>(Algebra)</b></p> <p>7) Design a layout plan of your dream house/Shop/Mall and find its Area.</p> <p><b>(Mensuration)</b></p> <p>8) Use at least three 3 dimensional shapes - Right circular Cylinder, Right circular Cone, Sphere, Hemisphere, Cube or Cuboid to design a shape. Also find the Surface area and Volume of it. <b>(Mensuration)</b></p>
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**Any Other Information: Other Information:**

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- Guidelines for marking the assignment in mentioned on Page no. 79 in Scope of Syllabus (ICSE-2021)
- Parameters for Assessment are: -
  1. Preparation/ Selection of a well-defined problem
  2. Use of Mathematical concepts
  3. Accuracy/Computation of data
  4. Presentation
  5. Understanding of the concept
  6. Creativity
- ***In case of any doubt or difficulty while doing your project, you can contact your subject teacher.***

**Date of submission: First day of reporting (in June)**

## **PROJECT WORK' 2020: Class 10**



<b>SUBJECT:</b>	<b>PHYSICS</b>
<b>Time to be Spent (_1 - 2 Hours per day for ___ Days):</b>	<b>(at least 1 hour per day for 10 days)</b>
<b>Work Specification:</b>	<b>Project file Only on Refraction Chapters covering Glass slab, Glass Prism and all topics from refraction and ICSE physics paper of last TEN YEARS EXAMS (2010-19). According to the syllabus covered till 14th April 2020.</b>
<b>Materials / Resources Required:</b>	<p><b>Solved LAST TEN YEARS ICSE PAPER according to the covered portion for the month of March to April 2020 and <u>write it in the separate note book or file or in any Extra Practical file.</u></b></p> <p><b>(All Ten years Question regarding REFRACTION FROM GLASS SLAB TO PRISM &amp; LENS).</b></p> <p><b>Project file with proper cover page can be written in inter leaf pages/ or / practical register / or/ in spiral binding.</b></p> <p><b>Not needed now.</b></p> <p><b>One work sheet is attached on REFRACTION. Please draw all ray diagrams in the last pages of PROJECT FILE. Or You can Draw all ray diagrams in spiral binding file.</b></p>
<b>Instructions / Guideline:</b>	<ol style="list-style-type: none"> <li><b>1. Projects should be hand written with proper diagrams.</b></li> <li><b>2. Last Ten-year questions from full refraction of light.</b></li> </ol>

### **Any Other Information:**

**Date of submission: 11 June 2020 Only TEN years Question answers on full refraction.**

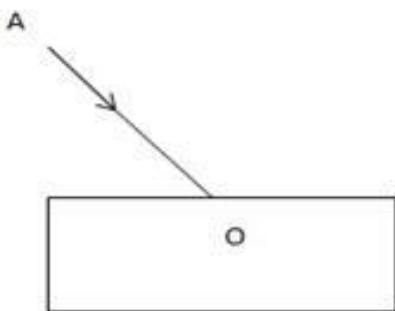
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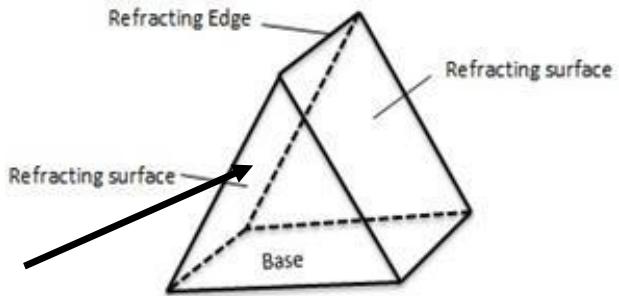
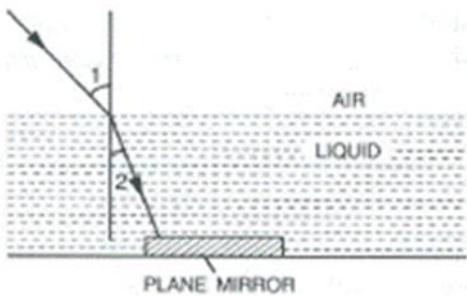
## WORK SHEET ON RAY DIAGRAMS.

Complete the all ray diagrams of the followings:

- Show the Lateral deviation for Glass slab. [Ray from air to Glass slab then to air till emerges out].



- Complete the ray diagrams.



- Draw the ray diagram to explain refractive index of a medium related to the real and apparent depths of an object in that medium? [Only Proper ray diagram]
- Draw a ray diagram to show the appearance of a stick partially immersed in water. [Container is partially filled with water. Explanation is not needed]



- Complete all ray diagrams of the following on the basis of proper principle.

