

Date: 27.04.2020

**COMPUTER (HOME ASSIGNMENT – 3)
CLASS – 8**

SOLUTION OF HOME ASSIGNMENT – 2

1. Define Operating system with example.

Ans: - Operating System is system software that works as an interface between a user and the computer hardware. The primary objective of an o/s is to make computer system suitable to use and to utilize computer hardware in an efficient manner. The operating system performs the basic tasks such as receiving input from the keyboard, processing instructions and sending output to the screen.

Examples: MS-Windows - 98/XP/Vista/10, iOS, LINUX, UNIX, MS- DOS, OS/2 and Mac OS.

2. What is the purpose of an operating system?

Ans: - An Operating System acts as a communication bridge (interface) between the user and computer hardware. The purpose of an operating system is to provide a platform on which a user can execute programs in a convenient and efficient manner.

3. What is User interface?

Ans: - An interface is a set of commands or menus through which a user communicates with a program. It is the junction between a user and a computer program.

4. Write the full form of – CUI and GUI.

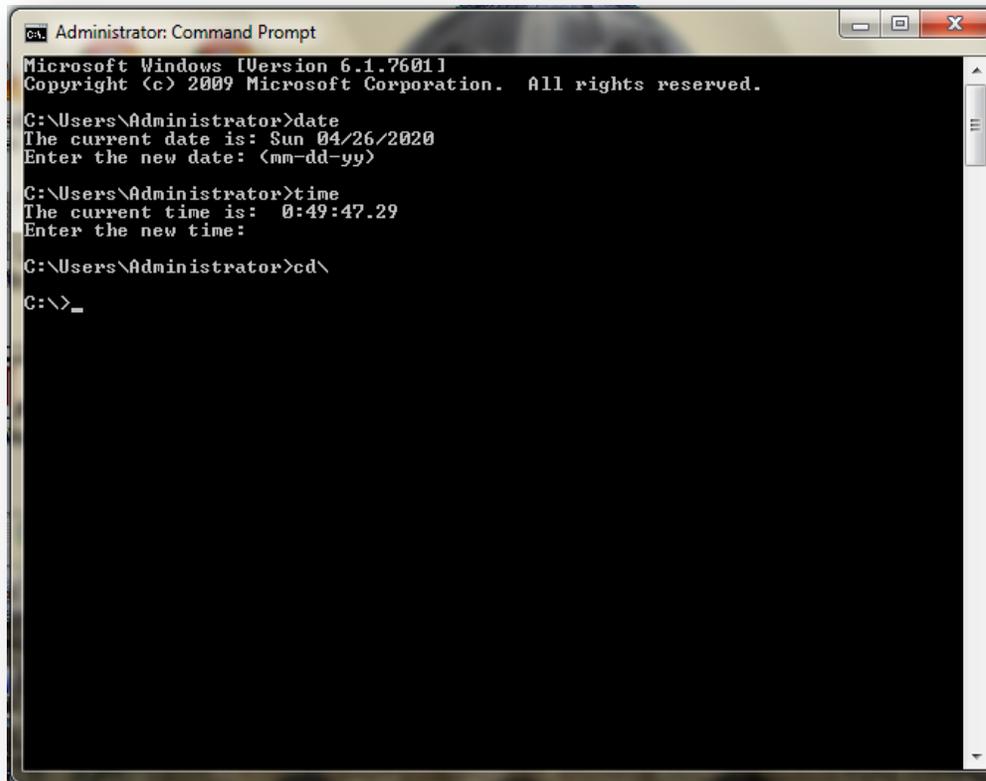
Ans: - CUI - Character User Interface.

GUI - Graphical User Interface.

**CHAPTER: 1 (OPERATING SYSTEM & GUI)
STUDY MATERIAL NO. – 1.3**

Character User Interface (CUI)

Character user interface or command-line user interface, CUI is a way for users to interact with computer programs. It works by allowing the user (client) to issue commands as one or more lines of text to a program, it means that you have to type commands to interact with the computer. Examples of CUIs are MS-DOS, Apple DOS.

A screenshot of a Windows Command Prompt window titled "Administrator: Command Prompt". The window shows the following text:

```
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\Administrator>date
The current date is: Sun 04/26/2020
Enter the new date: <mm-dd-yy>

C:\Users\Administrator>time
The current time is: 0:49:47.29
Enter the new time:

C:\Users\Administrator>cd\
C:\>_
```

Advantages Character user Interface (CUI):

- If the user knows the correct commands then this type of interface can be much faster than any other type of interface.
- This type of interface needs much less memory (Random Access Memory) in order to use compared to other types of user interfaces.
- This type of interface does not use as much CPU processing time as others.
- A low resolution, cheaper monitor can be used with this type of interface.
- A CUI does not require Windows to run.

Disadvantages Character user Interface (CUI):

- For someone who has never used a CUI, it can be very confusing.
- Commands have to be typed accurately. If there is a spelling mistake then the command will not respond or fail.
- There are a large number of commands which need to be learned.
- User can't just guess what the instruction might be and user can't just 'have a go'.

5TH HOME ASSIGNMENT – 2020-2021

CLASS –VIII SUBJECT – ENGLISH LANGUAGE

DATE – 27.04.20

(SOLUTIONS TO THE EXERCISES OF CHAPTER- 3 ADJECTIVES DATE- 24.04.20 .)

HOME ASSIGNMENTS

EXERCISE 1. Change the following sentences into the other two forms of degree wherever possible :-

1. Our house in the village is the oldest of all.

Ans:- Our house is older than any other house in the village . (C)

Ans:- No other house in the village is as old as our house . (p)

2. She is more talkative than Kim .

Ans:- Kim is not as talkative as she . (P)

3. Sheen is not as diligent as Shiny .

Ans :- Shiny is more diligent than Sheen . (C)

4. Hard work is the best bet .

Ans:- Hardwork is better than any other bet . (C)

Ans:- No other bet is as good as hardwork . (P)

5. Jason plays chess better than any other boy .

Ans :- Jason is the best chess player . (S)

Ans:- No other boy plays chess as good as Jason . (P)

EXERCISE 2. Rewrite the following according to the instructions given after each :-

1. A rainbow is one of the most beautiful sights . (Begin : Very few sights.....)

Ans:- Very few sights are as beautiful as a rainbow .

2. He is not the best boy in the class . (Begin: He is not better.....)

Ans:- He is not better than most other boys in the class .

3. The aeroplane flies faster than birds .(End :as the aeroplanes .)

Ans:- Birds do not fly as fast as the aeroplane .

4. Rose is the loveliest of all flowers . (Use : **lovelier instead of the loveliest**)

Ans:- Rose is lovelier than any other flower .

5. The pen is mightier than the sword . Begin : The sword.....)

Ans:- The sword is not as mighty as the pen .

6. Ali is not so strong as Ahmad . (Begin : Ahmad is)

Ans:- Ahmad is stronger than Ali .

7. Very few boys are as hardworking as Kalam . (Begin : Kalam is)

Ans:- Kalam is one of the most hardworking boys .

CHAPTER -4 DETERMINERS

Determiners are words that modify the NOUNS that follow them . They help to identify which particular person or thing is being referred to .e.g. The man lost his wallet .

In the given example, the words –**the** and **his** come before nouns and help to determine or identify the nouns that follow .

Determiners are of TWO kinds – **SPECIFIC DETERMINERS and **GENERAL DETERMINERS****

Specific determiners help us to identify which particular persons or things are being referred to . e.g. My dog chased the thief .

SPECIFIC DETERMINERS -

Articles - the

Demonstratives –this , that, these, those

Possessives – my, our, your, his, her, its, their

Quantifiers –one, two, ten, twenty, once, twice, last, next

Interrogatives – what, which, whose

USE OF SPECIFIC DETERMINERS

As the definite Article -

1. Before a noun when it is repeated after it has been used once . e.g. A woman and a girl were walking along a dusty road . The woman carried a bundle of dry grass on her head and the girl carried a pitcher of water on her head .

2. When it is clear from the situation or conversation which person or thing we mean. e.g. The headmistress is in the auditorium .

3. Before a noun which is one of its kind .e.g. the sun ; the earth

4. When a singular countable noun is used to indicate a who;e class . e.g. The dolphin is an intelligent animal .

5. With plural nouns and uncountable nouns when we talk about something specific .e.g. Please pass the salt .

the is also used before names of rivers, oceans, newspapers, books,public buildings, trains, ships, with families, with adjectives in the superlative form, with ordinal numbers etc.

HOME ASSIGNMENT

Fil in the banks with the article the . put a cross where you feel it is not required :-

1. _____ sun threw an orange glow onto the ocean water .

2. _____ Himalayas are _____ highest mountain range in the world . They protect _____ India from _____ icy winds coming from _____ centra Asia and People’s Republic of China. Many beautiful cities and hill resorts like _____ Shimla, _____ Rishikesh are situated in _____ Himalayas .

3. She was as attractive in real life as on _____ screen .
4. _____ Australia is _____ home of _____ kangaroos .
5. _____ train leaves _____ Meerut at five in _____ morning .
6. _____ expedition sailed out into _____ Pacific yesterday .
7. _____ Chawlas were not in _____ house .
8. She dropped _____ curry on _____ table .
9. We stopped _____ van in front of _____ bakery .
10. He wasted a lot of money in _____ past .

HOME ASSIGNMENT (5)
CLASS 8-MATHEMATICS

DATE: 27/04/2020

CHAPTER-3 (SQUARES AND SQUARE ROOTS)

Finding Square Roots of a number by division method:

Finding the square roots by repeated subtraction or by prime factorization is useful for small numbers. But when numbers are large and factorization is not easy, then finding the square roots by these two methods becomes lengthy and difficult.

We find the square root of large numbers by 'Long Division Method'.

Example 1. Find the square root of the following numbers:

(i) 729

(ii) 7056

(iii) 55696

(iv) 288369

Solution. (i) Steps

1. Place a bar (or arrow) over every pair of digits from right to left (\leftarrow) i.e. starting from unit's digit. If the number of digits is odd, then the left most digit too will have a bar.

Each pair of digits and then remaining one digit (if any) on the extreme left is called **period**.

2. Take the first pair of digits or the single digit as the case may be. In this case, it is the digit 7. Find the greatest number whose square is less than or equal to 7. Such a number is 2. Write 2 on the top in the quotient and also in the divisor. Subtract 2^2 i.e. 4 from 7. The remainder is 3.
3. Bring down the pair of digits under the next bar (i.e. 29 in this case) to the right of the remainder. So the new dividend is 329.
4. Double the quotient (i.e. 2 in this case) to get 4 and enter it with a blank on its right at the place of new divisor.
5. Find the largest possible digit to fill the blank which will also become the new digit in the quotient, such that when the new divisor is multiplied by the new digit in the quotient the product is less than or equal to the dividend. In this case $47 \times 7 = 329$. So we choose the new digit as 7. Place 329 under 329. Subtract and get remainder 0.

	2	7
	2	7 29
	-4	↓
	47	3 29
	-3 29	-
		0

$\therefore \sqrt{729} = 27$

(ii) Steps

1. Place a bar over every pair of digits from right to left (\leftarrow).
2. Take the first pair of digits. In this case, it is 70. Find the greatest number whose square is less than or equal to 70. Such a number is 8. Write 8 on the top in the quotient and also in the divisor. Subtract 8^2 i.e. 64 from 70. The remainder is 6.
3. Bring down the pair of digits under next bar (i.e. 56 in this case) to the right of the remainder. So the new dividend is 656.
4. Double the quotient (i.e. 8 in this case) to get 16 and enter it with a blank at the place of new divisor.
5. Find the largest possible digit to fill the blank which will also become the new digit in the quotient, such that when the new divisor is multiplied by this new digit in the quotient the product is less than or equal to the dividend. In this case $164 \times 4 = 656$. So we choose new digit as 4. Place 656 under 656. Subtract and get remainder 0.

	(8) 4	
8	70	56
	-64	↓
164	6	56
	-6	56
		0

$$\therefore \sqrt{7056} = 84$$

(iii) Steps

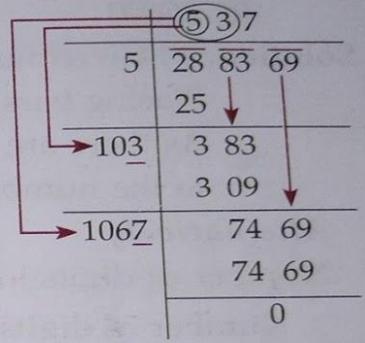
1. Place a bar (or arrow) over every pair of digits from right to left (\leftarrow).
2. Take the first pair of digits or the single digit as the case may be. In this case, it is the digit 5. Find the greatest number whose square is 5 or less than 5. Such a number is 2. Write 2 on the top in the quotient and also in the divisor. Subtract 2^2 i.e. 4 from 5. The remainder is 1.
3. Bring down the pair of digits under the next bar (i.e. 56 in this case) to the right of the remainder. So the new dividend is 156.
4. Double the quotient (i.e. 2 in this case) to get 4 and enter it with a blank on its right at the place of new divisor.
5. Find the largest possible digit to fill the blank which will also become the new digit in the quotient, such that when the new divisor is multiplied by the new digit in the quotient the product is less than or equal to the dividend. In this case $43 \times 3 = 129$, so we choose the new digit as 3. Place 129 under 156. Subtract and get the remainder 27.
6. Bring down the pair of digits under the next bar (i.e. 96 in this case) to the right of the remainder. So the new dividend is 2796.
7. Double the quotient (i.e. 23 in this case) to get 46 and enter it with a blank on its right at the place of new divisor.
8. Find the largest possible digit to fill the blank which will also become the new digit in the quotient, such that when the new divisor is multiplied by this new digit in the quotient the product is less than or equal to the dividend. In this case $466 \times 6 = 2796$. So we choose the new digit as 6. Place 2796 under 2796. Subtract and get the remainder 0.

	(2) 3 6	
2	5	56 96
	4	↓ ↓
43	1	56
	1	29
466	27	96
	27	96
		0

$$\therefore \sqrt{55696} = 236$$

(iv) Steps

1. Place a bar over every pair of digits from right to left (\leftarrow).
2. Take the first pair of digits. In this case, it is 28. Find the greatest number whose square is 28 or less than 28. Such a number is 5. Write 5 on the top in the quotient and also in the divisor. Subtract 5^2 i.e. 25 from 28. The remainder is 3.
3. Bring down the pair of digits under the next bar (i.e. 83 in this case) to the right of the remainder. So the new dividend is 383.
4. Double the quotient (i.e. 5 in this case) to get 10 and enter it with a blank at the place of new divisor.
5. Find the largest possible digit to fill the blank which will also become the new digit in the quotient, such that when the new divisor is multiplied by this new digit in the quotient the product is less than or equal to dividend. In this case $103 \times 3 = 309$, so we choose the new digit as 3. Place 309 under 383 and get the remainder 74.
6. Repeat the process of steps 3, 4 and 5. Remainder is 0.



$$\therefore \sqrt{288369} = 537$$

ESTIMATING THE NUMBER OF DIGITS

To estimate the number of digits in the square root of a perfect square. Observe the following:

(i) $\sqrt{729} = 27$

(ii) $\sqrt{21904} = 148$

(iii) $\sqrt{106929} = 327$

Observation 1

(i) In 729, there are two bars and number of digits in its square root is 2.

(ii) In 21904, there are three bars and number of digits in its square root is 3.

(iii) In 106929, there are three bars and number of digits in its square root is 3.

Thus, we can see that there is a relation between number of bars and number of digits in the square root of a perfect square and

number of digits in square root = number of bars.

Observation 2

(i) Number of digits in 729 = 3 (odd)

and number of digits in its square root = $\frac{3+1}{2} = 2$

(ii) Number of digits in 21904 = 5 (odd)

and number of digits in its square root = $\frac{5+1}{2} = 3$

(iii) Number of digits in 106929 = 6 (even)

and number of digits in its square root = $\frac{6}{2} = 3$

Thus we can say that, if a perfect square is of 'n' digits, then its square root will have $\frac{n}{2}$ digits if n is even or $\frac{n+1}{2}$ digits if n is odd.

Example 2. Without calculating square roots, find the number of digits in the square root of the following numbers:

(i) 25600

(ii) 100000000

(iii) 368645

Solution. (i) Given number is 25600

Placing bars over it, we have $\overline{25600}$

As there are 3 bars,

so the number of digits in its square root is 3.

Alternatively

Number of digits in 25600 = 5 (odd)

\therefore Number of digits in its square root = $\frac{5+1}{2} = \frac{6}{2} = 3$.

(ii) Given number is 100000000

Placing bars over it, we have $\overline{100000000}$

As there are 5 bars,

so the number of digits in the square root of 100000000 = 5.

Alternatively

Number of digits in 100000000 = 9 (odd)

\therefore Number of digits in its square root = $\frac{9+1}{2} = \frac{10}{2} = 5$.

(iii) Given number is 368645

Placing bars over it, we have $\overline{368645}$

As there are 3 bars,

so the number of digits in the square root of 368645 = 3.

Alternatively

Number of digits in 368645 = 6 (even)

\therefore Number of digits in its square root = $\frac{6}{2} = 3$.

Example 3. Find the least number that must be subtracted from 1989 so as to get a perfect square. Also find the square root of the perfect square.

Solution. Given number is 1989

Let us try to find its square root by long division method:

We get the remainder = 53.

It means $(44)^2$ is less than 1989 by 53.

\therefore If we subtract 53 from 1989, we get $(44)^2$ which is a perfect square number.

Hence, the least number that must be subtracted from 1989 so as to make it a perfect square is 53.

\therefore Required perfect square number = $1989 - 53 = 1936$ and $\sqrt{1936} = 44$.

	44
4	$\overline{1989}$
	-16
84	$\overline{389}$
	-336
	$\overline{53}$

Example 4. Find the greatest 4-digit number, which is a perfect square.

Solution. Greatest 4-digit number = 9999

Let us try to find its square root by long division method:

We get the remainder = 198.

It means $(99)^2$ is less than 9999 by 198.

\therefore If we subtract 198 from 9999, we get $(99)^2$ which is a perfect square number.

\therefore Required perfect square number = $9999 - 198 = 9801$.

Hence, the greatest 4-digit number, which is a perfect square is 9801.

	99
9	$\overline{99\ 99}$
	-81
189	$\overline{1899}$
	-1701
	$\hline 198$

SHOT ON LG TRIPLE AI CAMERA

Example 5. Find the least number that must be added to 6412 so as to get a perfect square.

Solution. Given number is 6412

Let us try to find its square root by long division method:

We get the remainder = 12.

This shows that $(80)^2 < 6412$

Next perfect square number is $(81)^2 = 6561$

\therefore Required number = $(81)^2 - 6412 = 6561 - 6412 = 149$.

Hence, the least number that must be added to 6412 so as to make it a perfect square is 149.

	80
8	$\overline{64\ 12}$
	-64
160	$\overline{012}$

Example 7. Find the square root of 9.81 correct to 2 decimal places.

Solution. Since the addition of zero (zeros) at the end of a decimal number does not change its value, therefore, write 9.81 as 9.810000.

Now proceed as in example 6 part (i) to find the square root.

$$= 3.132\dots$$

$$= 3.13 \text{ correct to 2 decimal places.}$$

	3.132
3	$\overline{9.81\ 00\ 00}$
	9
61	$\overline{81}$
	61
623	$\overline{20\ 00}$
	18 69
6262	$\overline{1\ 31\ 00}$
	1 25 24
	$\hline 5\ 76$

Example 6. Find the square root of the following numbers:

(i) 12.0409

(ii) 0.00064516

Solution. (i) Steps

- Starting from decimal point, put arrows (or bars) on the pairs of integers from right to left (\leftarrow) as usual and on the decimal part from left to right (\rightarrow).
- Take the first pair of digits. In this case, it is 12. Find the greatest number whose square is 12 or less than 12. Such a number is 3. Write 3 on the top in the quotient and also in the divisor. Subtract 3^2 i.e. 9 from 12. The remainder is 3.

	3.47
3	12.04 09
	9
64	3 04
	2 56
687	48 09
	48 09
	0

3. The next pair of digits is after decimal point, therefore, write the decimal point in the quotient.

- Bring down the pair of digits below the next bar (i.e. 04, in this case) to the right of the remainder. So the new dividend is 304.
- Double the quotient (i.e. 3) to get 6 and enter it with a blank on its right at the place of new divisor.
- Find the largest possible digit to fill the blank which will also become the new digit in the quotient, such that when the new divisor is multiplied by the new digit in the quotient the product is less than or equal to dividend. In this case, $64 \times 4 = 256$, so we choose the new digit as 4. Place 256 under 304. Subtract and get the remainder 48. Repeat the process of steps 4, 5 and 6. Remainder is 0.

$\therefore \sqrt{12.0409} = 3.47$

(ii) Steps

- Integral part is zero, so start from decimal point and put bars (or arrows) on the pair of integers from left to right (\rightarrow).
- Since the first pairs of digits is after the decimal point, therefore, write the decimal point in the quotient.
- As the first pair of digits after decimal point consists of both zero. Write 0 in the quotient to the right of the decimal point.
- As the next pair of digits is 06. Find the greatest number whose square is 6 or less than 6. Such a number is 2. Write 2 in the quotient to the right of 0 and also write 2 in the divisor. Subtract 2^2 i.e. 4 from 6. The remainder is 2. Bring down the pair of digits below the next bar and proceed as in part (i).

	.0254
2	0.00 06 45 16
	4
45	245
	225
504	20 16
	20 16
	0

$\therefore \sqrt{0.00064516} = 0.0254$

Example 8. Find the square root of 5 correct to 2 decimal places.

Hence, find the value of $3 - \sqrt{5}$.

Solution. $\sqrt{5} = 2.236...$
 $= 2.24$ correct to 2 decimal places.
 $\therefore 3 - \sqrt{5} = 3 - 2.24$
 $= 0.76$

	2.236
2	5.00 00
	4
42	1 00
	84
443	16 00
	13 29
4466	271 00
	267 96
	304

Example 9. Find the square root of the following by division method:

(i) $\frac{256}{841}$

(ii) $10\frac{86}{121}$

Solution. (i) $\sqrt{\frac{256}{841}} = \frac{\sqrt{256}}{\sqrt{841}} = \frac{16}{29}$

$\therefore \sqrt{\frac{256}{841}} = \frac{16}{29}$

(ii) $10\frac{86}{121} = \frac{1296}{121}$

$\therefore \sqrt{10\frac{86}{121}} = \sqrt{\frac{1296}{121}} = \frac{\sqrt{1296}}{\sqrt{121}} = \frac{36}{11} = 3\frac{3}{11}$

$$\begin{array}{r|l} & 16 \\ 1 & \overline{256} \\ & -1 \\ \hline 26 & 156 \\ & -156 \\ \hline & 0 \end{array}$$

$$\begin{array}{r|l} & 29 \\ 2 & \overline{841} \\ & -4 \\ \hline 49 & 441 \\ & -441 \\ \hline & 0 \end{array}$$

Converting mixed fraction into improper fraction.

$$\begin{array}{r|l} & 36 \\ 3 & \overline{1296} \\ & -9 \\ \hline 66 & 396 \\ & -396 \\ \hline & 0 \end{array}$$

$$\begin{array}{r|l} & 11 \\ 1 & \overline{121} \\ & -1 \\ \hline 21 & 021 \\ & -21 \\ \hline & 0 \end{array}$$

SOLVE YOURSELVES

EX.-3.4

Find the square root of each of the following by division method:

1) i) 2401

v) 53824

3) ii) 42.25

iv) 5.774409

4) ii) 107.45

iv) 2

5) i) $\frac{841}{1521}$

ii) $8\frac{257}{529}$

- 6) Find the least number which must be subtracted from 984 to make it a perfect square. Also find the square root of the perfect square number so obtained.
- 7) Find the least number which must be added to 1750 to make it a perfect square. Also find the square root of the perfect square number so obtained.
- 12) There are 1000 children in a school. For a P.T. drill they have to stand in such a way that the number of rows is equal to number of columns. How many children would be left out in this arrangement?
- 13) Amit walks 16 m south from his house and turns east to walk 63 m to reach his friend's house. While returning, he walks diagonally from his friend's house to reach back to his house. What distance did he walk while returning?
- 14) A ladder 6 m long leaned against a wall. The ladder reaches the wall to a height of 4.8 m. Find the distance between the wall and the foot of the ladder.

HOTS

- 1) A square field is to be ploughed. Ramu get it ploughed in Rs. 34560 at the rate of Rs. 15 per sq.m. Find the length of side of square field.
- 2) Lalit has some chocolates. He distributed these chocolates among 13 children in such a way that he gave 1 chocolate to first child, 3 chocolates to second child, 5 chocolates to third and so on. Find the number of chocolates Lalit had.

FOR FURTHER QUARIES YOU CAN GO THROUGH:

<https://youtu.be/fGXqCA8awWs>

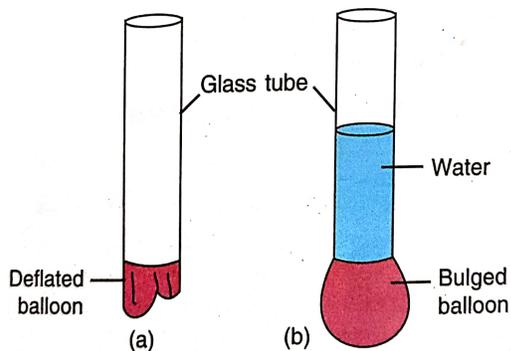
Remaining part of chapter 3(Force and pressure)

You have come to know that a solid exerts pressure on a surface due to its own weight. Similarly as a liquid has weight ,they also exert pressure on the container in which they are kept.

But the difference between the pressure given by solid and liquid is that , solid exerts pressure only on the surface but liquid exerts pressure in all directions.This can be shown by the following activities.

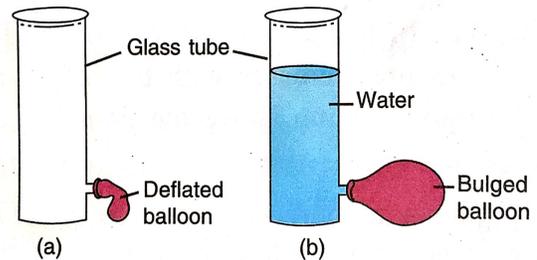
A liquid exerts pressure at the bottom of its container.

Take a glass tube. Tie a balloon at its lower end. Hold it vertically straight as shown in Fig. 3.21 (a). Pour some water in the tube [Fig. 3.21 (b)]. You will notice that the balloon bulges out.

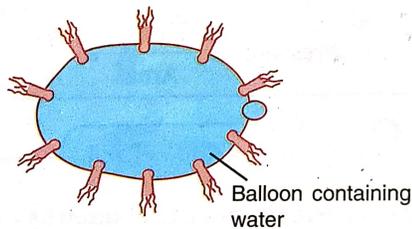


A liquid exerts pressure sideways also on the walls of container.

Take a glass tube closed at one end and having an opening in its side near the bottom. Tie a balloon at the side opening of the tube. Hold the tube vertically as shown in Fig 3.22 (a). Pour some water in the tube [Fig. 3.22 (b)]. You will notice that the balloon bulges out.



2. Take a balloon. Fill it with water. Tie its mouth. Make holes in it by inserting a pin at several places in all the directions. You will notice that water flows out through each hole (Fig. 3.23). This shows that water in the balloon exerts pressure in all directions.



By the above figures we can understand that the liquid can exert pressure in all directions.

Now the pressure at a point in a liquid depends on the following two factors.

1. The height of the liquid column_____ Liquid pressure increases with the height of the liquid column above the point.

2. The density of the liquid._____ Liquid pressure increases with the increase in density of the liquid.

CONSEQUENCES OF LIQUID PRESSURE.

Thickness of walls of a dam is increased towards the bottom: The reason is that the pressure at a point due to a liquid increases with the increase in height of the liquid column above it. So thickness of the walls of a dam is increased towards the bottom so as to withstand the increasing pressure of water.

ATMOSPHERIC PRESSURE: Like liquids gases exert pressure. Our earth is surrounded by air to a height of about 200 kilometres. This envelope of air around us is called the atmosphere. Air has weight. The weight of air exerts a thrust on earth. The thrust on unit area of the earth surface due to the column of air is called the atmospheric pressure. This is about $100000\text{N}/\text{sq.m}$. Standard value of atmospheric pressure is the atmospheric pressure on the sea level. The value is 76 cm or 760 mm of mercury column which is equal to the 1 atm or $1.013 \times 100000\text{ Pa}$.

SOME EXAMPLES IN DAILY LIFE TO SHOW THE EXISTENCE OF ATMOSPHERIC PRESSURE.

1. The syringe gets filled with the liquid when its plunger is pulled up due to the atmospheric pressure acting on the liquid.

2. Nose bleeding often occurs at high altitudes. The reason is that the atmospheric pressure is low at high altitudes, but the pressure inside the human body does not change. Thus, the excess pressure inside the body compared to the atmospheric pressure, causes nose bleeding.

3. It is difficult to take out oil from a sealed tin if one hole is made in it. But if another hole is made, the atmospheric pressure acts on the oil due to air entering in the tin through this hole and the oil then comes out of the tin through the other hole easily.

SOME SOLVED EXAMPLES.

1. Calculate the moment of force of 5 N applied on a body at a distance of 20 cm from a pivoted point.

Given, $F = 5\text{ N}$, distance $d = 20\text{ cm} = 0.2\text{ m}$.

Moment of force = $F \times D = 5\text{ N} \times 0.2\text{ m} = 1\text{ Nm}$.

2. A force of 20 N acts normally on a body having area of cross section 10 cm

Calculate the pressure exerted by the body.

Given, thrust $F = 20\text{N}$

Area $A = 10\text{ sq. cm} = 10/1000\text{ sq.m}$

Pressure = thrust \div area = $20\text{N} \div 10/1000\text{sq.m} = 2 \times 10000\text{ N/sq.m}$

3. Julie can open a 2m. wide door by a minimum force of 2.5N. Find the moment of force needed to open the door.

Given, moment of force = $F \times d = 2.5\text{N} \times 2\text{m} = 5.0\text{Nm}$.

H.W

1. In which aspect liquid pressure is different from pressure given by solid?
2. Write about the factors affecting the liquid pressure and discuss .
3. What do you mean by Atmospheric pressure? what is the value of it?
4. We do not feel uneasy even under the enormous atmospheric pressure. Give a reason.
5. Water does not run out of a dropper unless its rubber bulb is pressed. Give reason.

Numericals

1. A normal force of 200N acts on an area of 0.02 sq. m. Find the pressure in Pascal.
2. How much thrust is required to exert a pressure of 20,000 Pa on an area of 1sq.cm?
3. A boy weighing 60 off stands on a platform of dimensions 2.5cm \times 0.5cm. What pressure in Pascal does he exert?
4. Find the area of a body which experiences a pressure of 50000 Pa by a thrust of 100N?
5. Find the moment of force of 20 N about an axis of rotation at a distance 0.5 m from the force.

CLASS-VIII
PHYSICAL EDUCATION

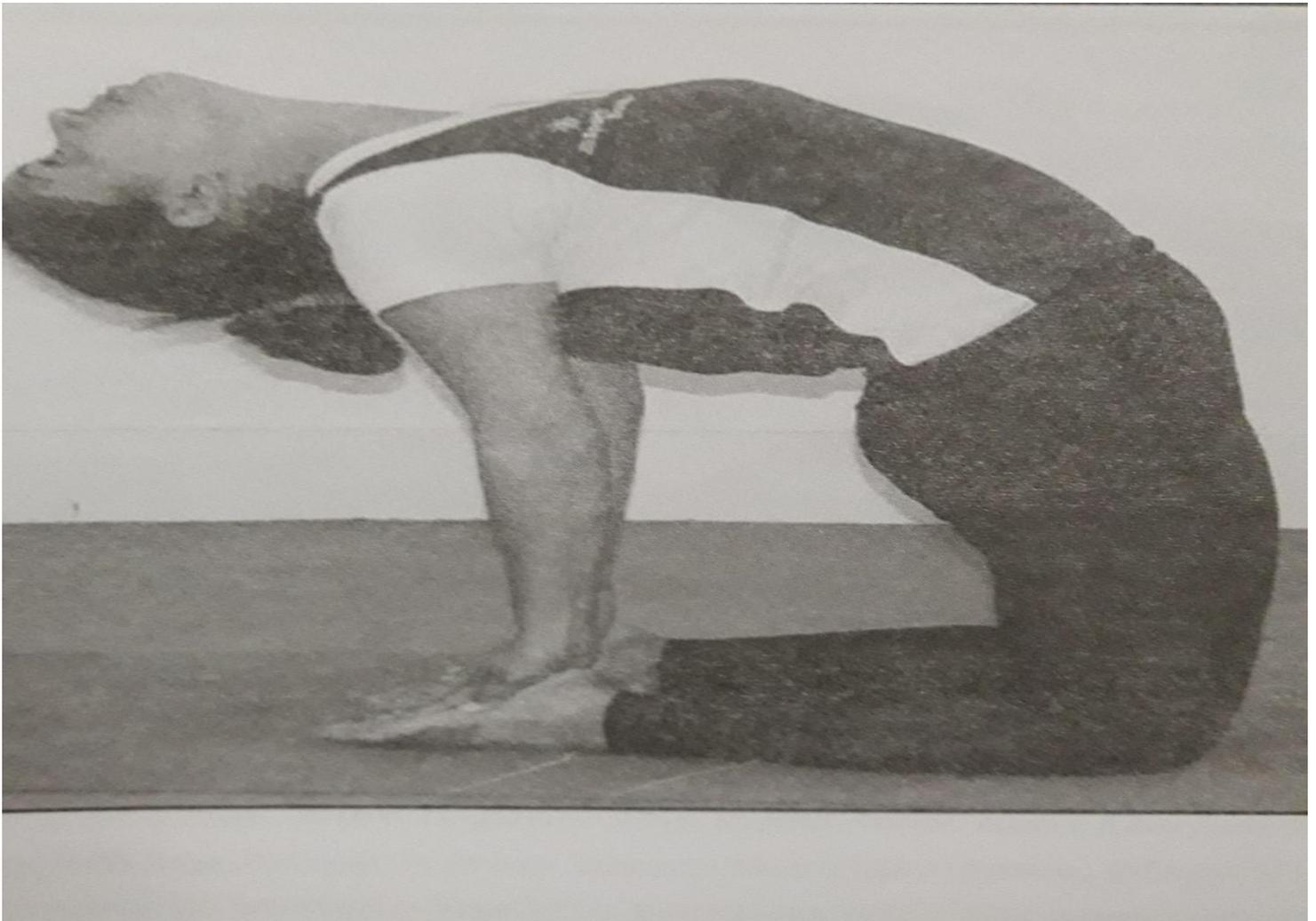
YOGA

Yoga is a good practice if one does in daily life. It helps to live healthy life style and better life forever. Yoga is the most favourable method to connect to the nature by balancing the mind-body connection.

USHTRASANA

Ushtra is a Sanskrit word which means 'Camel'. In this asana the final posture of the body resembles the shape of a camel.

Position: Knees down on the floor. Toes pointing back and resting on the floor.



Technique:

1. Place the legs about one foot distance; while exhaling bend backward and place the palms on their respective heels or support the back with palms.
2. Push the back in front direction and leave the neck in relaxed position.
3. Maintain the final position with normal breathing for some time
4. Inhale and come up and then release the posture and relax.

Go to the below link for exercise video:

<https://youtu.be/hauHNny-WQs>

CLASS 8
HISTORY

DATE: 27/04/20

A PERIOD OF TRANSITION

CONTINUED.....

The Renaissance, the Reformation and the voyages of discoveries brought about the modern age in Europe. Great demand for goods gave birth to the factory system which started being produced in machines.

The Industrial Revolution began in England with the easy availability of natural resources, profit driven merchants, plenty of cheap labour and a government which supported industrialisation which later spread to the entire world.

This industrial revolution led to the decline of Feudalism and rise of capitalism in Europe. The new social class – the class of capitalist and the workers class emerged. Many towns and cities grew because of this revolution.

The need for raw materials, new markets for finished goods and new regions for the investment of capital led to the growth of **Imperialism**. Most countries of Asia and Africa were colonised by European powers. The self-esteem of the colonised people and their pride in their nations were destroyed by the imperialists. The worst result of imperialism was slavery.

India was also colonised and it turned into an exporter of raw materials and an importer of factory made finished goods.

Feudalism – A system which existed in the middle ages, where people received land and protection from a lord when they worked and fought for him.

Imperialism – It means a policy of extending political and economic control over a weak country by a powerful one.

Capitalist – This is a system where the means of production like land, mine and factories were owned privately by individuals.

Reformation – A religious movement that took place in Europe in the 16th century that aimed at reforming the beliefs and practices of the Roman Catholic Church and getting rid of its corruption.

Industrial Revolution – A movement that started in England in the 17th century involving the faster production of goods in factories with machines.

Colony – A country or area under the political control of another country.

Colonialism – The practice by which one country directly controls other countries and uses their resources to increase its own power and wealth.

practices which greatly undermined the reputation of both the Church and the clergy. The Church also collected money from the common people by selling Indulgences. **Indulgences were letters of pardon.** The Church preached that anyone who bought a Letter of Indulgence would be forgiven and would not have to do **penance** for their sins. This suggested that the rich could buy their way into heaven while the poor could not. The rulers resented the interference of the Church in the affairs of their states. Kings like Henry VIII considered powerful Church as a check on their authority. These rulers were willing to provide support to any movement which was against the Pope.

The Renaissance set in motion a new spirit of learning and enquiry. It encouraged independent and original thinking on scientific lines. The invention of the printing press also played a big role in the Reformation. The Bible was translated from Latin to many regional languages.

Martin Luther's Contribution to Counter Reformation

Martin Luther (1483–1546) was a German priest and theologian. In 1517 he published his work **Ninety-Five Theses** and nailed it on the church door at Wittenberg. In his theses, he emphasised on the true principles of Christianity and the role of faith. The invention of the printing press quickly led to the spread of his writings throughout Europe.

Impact of Reformation

The impact of the Protestant Movement changed the religious beliefs, practices, culture and society in Europe.

Industrial Revolution

Industrial Revolution refers to the period of rapid social, economic and technological changes that took place in Britain from the latter half of the eighteenth century to the first half of the nineteenth century. The Industrial Revolution began in England but gradually spread to Western Europe and North America. Rapid scientific, technological and commercial innovations, a rising population, improved transportation and expanding domestic and international markets led to the development of mills, factories, mines and workshops.

Causes of the Industrial Revolution

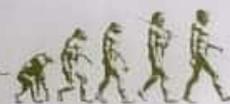
Some of the causes of the Industrial Revolution are discussed here.

Transportation

In the eighteenth century, construction of canals and an improved



▲ James Watt



road system brought about a change in the transport system. The invention of the railways radically improved the ease and speed with which goods could be transported. This was made possible by the invention of the steam engine in 1782 by James Watt. Later, George Stephenson succeeded in designing the first model of a locomotive engine. He is regarded as the father of the railways. As industries started developing, the railway network became crucial for the transportation of raw materials and the distribution of finished industrial goods. The steam engine was used in navigation too. Steamboats and steamships started to be used on a large scale. Durable roads were also constructed. Roads were covered with coal tar to make the surface of the road smooth and even. They improved with the development of a macadam surface (layers of small stones held together by a cementing agent). An improved transport system meant the goods produced in the factories could be taken to other parts of the country to be sold and raw materials from all over the land could be transported to the urban centres.

Coal and iron

Steam engines required iron and coal in large quantities. Moreover, iron was required to make machines. Coal was equally important because it was a source of cheap fuel. England had large quantities of coal and iron. The English evolved new techniques for the manufacture of iron and utilisation of the vast reserves of coal. Thus, the availability of coal and iron ores in large quantities greatly helped the growth of numerous industries in England.

Scientific inventions

The Industrial Revolution in England began with the invention of the spinning and weaving machines like the Flying Shuttle and the Spinning Jenny. In 1769, Richard Arkwright invented a spinning frame named Water Frame which was run by water power. American inventor Eli Whitney invented a machine known as the Cotton Gin which separated cotton fibre from the seed. The invention of the sewing machine brought a revolution in the textile industry. Thus, with the help of all these machines the technique of cloth-making was perfected.



▲ Spinning Jenny

Colonies

The development of new ways of navigation also paved the way for Industrial Revolution. The British sailors discovered new lands which were unknown until that time. They built a large colonial empire in Africa and Asia. The discovery of these lands served two purposes. It became a market for the purchase of raw materials and also a place to sell the finished goods. Thus, with the discovery of these new lands and market, there was a need to produce goods on a large scale. This demand added fuel to the **burgeoning** Industrial Revolution.

Impact of the Industrial Revolution

The Industrial Revolution had an everlasting effect on class structure, urbanisation and lifestyle. It brought momentous changes in the social, political and economic lives of the people as a whole. **Two of the most significant impacts or consequences of the Industrial Revolution were the rise of capitalism and socialism thereafter.**

Imperialism

The Industrial Revolution paved way for the rise of imperialism. Imperialism can be defined as the process through which a country extends its power and control by acquiring weaker territories directly and gaining political, social, economic and cultural control over them. During the nineteenth and twentieth centuries, powerful countries such as Japan, the USA and European nations began to use imperialism as a means to gain control over weaker Asian and African countries.

Causes for the rise of imperialism

The causes for the rise of imperialism are as follows.

- **Economic causes:** The industrialised nations began to acquire more and more colonies in order to fulfil the demands of the Industrial Revolution. These colonies served as a source of raw materials. Goods began to be produced on a large scale in the factories. The acquired colonies were further converted into markets for the manufactured goods. For example, India was a major producer and exporter of cotton textiles till the eighteenth century but it fell to a position of importer of the cotton textiles. They also provided cheap labour and furthered the cause of imperialism.
- **Military causes:** The colonies provided strong military bases for the navies of the industrialised nations. These colonies provided safe harbours for naval vessels and served as coaling stations which helped the imperialist nations in time of wars.
- **Political causes:** Imperialism was driven by the desire to conquer weaker nations and exercise political authority over them. Colonies became status symbols for the imperialist nations. Acquisition of colonies boosted nation's pride and maintained balance of power between the imperialist nations of the world.
- **Social causes:** The European nations considered themselves as a superior race. According to them, it was their moral obligation to civilize the uncivilized nations of Asia and Africa. This view was supported by Rudyard Kipling's poem 'The White Man's Burden'. Therefore, the imperialist nations of the west conquered more and more colonies and controlled their society.
- **Religious causes:** Many European nations used imperialism as a means to spread Christianity across the globe. They wanted to secure Christian missionaries in foreign lands.
- **Technological causes:** Better technology and improved medical facilities



strengthened imperialism. Invention of quinine helped the western nations to survive tropical diseases in their colonies in Asia and Africa. Other technological inventions such as steam boat and telegraph increased their mobility and enabled them to respond quickly in situations that threatened their power. Superior weapons also helped the Western nations to control the colonies. (3)

52. Impacts of imperialism

Impacts of imperialism has been a topic of debate among historians and scholars. Some of them argue that imperialism contributes to the development and civilization of the colonies while on the other hand, some scholars and historians are critical of the Western Imperialism. They relate imperialism with exploitation, degradation and racial segregation.

2 ✖ **Political impacts:** Imperialism introduced western concepts such as democracy and nationalism in Asia and Africa. The development of railways, means of communication such as post and telegraph united the people in colonies. The imperialist nations also introduced an efficient system of administration in their colonies. However, this system served their interests and neglected the natives of the colonies. They were not allowed to participate in the administration and were not given any high posts. Imperialism also led to an increase in the slave trade. The slaves were purchased and sold as property. They were forced to work in inhumane conditions. The European powers were continuously at war with each other in order to expand their dominance, for example, The Anglo-French wars (1746-1763) ousted the French trading companies from India.

• **Economic impacts:** Imperialism facilitated the industrialisation of the colonies in Asia and Africa as many European powers established their factories in the colonies. The raw materials and other resources of these colonies were exploited on a large scale. Local industries, trade and commerce also declined due to exploitative taxation policies and led to drain of wealth. It contributed to the backwardness of the colonies.

• **Social impacts:** Imperialism had adverse effects on the societies of the colonies. It affected their religious and traditional beliefs. It lured the people to adopt Christianity. The Christian missionaries offered material benefits to people and also provided services such as hospitals and schools. These services enlightened natives of the colonies in Asia and Africa. The western nations considered themselves as superior races and tried to impose their culture on the local people which led to racial segregation. The British followed the policy of 'divide and rule' in India which culminated in the partition of India in 1947. 5

Snap Recap

- Renaissance marked the beginning of the modern period. It began in Italy around the fourteenth century and then spread to other parts of Europe.

CLASS – VIII
STUDY MATERIAL & HOME ASSIGNMENT [III]
SUBJECT-BIOLOGY
CHAPTER-1(TRANSPORT OF FOOD & MINERALS IN PLANTS)

DT-27/04/20

➤ **ANSWERS OF (ASSIGNMENT-II) HW QUESTIONS : CHAPTER 1**

1. Mention the odd term and give reason.

- a) Boron, Molybdenum, Nitrogen, Zinc.
 Odd - Nitrogen
 Reason – Nitrogen is macronutrient while rest are micronutrients.
- b) Sieve plate, Companion cell, Sieve element, Tracheid.
 Odd – Tracheid
 Reason – Tracheid is part of xylem while rest are part of phloem.
- c) Tracheid, Xylem fibers, xylem parenchyma, Vessel
 Odd- Xylem parenchyma
 Reason - Xylem parenchyma is living part of xylem while rest are non living part of xylem.

2. Differentiate between:

a) Xylem and Phloem.

Xylem	Phloem
Xylem transports water.	Phloem transports food.
Conduction by xylem is unidirectional	Conduction by phloem is bidirectional.
Xylem is non living.	Phloem is living.
Xylem occupies centre of vascular bundle.	Phloem occurs on outer side of vascular bundle.
Xylem is hard walled tissue.	Phloem is soft walled tissue.

b) Macro and Micro nutrients

Macro nutrients	Micro nutrients
Macronutrients are required in large quantities in plant body for their growth and life cycle.	Micronutrients are present in minute concentration inside the plant body.
E.g. - carbon, hydrogen, nitrogen, oxygen, phosphorous, potassium, calcium, sulfur, and magnesium.	E.g. - boron, chlorine, manganese, iron, zinc, copper, and molybdenum.

3. What do you mean by ascent of sap?

The ascent of sap in the xylem tissue of plants is the upward movement of water and minerals from the root to the crown. Water enters a root hair → the cell content becomes dilute → cell next to the root hair cell will be more concentrated → Water enters by osmosis into this cell → Water, along with dissolved nutrients moves along from cell to cell and goes into the xylem.

Thus root pressure is the force which pushes water into the xylem. This is also called ascent of sap.

4. What are the factors affecting the rate of transpiration?

Sunlight, temperature, wind action increase transpiration; increased humidity decreases it.

5. Study the diagram and answer the following. The two chambers, A and B, containing solution are separated by a semi permeable membrane. In which direction will osmosis occur?

As we know osmosis is movement of a solvent (water) molecule through a semi permeable membrane from a place of higher concentration (of water) to a place of lower concentration. In this diagram the chamber B has more water concentration than in chamber A. So the osmosis (movement of solvent molecule) will occur from chamber B to chamber A.

6. A diagram is given alongside.

a) Identify it.

Phloem tissue.

b) Mention the parts 1-3.

1. Sieve plate

2. Sieve areas

3. Companion cells

c) What is the function of the part marked 1.

It keeps the sieve tube alive by providing nutrients and energy for translocation of food.

7. What is translocation?

Translocation is the movement of food materials from leaves to other tissues throughout the plant. Plants produce carbohydrates (sugars) in their leaves by photosynthesis, but non photosynthetic parts of the plant also require carbohydrates and other organic and nonorganic materials. For this reason, nutrients are translocated from sources (regions of excess carbohydrates, primarily mature leaves) to sinks (regions where the carbohydrate is needed).

➤ **SOME MORE SOLVED QUESTIONS OF CHAPTER 1 –
{LEARN AND PRACTISE}**

1) Select the most appropriate answer.

(a) Diffusion occurs when molecules move:

1. from lower concentration to higher concentration.
2. from higher concentration to lower concentration through a membrane.
3. from higher concentration to lower concentration.
4. when energy is used.

Answer: (3) from higher concentration to lower concentration.

(b) Ascent of sap in plants takes place through.

1. Cortex
2. Epidermis
3. Xylem
4. Phloem

Answer: (3) Xylem

(c) If the xylem vessels of a plant are plugged:

1. The leaves will turn yellow
2. No food will be made
3. The plant will wilt (shrivel)
4. The plant will continue to grow

Answer: (3) The plant will wilt (shrivel)

(d) Force responsible for the ascent of sap is:

1. Capillary force
2. Root pressure
3. Transpirational pull
4. All the three

Answer: (4) All the three

(e) Raisins swell when put in:

1. Saturated salt solution
2. Water
3. Mustard oil
4. Saturated sugar solution

Answer: (1) Water

(f) The root-hairs are suited for absorbing water from the soil because:

1. They have a large surface area
2. The plasma membrane around the vacuole forms the semi-permeable membrane.
3. They contain a solution of higher concentration than the surrounding water.
4. All the three.

Solution: (4) All the three.

(g) Transpiration is defined as:

1. the rise of water up to the stem of a plant.
2. the elimination of water with dissolved water products.
3. the loss of water as water vapour from the aerial parts of a plant.
4. the loss of water as water vapour from the roots as well as the leaves of the plant.

Answer: (3) the loss of water as water vapour from the aerial parts of a plant.

(h) Which one of the following favours the fastest transpiration rate?

1. A cool, humid, windy day,
2. A hot, humid, windy day,
3. A hot, humid, still day,
4. A hot, dry, windy day.

Answer: (4) A hot, dry, windy day.

2) Short answer questions.

(a) Define the terms:

(i) semi-permeable membrane (ii) Osmosis

Semi-permeable membrane: the movement of solvent molecules is allowed through a membrane (e.g. @ water molecules) but it prevents the movement of solute particles (e.g. sugar or salt molecules).

For example Egg membrane, parchment membrane, cellophane paper etc. are semi-permeable membranes.

Osmosis: A semi-permeable membrane through which the diffusion of water molecules from a region where water is more concentrated to a region where it is less concentrated is called osmosis. In other words, osmosis is the diffusion of water from its pure state or dilute solution into a stronger or concentrated solution through a semi-permeable membrane.

(b) Under what conditions do plant transpire?

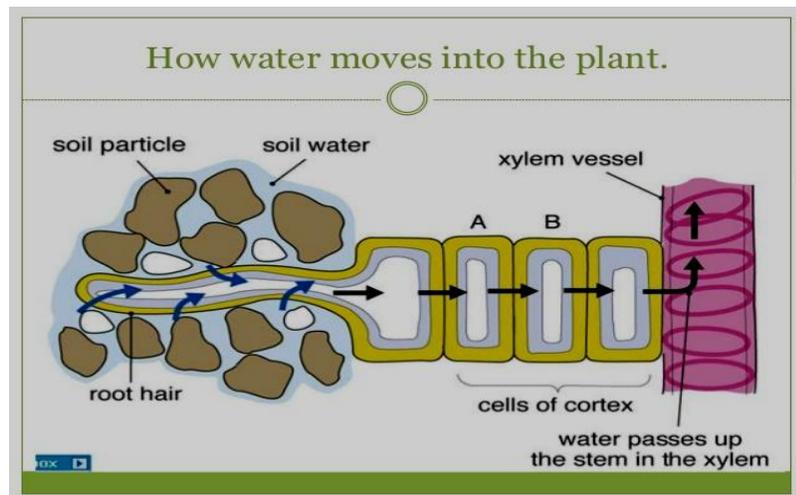
(i) more quickly and (ii) most slowly?

Transpiration is faster on hot summer days as compared to cold winters.

In humid air, transpiration is reduced. Air cannot hold any water molecules when it is already laden with moisture (humidity).

(c) Show an enlarged diagram of a part of the root. Draw arrows on the diagram to show the movement of water passing through different parts.

Fig : Path of water through the root hair to the xylem vessels.



(d) Why is the structure of the root hair quite suitable for absorbing water from the soil?

The root hair is suitable for absorbing water from the soil in the following three ways:

- i. A large surface area has root hairs. More the surface area, greater is absorption.
- ii. The cell wall is of cellulose nature and forms the permeable membrane and the plasma membrane around the vacuole forms the semi-permeable membrane.
- iii. Root hairs have a solution (cell sap) of a higher concentration than the surrounding soil water.

(e) How does temperature, light intensity and wind affect transpiration?

Temperature: On hot summer days, transpiration is faster as compared to cold winters to increase the cooling effect.

Light intensity: The transpiration rate is increased due to the increase in light intensity. During daytime in the sunlight, the rate of transpiration is faster. This is because the stomata remain open to allow the inward diffusion of carbon dioxide for photosynthesis. In dark, the stomata are closed and hence transpiration hardly occurs at night.

Wind: Transpiration is more when the wind is blowing faster; water evaporates faster from the leaves.

(f) Briefly explain, how transpiration helps in upward conduction of water in plants?

(i) Water through their roots is continuously absorbed by the plants. This water is sent up through the stem to all parts of the plant, including the leaves. Only a little amount, of water, is retained in the plant or utilised by it in photosynthesis. The rest of it gets evaporated into the atmosphere as water vapour through the Stomata present in the epidermis of the leaves and other aerial parts of the plant. This creates a suction pressure which pulls up water from xylem of the roots to the stem and then to the leaves.

(ii) Xylem tissues are narrower in its diameter, in the form of capillary tubes (tracheids and fibres), greater will be the force. Whenever the xylem vessels lay empty, such as during the loss of water by transpiration, the water from below rises into them by a capillary force.

During day time, water is lost from the surface of the leaves by the process of transpiration. In this process, more and more water molecules are pulled up due to their tendency of retaining joined (cohesion). Such pulling force created by the leaves is very important in the case of tall trees where upward conduction of water takes place.

3) One word answers.

- (a) Cells that provide mechanical support to the plant are called – Fibres
- (b) The process in which substances absorbed or synthesised in one part of the plant and moved to other parts of the plant is – Transportation
- (c) Process of attraction of water molecules towards narrow spaces is – Capillary action
- (d) If we cover a transparent polythene bag to a potted plant, we will observe the drops of water on the inner side of the bag. This is due to – Transpiration
- (e) The leaves of a plant first prepare food A by photosynthesis. Food A gets converted into food B and stored. Name A and B - Glucose and starch
- (f) Raisins will swell and grapes will shrink in water. The kind of peel through which this gain or loss of water takes place - Semi permeable membrane
- (g) The type of transport which requires energy – Active transport
- (h) The part of xylem at the end wall between two adjacent vessel of xylem forming an opening between cells and thus facilitating free movement of water – Perforation plate