

GURU GOBIND SINGH PUBLIC SCHOOL, SEC-5/B

SPECIAL ASSIGNMENT II

CLASS-X

SUBJECT-ENGLISH LANG.& LIT.

BOOK-BEEHIVE

Dust of Snow Introduction

The poem "Dust of Snow" by Robert Frost is a simple and short poem, yet with a deeper and larger meaning. The poet explains how an act as petty as experiencing snow on one's body can brighten one's day up.

Dust of Snow Poem and Explanation



The way a crow
Shook down on me
The dust of snow
From a hemlock tree

Shook- shake

Hemlock- a poisonous tree with small white flowers



The poem is set in a scene where the poet is in a bad mood and is walking by a tree, a hemlock tree. Hemlock tree is a poisonous tree. As he passes by, a crow happens to throw some snow dust on him. Whether it falls on his head or shoulders is unknown as there is no specific mention in the poem. Also, the readers are left in doubt about the bird's specific action. Whether the crow was landing, shivering with cold, re adjusting itself on the branch or taking off, it happened to send some particles of snow upon the author. Here, the two agents of nature, the hemlock tree and the crow are signifiers of sadness and gloom just like the poet's mood was in the opening scene.

Has given my heart
A change of mood
And saved some part
Of a day I had rued.

Rued- held in regret

For reasons unknown, the author was having a terrible day. But the falling of the snow on his head lifted his mood instantly. He had already spent his day in a bad mood but the rest of it was saved by the crow and the hemlock tree. Generally, hemlock tree and crow are used for negative references but the poet used them beautifully to portray that inauspicious things can bring joy and happiness too. One must not take things for granted and should be open and accept whichever way the nature chooses to bless us.

Dust of Snow Literary Devices

Rhyme Scheme- abab cdcd

ii Alliteration- the occurrence of the same letter or sound at the beginning of adjacent or closely connected words.

The instances of alliteration are as follows-

Has given my **h**earth

And saved **s**ome part

Answer the following questions in 30-40 words:

Q1. What is a “dust of snow”? What does the poet say has changed his mood? How has the poet’s mood been changed?

Q2. What do the ‘crow’ and ‘hemlock’ represent — joy or sorrow? What does the dust of snow that the crow shakes off a hemlock tree stand for?

Extract Based Questions

“A change of mood

And saved some part

Of a day I had rued.”

- (a) What do the ‘crow’ and ‘hemlock’ symbolise?
- (b) The mood of the poet changed because _____ .

Fire and Ice Poem Introduction

Robert Frost’s poem “Fire and Ice” expresses the profound idea that the world would end in either of two ways, either by ice or fire. Both the components are compared with self-destructing human emotions: hatred and desire. The poem, very artistically, underpins the philosophy that we let our emotions rule us and if don’t control them they will surely destroy everything around us. Similarly, he thinks fire and ice, both are just as competent in bringing the world to a catastrophic end.

Poem-Fire and Ice - Poem and Explanation

Some say the world will end in fire
Some say in ice.
From what I’ve tasted of desire
I hold with those who favour fire.

Desire- a strong feeling of wanting to have something or wishing for something to happen
Favour- approval, support

The poem expresses the profound idea that the world would end in either of two ways, either by ice or fire. One group is of the opinion that someday the Earth’s core will get so heated up that it would lead to fire destroying the earth’s surface. On the other hand, the second group says that if the temperature goes down to an extent that makes life on Earth impossible, it would have the same catastrophic effect. The poet then compares fire and ice with the destructive features of human emotions; desire and hatred. He says that from what he is aware about “fiery desires”, he would favour the ones who say that it would

be fire. By saying so, he brings about the idea that human beings let their emotions rule them and the consequence of unmonitored longing is chaos.

But if it had to perish twice,
I think I know enough of hate
To say that for destruction ice
Is also great
And would suffice.

Perish- die
Suffice- be sufficient

Then by not waving off the first option of fire, he considers if the world has to expire twice, ice would be equally competent in ending it. He brings about a contrast between "ice" and "hatred". The human capability of insensitivity and hatred has the potential for inner destruction. Though slow and steady, it has the same effect that desire has on us. So if given an option between fire and ice, ice would be just as good as fire to destroy the world.

Fire and Ice - Literary devices

1. Rhyming scheme- Aba

abc
bcb

2. Assonance- it is repetition of vowel sounds in same line. The repetition is at different places in different words.

Example- The long sound of "o" in "I hold with those who favour fire"

3. Alliteration- alliteration is the repetition of a consonant sound at the start of two or more closely placed words.

Example- The sound of "f" in "favour fire", "w" in "world will"

4. Imagery- Imagery is used to make readers perceive things involving their five senses. Example- "Some say the world will end in fire"

"To say that for destruction ice Is also great"

5. Anaphora- the repetition of a word or expression at the start of two or more consecutive lines.

Example - "Some say" is repeated at the start of lines 1 and 2.

6. Personification- Personification is to give human qualities to inanimate objects. In this poem, “fire” and “ice” are capable of destruction. Thus, the poet personifies fire and ice by giving them mind and power to destroy anything.

ANSWER THE FOLLOWING QUESTIONS in 30-40 words:

- Q1. For Frost, what do ‘fire’ and ‘ice’ stand for?
- Q2. How has Frost brought out the contrasting ideas in the poem?
- Q3. Write down the two different views about the end of the world?
- Q4. Why does the poet hold with those who favour fire?

READ THE EXTRACTS GIVEN BELOW AND ANSWER THE FOLLOWING QUESTIONS”:

1.”But if it had to perish twice

I think I know enough of hate

To say that for destruction ice is also great

And would suffice.”

- (a)What does ‘it’ refers to in the first line?
- (b)What do you mean by ‘suffice’? What is suffice for the destruction of the world?

2.” From what I’ve tasted of desire

I hold with those who favour fire.”

- (a)who is the poet of the above line? What is the poet’s opinion of the world in these lines?
- (b) What is the poet’s opinion about the end of the world?

BOOK-FOOTPRINTS WITHOUT FEET

Introduction to the lesson-A TRIUMPH OF SURGERY

Tricki, a small dog, is pampered and overfed by his rich mistress. He falls seriously ill and his mistress consults a veterinary surgeon. Does he perform an operation? Does the dog recover?

This story is about Tricki, a dog who is the pet of a rich lady named Mrs. Pumphrey. She loves her dog very much and is unable to refuse him anything he wants. Tricki, is fond of eating cream cakes and chocolates. So one day when Mrs. Pumphrey is out with Tricki for a walk the narrator sees them and stops to talk. While talking to Mrs. Pumphrey he realises that she has been overfeeding Tricki and also

had been giving him things that he shouldn't eat due to which Tricky had started looking like a bloated sausage. Soon Tricky got unwell and Mrs. Pumphrey has to call Mr. Herriot (narrator) for help. She does not want to send him away but the only way suggested by Mr. Herriot is to get him hospitalised for 15 days. Then the story unfolds into how he gets well. Read the description to know more.

A Triumph of Surgery Summary

The story starts when Mrs. Pumphrey, a rich lady takes her dog out for a walk. A nearby veterinary doctor who knows the lady sees the dog and is shocked as he sees that the dog looks like a bloated sausage with a leg at each end. He advises her to stop giving him unhealthy things to eat but Mrs. Pumphrey is not able to refuse him. Soon he falls sick and the doctor is called. The narrator, Mr. Herriot then somehow takes Tricky, the dog to the hospital even though he knows that Mrs. Pumphrey is not ready to leave her dog and nearly fainted just by hearing these words. Then he takes the dog along and puts a bed for him in his surgery. The dog doesn't move much nor eats anything for the first two days. On the second day he looks around and whimpers a bit. He wanted to go out on the third day and started playing with the bigger dogs when he was taken out. He also licked the bowls of other dogs clean on the third day.

Then his condition started improving very fast. He started fighting for his meals with other dogs. Then when this news reached Mrs. Pumphrey, she started sending him eggs as she thought that Tricky was recovering from an illness and needed energy foods. Mr. Herriot and his partners started eating those eggs for morning breakfast. Then for improving Tricky's blood, Mrs. Pumphrey started sending in bottles of wine which was again consumed by Mr. Herriot. He used to take two glasses before lunch and some more glasses while having his lunch. Then when she started sending in bottles of brandy for Tricky that was the time when Mr. Herriot thought that he would really like to keep Tricky as a permanent guest in the surgery. Mr. Herriot used to be really happy someday by having two extra eggs every morning. Then having few glasses of wine in the afternoon and closing the day by having brandy at night. But then he took a wise decision and called up Mrs. Pumphrey as she was really worried and on this side Tricky was ready to be taken back home. Tricky was really happy to see his mistress and jumped into the car. Mrs. Pumphrey said that she won't be able to ever thank him for what he had done and also, that his surgery had been successful as Tricky was now cured.

ANSWER THE FOLLOWING QUESTIONS IN 30-40 WORDS:

- Q1. Why is Mrs Pumphrey worried about Tricky?
- Q2. What does she do to help him? Is she wise in this?
- Q3. How does the narrator treat the dog?
- Q4. Why is he tempted to keep Tricky on as a permanent guest?
- Q5. Why does Mrs Pumphrey think the dog's recovery is "a triumph of surgery"?

ANSWER THE FOLLOWING QUESTIONS IN 150 WORDS:

Q write a character sketch of Dr. Herriot.

WRITING SECTION

ORDER LETTER

An **Order Letter** is the one that is written by the person/company **placing** the request of purchase from another company.

Format

sender's address

leave a line

date

leave a line

Receiver's address

Leave a line

Subject:

Leave a line

Salutation(sir)

Body of the letter:

para 1: should explain for what you are going to place the order for

Para 2: should talk about the details of the services or products that you are placing the order for

Para 3: is going to be the concluding one ,so don't forget to mention what do you want in response from the one who is going to receive the order.

Leave a line

Thanking you

Yours sincerely

Sender's name

Designation

Here Is A Sample Letter To Place An Order

Blossom Public School
Ghaziabad

February 25, 2020

Sharma and Sharma Group
New Delhi

Subject: Purchase of Sports Items

Dear Sir

It is my pleasure to communicate to you that our school wishes to place an order for sports items in bulk with your company. These items will be used in the activities room, gym, and sports ground of the school starting from the academic session of the year 2020-21. List of the items along with their quantity is given below:

Name of the Items	Pieces Needed
Willow bats	25
Wicket keeping pads	30
Batting pads	45
Match ball (red)	60
Match ball (white)	70
Football	30
Batting gloves	35
Wicket keeping gloves	40
Tennis balls	36
Practice net	03
Stumps	34
Volleyballs	20

Kindly, deliver the order on time, by ensuring that all the items are taken from the fresh lot. Payment of the entire purchase will be done digitally. It would be great if you could share the time when all the items will be delivered at our address.

Looking forward to hearing from you.

Yours sincerely
Ankit
Sports Incharge

PRACTICE QUESTION

Q Write a letter to the Sales Manager, MMS Books, Ashok Vihar, Delhi, placing order for five titles of books that you need for educational purpose. You are Sanjeev/Sanjana, 12/CA, Model Town, Kurukshetra.

GRAMMAR SECTION

TOPIC- REPORTED SPEECH

What is reported speech?

Reported speech is when you tell somebody else what you or a person said before.

Direct speech vs Reported speech:

Direct speech	Reported speech
She says: "I like tuna fish."	She says that she likes tuna fish.
She said: "I'm visiting Paris next weekend"	She said that she was visiting Paris the following weekend.

Different types of sentences

When you use reported speech, you either report:

- statements
- questions
- requests / commands
- other types

A. Reporting Statements

When transforming statements, check whether you have to change:

- pronouns
- tense
- place and time expressions

1- Pronouns

In reported speech, you often have to change the pronoun depending on who says what.

Example:

She says, "My dad likes roast chicken." – She says that her dad likes roast chicken.

2- Tenses

If the sentence starts in the present, there is **no change** of tenses in reported speech.

Example:

He says, "I write poems." – He says that he writes English.

- If the sentence starts in the past, there is often changes of tenses in reported speech. Example:
He said, "I am happy." – He said that he was happy.

	Direct speech	Reported speech
(no backshift)	"I write poems."	He says that he writes poems.
(backshift)	"I write poems."	He said that he wrote poems.

Examples of the main changes in tense:

Direct Speech	Reported Speech
<p>Simple Present He said: "I am happy"</p>	<p>Simple Past He said that he was happy</p>
<p>Present Progressive He said: "I'm looking for my keys"</p>	<p>Past Progressive He said that he was looking for his keys</p>
<p>Simple Past He said: "I visited New York last year"</p>	<p>Past Perfect Simple He said that he had visited New York the</p>

	previous
Present Perfect He said: " I've lived here for a long time "	Past Perfect He said that he had lived there for a long time
Past Perfect He said: "They had finished the work when I arrived"	Past Perfect He said that they had finished the work when he had arrived"
Past Progressive He said: "I was playing football when the accident occurred"	Past Perfect Progressive He said that he had been playing football when the accident had occurred
Present Perfect Progressive He said: "I have been playing football for two hours."	Past Perfect Progressive He said that he had been playing football for two hours
Past Perfect Progressive He said: "I had been reading a newspaper when the light went off"	Past Perfect Progressive He said that he had been reading a newspaper when the light had gone off
Future Simple (will+verb) He said: "I will open the door."	Conditional (would+verb) He said that he would open the door.
Conditional (would+verb) He said: "I would buy Mercedes if I were rich"	Conditional (would+verb) He said that he would buy Mercedes if he had been rich"

The modal verbs *could, should, would, might, needn't, ought to, used to* do not normally change.

Example:

He said, "She might be right." – He said that she might be right.

Other modal verbs may change:

Modal	Direct speech	Reported speech
can	"I can do it."	He said he could do it.
may	" May I go out?"	He wanted to know if he might go out.
must	"She must apply for the job."	He said that she must/had to apply for the job.
will	"They will call you."	He told her that they would call her.

3- Place, demonstratives and time expressions

Place, demonstratives and time expressions change if the context of the reported statement (i.e. the location and/or the period of time) is different from that of the direct speech.

In the following table, you will find the different changes of place; demonstratives and time expressions.

Direct Speech	Reported Speech
Time Expressions	
Today	that day
Now	then
yesterday	the day before
... days ago	... days before
last week	the week before
next year	the following year
tomorrow	the next day / the following day
Place	
Here	there
Demonstratives	
This	that
These	those

B. Reporting Questions

When transforming questions, check whether you have to change:

- pronouns
- place and time expressions
- tenses (backshift)

Also note that you have to:

- transform the question into an indirect question
- use the question word (*where, when, what, how*) or *if / whether*

Types of questions	Direct speech	Reported speech
With question word (what, why, where, how...)	"Why" don't you speak English?"	He asked me why I didn't speak English.
Without question word (yes or no questions)	"Do you speak English?"	He asked me whether / if I spoke English.

C. Reporting requests / commands

When transforming requests and commands, check whether you have to change:

- pronouns
- place and time expressions

Direct speech	Reported speech
"Nancy, do the exercise."	He told Nancy to do the exercise.
"Nancy, give me your pen, please."	He asked Nancy to give him her pen.

Tenses are not relevant for requests – simply use *to* / *not to* + verb (infinitive without "to")

Example:

She said, "Sit down." - She asked me to sit down.

She said, "don't be lazy" - She asked me not to be lazy

For affirmative use *to* + infinitive (without to)

For negative requests, use *not to* + infinitive (without to).

Exercise:

Complete the following sentences in reported speech.

1. He said, "I like this song."

→ He said

2. "Where is your sister?" she asked me.

→ She asked me

3. "I don't speak Italian," she said.
→ She said
4. "Say hello to Jim," they said.
→ They asked me
5. "The film began at seven o'clock," he said.
→ He said
6. "Don't play on the grass, boys," she said.
→ She told the boys
7. "Where have you spent your money?" she asked him.
→ She asked him
8. "I never make mistakes," he said.
→ He said
9. "Does she know Robert?" he wanted to know.
→ He wanted to know
10. "Don't try this at home," the stuntman told the audience.
→ The stuntman advised the audience -----

असाइनमेंट संख्या दो

कक्षा :दसवीं

पाठ :नेताजी का चश्मा लेखक: स्वयं प्रकाश

पाठ का सारांश

पाठ के मुख्य पात्र

हालदार साहब ,

कैप्टन,

पानवाला।

इस पाठ में लेखक हमें यह बताना चाहते हैं कि देशभक्ति के लिए या देश प्रेम के लिए जरूरी नहीं है कि हम बंदूक लेकर या वर्दी पहनकर देश की सरहद पर दुश्मनों से दो-दो हाथ करें , हम देश भक्ति अपने छोटे-छोटे कार्यों से भी प्रदर्शित कर सकते हैं। जिस प्रकार हम जिस वस्तु या जिस रिश्ते से अथाह प्रेम करते हैं उसका पूरा ख्याल रखते हैं ठीक उसी प्रकार अगर हम अपने देश से प्रेम करते हैं तो देश से जुड़ी हर छोटी-बड़ी चीजों का ख्याल रखना भी एक प्रकार का देश प्रेम है। आज के परिपेक्ष में बात करें तो हम-आप घर के अंदर बंद देश भक्ति ही तो दिखा रहे हैं! ताकि हमारा देश स्वस्थ और सुरक्षित रह सके। ठीक उसी प्रकार इस पाठ में कैप्टन जो एक लंगड़ा व्यक्ति है ,गरीब है ,फेरी लगाकर चश्मे का फ्रेम बेचता है फिर भी उसके मन में देश के स्वतंत्रता सेनानियों के लिए अथाह प्रेम भरा हुआ है। इसी कारण वह नेता जी की मूर्ति पर चश्मा लगा दिया करता है लोग उसका उपहास भी उड़ाते हैं परंतु वह इन सब बातों की परवाह नहीं करता और अपना कार्य करता रहता है। हालदार साहब जो रोज़ उस कस्बे से गुजरते हैं, उनकी जानने की इच्छा दूर्दमनीय (जिसे दबा पाना संभव नहीं हो)होने लगती है और वह पान वाले से पूछते हैं कि नेताजी का चश्मा कौन बदलता है और उसके उपरांत पानवाला उन्हें कैप्टन की पूरी बात बताता है। कैप्टन को देखकर उन्हें क्या विश्वास हो जाता है की यह सेनानी तो नहीं रहा होगा फिर भी उसके मन में देश के लिए इतना प्रेम है यह देख कर उसका मन उनका मन कैप्टन के लिए आदर से भर जाता है। एक दिन जब उन्हें यह पता चलता है कि कैप्टन की मृत्यु हो गई और उन्हें तब यह एहसास होता है कि शायद कैप्टन के साथ इस कस्बे से देश प्रेम भी मर गया होगा परंतु अगले दिन जब वह मूर्ति पर सरकंडे का चश्मा (सरकंडा एक प्रकार का घास होता है जिससे मोड़कर हम कुछ भी बना सकते हैं)लगा हुआ देखते हैं तो उन्हें प्रसन्नता मिश्रित आश्चर्य होता है और संतोष भी होता है क्योंकि चश्में को देख कर कोई भी यह कह सकता था कि यह किसी बच्चे ने बनाया है और उन्हें यह लगता है कि आज के युवा पीढ़ी में भी या बच्चों में भी देशप्रेम जीवित है।

(इस गद्यांश को कापी में नहीं लिखना है। इसे पढ़कर पाठक के आधार पर उत्तर लिखें)

निम्नलिखित प्रश्नों के उत्तर दें

प्रश्न १ :सेनानी ना होते हुए भी चश्मे वाले को लोग कैप्टन क्यों कहते थे ?

प्रश्न २ : मूर्ति पर सरकंडे का चश्मा क्या उम्मीद जगाता है?

प्रश्न ३ : मूर्ति पर सरकंडे का चश्मा देखकर हालदार साहब भावुक क्यों हो गए ?

प्रश्न ४: हालदार साहब ने अपने ड्राइवर को चौराहे पर ना रुकने को क्यों कहा था?

प्रश्न ५: पान वाले का एक रेखा चित्र प्रस्तुत करें ।

प्रश्न ६: " वह लंगड़ा क्या जाएगा फौज में पागल है पागल " , कैप्टन के प्रति पान वाले की इस टिप्पणी पर अपनी प्रतिक्रिया लिखिए।

अन्य महत्वपूर्ण प्रश्न

(क) आशय स्पष्ट करें : 'बार-बार सोचते क्या होगा उस कौम का जो अपने देश की खातिर घर गृहस्थी जवानी जिंदगी सब कुछ होम कर देने वालों पर भी हंसती है और अपने लिए बिकने का मौका ढूंढती है '

(ख) आपके अनुसार चौक चौराहों पर लगने वाली स्वतंत्रता सेनानियों की मूर्तियां क्या उनका सम्मान बढ़ाती हैं?

नोट : कृपया अपने कार्य उसी कॉपी में करें जिसमें आपने पाठ 1 के प्रश्न उत्तर को लिखा है।

व्याकरण : पद परिचय

परिभाषा :

शब्द भाषा की अर्थवान स्वतंत्र इकाई है, तो वाक्य में प्रयुक्त शब्द पद हैं ,और वाक्य में आए पदों का विस्तृत व्याकरणिक परिचय प्रस्तुत करना ही पद परिचय है ।

(जिस प्रकार हम अपना परिचय किसी को देते हैं तो सर्वप्रथम अपना नाम, माता -पिता का नाम ,कक्षा आदि के विषय में बताते हैं) ठीक उसी प्रकार इन पदों के परिचय के लिए भी कुछ नियम है वाक्य में प्रयुक्त हर एक शब्द की पहचान सर्वप्रथम हम उसके भेद ,उपभेद ,लिंग, वचन, कारक आदि से दे सकते हैं, जैसे: राम खाना खाता है। इस वाक्य में अगर राम शब्द का पद परिचय करना हो तो हम सबसे पहले इसके भेद को लिखेंगे यानी राम संज्ञा है और संज्ञा में उपभेद यानी व्यक्तिवाचक संज्ञा

उसके उपरांत उसके लिंग का परिचय देंगे यानी राम पुलिंग है उसके बाद वचन यहां एकवचन होगा ,काल यानी वर्तमान काल ।इतने प्रकार के परिचय के उपरांत हम यह निश्चित हो जाएंगे कि पद परिचय सही है। मूलतः पद परिचय करने के पहले हमें संज्ञा सर्वनाम ,विशेषण ,क्रिया ,विशेषण , क्रिया विशेषण,काल ,समुच्चयबोधक ,संबंधबोधक ,विस्मयादिबोधक इन सभी की परिभाषा एवं भेदों के नाम जानना आवश्यक है ।

(अब सबसे पहले हम संज्ञा के भेद जानते हैं)

संज्ञा की परिभाषा : संज्ञा शब्दों से प्रायः किसी व्यक्ति ,जाति या भाव के नाम का बोध होता है। इसलिए संज्ञा के तीन प्रमुख भेद किए जाते हैं। व्यक्तिवाचक संज्ञा ,जातिवाचक संज्ञा और भाववाचक संज्ञा ।

व्यक्तिवाचक संज्ञा ;

उदाहरण :मनुष्यों के नाम जैसे शीला उर्मिला राम सीता आदि

वस्तुओं के नाम

स्थानों के नाम जैसे भारत, लखनऊ दिल्ली ,आगरा, जर्मनी आदि

वाक्य के उदाहरण: मोहन बाजार जाता है।

(इसमें मोहन व्यक्तिवाचक संज्ञा जो एक व्यक्ति का नाम है।)

जातिवाचक संज्ञा :

प्रत्येक व्यक्ति, प्राणी, वस्तु ,स्थान किसी ने किसी जाति का सदस्य होता है ,जैसे दिल्ली ,आगरा नगर है । हिमालय पहाड़ है ,गंगा नदी है, एरावत हाथी है ,शीला ,राम मनुष्य है। तो जिस शब्द से हमें किसी जाति का विशेष बोध होता है उसे हम जातिवाचक संज्ञा कहते हैं ।

उदाहरण: बालक ,स्त्री ,नगर , जानवर ,पक्षी ,नदी, पर्वत इत्यादि।

भाववाचक संज्ञा :

जिन संज्ञा से किसी व्यक्ति या वस्तु के गुण ,धर्म ,दोष, शील ,स्वभाव ,अवस्था, भाव आदि का बोध होता हो वे भाववाचक संज्ञा कहलाते हैं।(अंग्रेजी की व्याकरण में हम देखें तो इसे abstract noun कहकर हम बुलाते हैं) ऐसी भावना जिसे हम सिर्फ महसूस कर सकें , छू न सके जैसे क्रोध ,भय ,प्रेम ,बचपन और बुढ़ापा, मोटापा, बेईमानी, प्यार ,सुंदरता, चतुराई, प्रार्थना इत्यादि

निम्नलिखित वाक्यों से संज्ञा छांट कर उसके भेद लिखें:-

१. सीता दिल्ली जा रही है।
२. रोहन खाना बना रहा है।
३. भारत में अनेक नदियां बहती हैं।
४. हल्दी के गुण चमत्कारी है ।
५. हम सब आगरा घूमने जा रहे हैं।

- ६: रमेश यहां तीसरे बंगले में रहता था।
७: यह किताब मेरी छोटी बहन की है।
८: मीरा पांचवी कक्षा में पढ़ती है।
९: वह मेरे बचपन का मित्र है।
१०: मोहन का नौकर बहुत इमानदार है।
११: भारत में अनेक पर्वत हैं परंतु हिमालय का कोई जोड़ नहीं।
१२: गांधी जी ने कहा था कि मानवता सबसे बड़ा धर्म है।
१३: अभी सभी बाजार जा रहे हैं।
१४: आप दिल्ली से कब लौटे?
१५: कक्षा में लड़के शोर कर रहे हैं और लड़कियां पढ़ाई कर रही हैं।

सर्वनाम परिभाषा:

वाक्यों में संज्ञा की पूर्ण आवृत्ति बचाने के लिए संज्ञा के स्थान पर जिन शब्दों का प्रयोग किया जाता है वह सर्वनाम कहलाते हैं।

जैसे : मैं, तुम, हम, वे इत्यादि।

सर्वनाम के भेद:

संख्या १ : पुरुषवाचक सर्वनाम

जब हम बात करते हैं तो कोई ना कोई श्रोता हमारे सामने अवश्य होता है, कभी तो हम अपने बारे में बात करते हैं तो कभी सामने वाली के बारे में और कभी किसी तीसरे व्यक्ति के बारे में, जो वहां उपस्थित नहीं होता ऐसी स्थिति में 3 व्यक्तियों बोलने वाले सुनने वाले तथा जो वहां उपस्थित नहीं हैं के लिए जिन शब्द सर्वनाम शब्दों का प्रयोग करते हैं पुरुषवाचक सर्वनाम कहलाते हैं।

जैसे मैं, हम, तू, तुम आप इत्यादि।

संख्या २: निश्चयवाचक सर्वनाम

वे सर्वनाम जो किसी व्यक्ति वस्तु घटना आदि का निश्चित बोध कराते हैं निश्चयवाचक सर्वनाम कहलाते हैं।

जैसे : यह घड़ी मेरी है।

वह ले आओ।

संख्या ३ : अनिश्चयवाचक सर्वनाम

कभी-कभी ऐसा भी होता है कि किसी व्यक्ति वस्तु का हमें आभास तो रहता है परंतु निश्चय पूर्वक यह बताना कठिन होता है कि वह वस्तु क्या है या वह व्यक्ति कौन है जब हम इस प्रकार के शब्दों का प्रयोग किया जाता है अनिश्चयवाचक सर्वनाम कहलाते हैं।

जैसे मुझे ऐसा लगा जैसे कोई खड़ा है।

कुछ खाकर बाहर जाना।

संख्या 4: प्रश्नवाचक सर्वनाम

एक बार हम किसी वस्तु व्यक्ति प्राणी या किसी घटना के संबंध में प्रश्न उठाते रहते हैं इन प्रश्नों में हम भाषा में कौन, क्या, कौन सा कौन सी आदि शब्दों का प्रयोग करते हैं। यह सभी प्रश्नवाचक सर्वनाम कहलाते हैं।

जैसे कौन है वहां सामने आओ।

व्रत के दिन आप क्या खाते हैं?

संख्या 5 :संबंधवाचक सर्वनाम

कुछ सर्वनाम ऐसे होते हैं जो प्रधान उपवाक्य में आए संज्ञा या सर्वनाम के साथ आश्रित उपवाक्य का संबंध जोड़ने का कार्य करते हैं ऐसे सर्वनामों को संबंधवाचक सर्वनाम कहा जाता है।

उदाहरण : वह लड़का जो पकड़ा गया वही चोर था।

जिसको पैसा मिलेगा वह काम करेगा।

जो परिश्रम करेगा वह अवश्य सफल होगा।

संख्या 6 :निजवाचक सर्वनाम

निज शब्द का अर्थ होता है - अपना, जिन सर्वनाम का प्रयोग स्वयं के लिए किया जाता है यह निजवाचक सर्वनाम कहे जाते हैं।

जैसे : मैं स्वयं चला जाऊंगा।

आप रहने दीजिए वह अपने आप ठीक कर लेगा।

अभ्यास

निम्नलिखित वाक्यों से सर्वनाम छांट कर उसके भेद लिखें

१:यह वही फिल्म है जिसे तुम देखना चाहते थे।

२:आप आज शाम को क्या कर रहे हैं ?

३:कुछ खाकर बाहर जाना।

४:बच्चों के लिए बाजार से कुछ लेते आना ।

५:गांधीजी अपना काम स्वयं किया करते थे ।

६:वह मशीन अपने आप चलने लगी ।

७:चाय में कुछ पड़ा है ।

८: आपको कोई बुला रहा है।

९: यह लाना जरा ।

१०:मैं दिल्ली जा रहा हूं ।

११: आप लोग यहां बैठे।

१२: तुम सब सिनेमा देखने चले जाओ।

विशेषण परिभाषा:

जो शब्द संज्ञा या सर्वनाम की विशेषता संख्या ,मात्रा या परिमाण आदि बताते हैं वह विशेषण कहलाते हैं।

विशेषण के भेद

संख्या १: गुणवाचक विशेषण

विशेषण जो अपने विशेष्य के गुणों की विशेषता का बोध कराते हैं वे गुणवाचक विशेषण कहलाते हैं।

उदाहरण: काला कुत्ता ,सफेद कमीज ,सुंदर फूल इत्यादि

संख्या २: परिमाणवाचक विशेषण

जो विशेषण विशेष्य की मात्रा या परिमाण के विषय में जानकारी देते हैं वे परिमाणवाचक विशेषण कहलाते हैं ।

जैसे 4 लीटर दूध, 5 किलो आटा, थोड़ा चीनी इत्यादि।

(इसमें ध्यान देने की आवश्यकता यह है कि परिमाणवाचक विशेषण यानी वस्तु जिसे हम नापतोल सकते हैं)

संख्या ३: संख्या वाचक विशेषण

विशेष्य की संख्या से संबंधित विशेषता बताने वाले विशेषण को संख्यावाचक विशेषण कहते हैं ।

संज्ञा या सर्वनाम जिन्हें हम गिन सकते हैं ,यह दो प्रकार के होते हैं ,निश्चित संख्या एवं अनिश्चित संख्यावाचक।

जैसे : तीन चोर ,एक दर्जन केला ,कुछ रोटियां इत्यादि

संख्या 4 : सार्वनामिक विशेषण

कुछ सर्वनाम भी जब किसी संज्ञा की विशेषता बताते हैं तो वह विशेषण के रूप में प्रयुक्त होते हैं तब उन्हें हम सार्वनामिक

विशेषण कहते हैं।

जैसे : मेरी किताब, आपका बेटा, किसी का मकान, कोई लड़का इत्यादि।

प्रविशेषण : वह शब्द जो विशेषण की विशेषता बताती हो वह प्रविशेषण कहलाते हैं ।

जैसे: बहुत बेईमान

बहुत सुंदर इत्यादि।

निम्नलिखित वाक्यों से विशेषण छांट कर उसके भेद लिखें:

१: सीता ने लाल साड़ी पहनी है।

२: बाजार से 4 लीटर दूध लेकर आओ ।

३:मुझे चार रोटियां खानी है।

४: वह बहुत बेईमान है ।

५: कक्षा में 40 छात्र बैठे हैं

६: कुछ छात्राएं शोर मचा रही हैं।

७: वह थोड़ा चावल खाता है ।

८: आपका बेटा बुद्धिमान है ।

९: किसी का मकान खाली है ।

१० : बगीचे में सुंदर फूल खिले हैं।

१२: मेरे पास 4 किताबें हैं ।

१३: उसके पास 10 क्विंटल गेहूं है।

१४: मुझे कमीज के लिए 4 मीटर कपड़े चाहिए।

१५: उसे कच्चा आम पसंद है

नोट :: ऊपर लिखी सभी परिभाषाएं , भेद की परिभाषा , उदाहरण क्रमवार कॉपी में लिखें एवं अभ्यास के लिए दिए गए वाक्यों को लिखकर उसके भेद छांटकर कॉपी में लिखें । यह अनिवार्य है।

सारे असाइनमेंट हिंदी की एक ही कॉपी में करनी है।

सत्र - 2020-2021

निम्नतः कार्यम् - II

Page No.:

Date: / /

कक्षा - दशमी, विषय - संस्कृतम्

पाठ - 2 बुद्धिधर्मलवती सदा

पाठान्ध्यास कार्यम् -

प्रश्न-1 अधोलिखितानां प्रश्नानाम् उत्तरीणि संस्कृत

भाषया लिखत -

1. बुद्धिधर्मती केन उपैता पितुर्गृहं प्रति चलिता?
2. व्याघ्रः किं विचार्य पलायितः?
3. लोकं महतो ममात् कः मुच्यते?
4. जम्बुकः किं वदन् व्याघ्रस्य उपहासं करोति?
5. बुद्धिधर्मती शृगालं किम् उक्तवती?

प्रश्न-2. रेखाङ्कितपदामाधृत्य प्रश्ननिर्माणं कुरुत -

- क. तत्र राजसिंहो नाम राजपुत्रः वसति स्म।
- ख. बुद्धिधर्मती चपेटया पुत्रोऽहृतवती।
- ग. व्याघ्रं दृष्ट्वा द्यूतः शृगालः अवदत्।
- घ. त्वं मानुषात् विभेजि।
- ङ. पुरा त्वया महाम् व्याघ्रग्रामं दत्तम्।

प्रश्न-3. पाठात् चित्वा पर्यायपदं लिखत -

- क. वनम् - ख. शृगालः ग. शीघ्रम्
- घ. पत्नी - ङ. गच्छसि

प्रश्न-4. पाठात् चित्वा विपरीतार्थकं पदं लिखत -

क. उपमः रव. उक्त्वा ग. अधुना
 द. अवेला इ. बुद्धिहीना

प्रश्न - 5. सीन्धां सीन्धविच्छेदं वा लुलत
 क. पितुर्गृहम् रव. एकैकः ग. यत्र + आस्ते
 द. अन्यः + अपि इ. इति + उक्त्वा
 च. बालः + चरति घ. इतस्ततः ज. शान्तिरोधि
 झ. मानुखैति झ. वधूः + इव ट. देउलारम्भो

प्रश्न - 6. अधोलिखित वाक्यानां संस्कृत भाषायां अनुवादं
 कृत्वा लिखत - -

1. इमाम राम का छोटा भाई है।
2. गाँव के चारों ओर वृक्ष हैं।
3. भारत ऋषि-मुनियों का देश है।
4. गंगा भारत की सर्वश्रेष्ठ नदी है।
5. शिक्षा विनम्रता देती है।
6. कल तुम कहां गये थे ?
7. सदा सत्य बोलना चाहिए।
8. कल संस्कृत की परीक्षा होगी।
9. तुम्हारा नाम क्या है ?
10. मोहन बाघ से डरता है।

प्रश्न - 7. अव्ययपदं चित्वा रिक्तस्थानानि पूरयत -
 1. मनुष्यः अनिच्छन् _____ पापं करोति।
 2. वने पक्षः _____ ममन्ति।

3. वने सिंहः — गर्जति ।
4. संस्कृतं — भारतस्य प्रतिष्ठा नास्ति ।
5. ईश्वरः — व्यापकः ।
6. ग्रामात् — नदी वहति ।
7. — अशोकः नाम राजा आसीत् ।
8. — राजा तथा सजा ।
9. — बंद चित्रं पश्यत ।
10. कदापि कार्यं — न कर्तव्यम् ।

[पुरा, यथा, सम्प्रति, बहिः, सहसा,
विना, सर्वत्र, अपि, उच्येः, इतस्ततः]

श्न-8. अधोलिखित गद्यांशान् पठित्वा प्रश्नानां उत्तराणि लिखत -

अस्ति देउलारण्यो ग्रामः । तत्र राजसिंहः नाम राजपुत्रः वसति स्म । एकदा केनापि आवश्यक-कार्येण तस्य भार्या बुद्धिमती पुत्रद्वयोपेता पितु-मृत्युं प्रति चिन्तित । भार्या गहनजानने सा एकं व्याघ्रं ददर्श । सा व्याघ्रमागच्छन्तं दृष्ट्वा धावद्गतात् पुत्रौ चपटेया सहस्र जगाद - "कथमे-कैकशो व्याघ्रमक्षणाय कल्पं बुरखः ? अभयेकस्ता-वद्विमज्ज भुज्जताम् । पश्चात् अन्यो द्वितीयः कश्चिल्लक्ष्यते ।"

I. एकपदेन उत्तरत -

1. राजसिंहः कुत्र वसति स्म ?

2. राजसिंहः कः आसीत् ?
 3. सा बुद्धिमती कुत्र रुक्मं व्याघ्रं ददर्श ?
 4. बुद्धिमती पुत्रद्वयोपेता कुत्र चीलता ?
- II. पूर्णवाक्येन उत्तरत -
1. सा पुत्रौ चपेटया प्रहृत्य किम् जगाद ?
 2. सा पुत्रौ कथम् चपेटया प्रहृत्य जगाद ?

- III. भाषिककार्यम् -
1. "जगाद" इति क्रियापदस्य कर्तृपदं किम् ?
 2. "अथम्" इति पदं कस्यै प्रयुक्तं ?
 3. "भार्गी" इति पदस्य विशेषणपदं किम् ?
 4. "गच्छन्तम्" क्रियापदस्य विपर्ययपदं किम् ?

खंन-१. सत्रमनिर्धारणं कुरुत -

क. 7: 30 -	ख. 2: 15 -
ग. 10: 45 -	घ. 12: 00 -
ङ. 8: 30 -	च. 1: 15 -
छ. 3: 45 -	ज. 5: 45 -
झ. 4: 30 -	ञ. 10: 00 -

GURU GOBIND SINGH PUBLIC SCHOOL

BOKARO SECTOR-V

SUBJECT:- MATHEMATICS

CLASS:-10

CHAPTER: 3(LINEAR EQUATION IN TWO VARIABLES)

Equation

An equation is a statement that two mathematical expressions having one or more variables are equal.

Linear Equation

Equations in which the powers of all the variables involved are one are called linear equations. The degree of a linear equation is always one.

General form of a Linear Equation in Two Variables

An equation in the form $ax + by + c = 0$, where a , b and c are real numbers, and $a \neq 0$ and $b \neq 0$, is called a linear equation in two variables x and y .

For Example: $2x + 3y + 7 = 0$, where $a = 2$, $b = 3$, $c = 5$ are real numbers. So, given equation is a linear equation in two variables.

Note: Each solution (x, y) of a linear equation in two variables, $ax + by + c = 0$, corresponds to a point on the line representing the equation, and vice versa.

For Example: $2x + 3y = 5$ has $(1, 1)$ as its solution. So, $(1, 1)$ will lie on the line $2x + 3y = 5$.

The general form for a pair of linear equations in two variables x and y is $a_1x + b_1y + c_1 = 0$ and $a_2x + b_2y + c_2 = 0$, where $a_1, b_1, c_1, a_2, b_2, c_2$ are all real numbers and $a_1^2 + b_1^2 \neq 0, a_2^2 + b_2^2 \neq 0$.

For Example: $2x + 3y - 7 = 0$ and
a pair of linear equations.

$$9x - 2y + 8 = 0 \text{ forms}$$

Algebraic Methods of Solving a Pair of Linear Equations: **(i) Substitution Method**

Follow steps given below to understand Substitution Method:

Step 1: Find the value of one variable, say y in terms of the other variable, i.e., x from either equation, whichever is convenient.

Step 2: Substitute this value of y in the other equation, and reduce it to an equation in one variable, i.e., in terms of x , which can be solved. Sometime, one can get statements with no variable. If this statement is true, you can conclude that the pair of linear equations has infinitely many solutions. If the statement is false, then the pair of linear equations is inconsistent.

Step 3: Substitute the value of x (or y) obtained in Step 2 in the equation used in Step 1 to obtain the value of the other variable.

For Example: Solve the following pair of equations by

substitution method: $7x - 15y = 2$ and $x + 2y = 3$

Solution: We can re-write $x + 2y = 3$ as $x = 3 - 2y$ – (1)

Substituting value of x in $7x - 15y = 2$, we get,

$$7(3 - 2y) - 15y = 2$$

$$21 - 14y - 15y = 2$$

$$-29y = -19$$

Thus, $y = 19/29$.

Now, substituting value of y in (1), we get,

$$x = 3 - 2(19/29) = 49/29.$$

(ii) Elimination Method:

Follow steps given below to understand Elimination Method:

Step 1: First multiply both the equations by some suitable non-zero constants to make the coefficients of one variable (either x or y) numerically equal.

Step 2: Then add or subtract one equation from the other so that one variable gets eliminated. If you get an equation in one

variable, go to Step 3. If in Step 2, we obtain a true statement involving no variable, then the original pair of equations has infinitely many solutions. If in Step 2, we obtain a false statement involving no variable, then the original pair of equations has no solution, i.e., it is inconsistent.

Step 3: Solve the equation in one variable (x or y) so obtained to get its value.

Step 4: Substitute this value of x (or y) in either of the original equations to get the value of the other variable.

For Example: Solve the following pair of equations by elimination method: $9x - 4y = 2000$ and $7x - 3y = 2000$.

Solution: Multiplying $9x - 4y = 2000$ by 3 and $7x - 3y = 2000$ by 4, we get,

$$27x - 12y = 6000 \text{ and } 28x - 12y = 8000$$

Subtracting both these equations, we get,

$$(28x - 27x) - (12y - 12y) = 8000 - 6000$$

$$x = 2000$$

Substituting value of x in $9x - 4y = 2000$, we get,

$$9(2000) - 4y = 2000$$

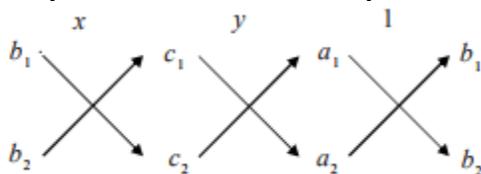
$$y = 4000.$$

(iii) Cross Multiplication Method:

Follow steps given below to understand Cross Multiplication Method:

Step 1: Write the given equations in the form $a_1x + b_1y + c_1 = 0$ and $a_2x + b_2y + c_2 = 0$.

Step 2: Take the help of the diagram below



And write the equations as shown below

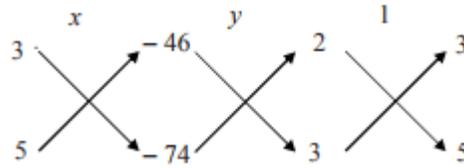
$$\frac{x}{b_1c_2 - b_2c_1} = \frac{y}{c_1a_2 - c_2a_1} = \frac{1}{a_1b_2 - a_2b_1}$$

Step 3: Find x and y, provided

$$a_1b_1 - a_2b_1 \neq 0.$$

For Example: Solve the following pair of equations by cross multiplication method: $2x + 3y - 46 = 0$ and $3x + 5y - 74 = 0$.

Given equations are in form $a_1x + b_1y + c_1 = 0$ and



$a_2x + b_2y + c_2 = 0$.

Now, with the help of diagram we can rewrite equations as

$$\frac{x}{(3)(-74) - (5)(-46)} = \frac{y}{(-46)(3) - (-74)(2)} = \frac{1}{(2)(5) - (3)(3)}$$

$$\frac{x}{(-222 + 230)} = \frac{y}{(-138 + 148)} = \frac{1}{(10 - 9)}$$

$$\frac{x}{8} = \frac{y}{10} = \frac{1}{1}$$

Thus, $x = 8$ and $y = 10$.

(8) Equations Reducible to a Pair of Linear Equations in Two Variables:

Let us understand it by an example:

For Example: Solve $\frac{2}{x} + \frac{3}{y} = 13$ and $\frac{5}{x} - \frac{4}{y} = -2$.

We can rewrite the given equations as,

$$2\left(\frac{1}{x}\right) + 3\left(\frac{1}{y}\right) = 13 \text{ and } 5\left(\frac{1}{x}\right) - 4\left(\frac{1}{y}\right) = -2$$

Let us substitute $\left(\frac{1}{x}\right) = p$ and $\left(\frac{1}{y}\right) = q$, so we get,

$$2p + 3q = 13 \text{ and } 5p - 4q = -2$$

On solving these equations, we get,

$$p = 2 \text{ and } q = 3.$$

We know, $p = 1/x = 2$ and $q = 1/y = 3$.

Thus, $x = \frac{1}{2}$ and $y = \frac{1}{3}$.

Geometrical Representation of a Linear Equation

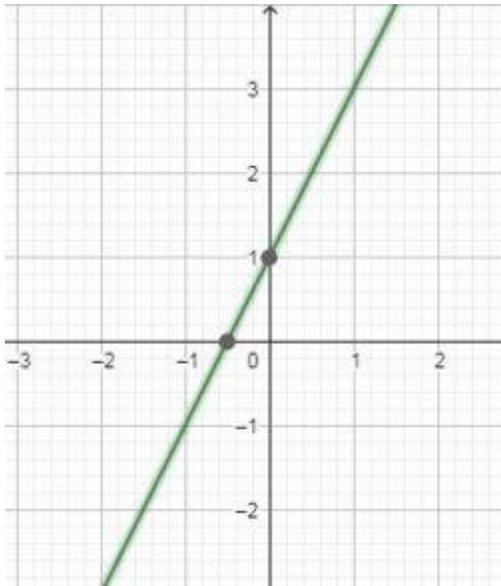
Geometrically, a linear equation in two variables can be represented as a straight line.

$$2x - y + 1 = 0$$

$$\Rightarrow y = 2x + 1$$

Table:

x	0	-1
y	1	0



Graph of $y = 2x + 1$

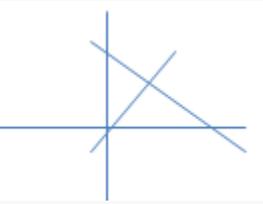
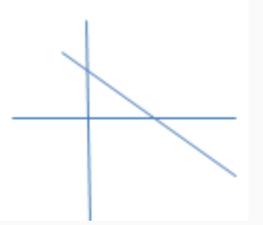
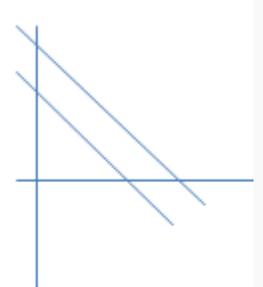
Plotting a Straight Line

The graph of a linear equation in two variables is a straight line. We plot the straight line as follows:

- Take any value for one of the variables ($x_1 = 0$) and substitute it in the equation to get the corresponding value of the other variable (y_1).
- Repeat this again (put $y_2 = 0$, get x_2) to get two pairs of values for the variables which represent two points on the Cartesian plane. Draw a line through the two points.

Any additional points plotted in this manner will lie on the same line.

Here is the relationship table between the coefficient of the Linear equations in Two Variable and Graphical representation

Simultaneous pair of Linear equation	Condition	Graphical representation	Algebraic interpretation
$a_1x + b_1y + c_1 = 0$ $a_2x + b_2y + c_2 = 0$ Example $x - 4y + 14 = 0$ $3x + 2y - 14 = 0$	$\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$	Intersecting lines. The intersecting point coordinate is the only solution 	One unique solution only.
$a_1x + b_1y + c_1 = 0$ $a_2x + b_2y + c_2 = 0$ Example $2x + 4y = 16$ $3x + 6y = 24$	$\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$	Coincident lines. The any coordinate on the line is the solution. 	Infinite solution.
$a_1x + b_1y + c_1 = 0$ $a_2x + b_2y + c_2 = 0$ Example $2x + 4y = 6$ $4x + 8y = 18$	$\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$	Parallel Lines 	No Solution

QUESTIONS

Question 1. Which of these equation have i) Unique solution ii) Infinite solutions iii) no solutions

1. $152x - 378y = -74$, $-378x + 152y = -604$
2. $x + 2y = 10$, $3x + 6y = 30$
3. $3x + 4y = 6$, $12x + 16y = 30$
4. $7x - 11y = 53$, $19x - 17y = 456$
5. $x = 7, y = -2$
6. $ax + by = a - b$, $bx - ay = a + b$
7. $2x + 3y = 0$, $124x + 13y = 0$

Question 2.

Using substitution method solve the below equation

- a. $x - 2y + 300 = 0$, $6x - y - 70 = 0$
- b. $5x - y = 5$, $3x - y = 3$

Question 3.

Using elimination method, solve the following

- a. $x + y - 40 = 0$, $7x + 3y = 180$
- b. $x + 10y = 68$, $x + 15y = 98$

Question 4 .

Solve the below linear equation using cross-multiplication method

1. $(a - b)x + (a + b)y = a^2 - 2ab - b^2$, $(a + b)(x + y) = a^2 + b^2$
2. $x + y = 5$, $2x - 3y = 4$

Question 5.

Find the value of p for which the linear pair has infinite solution

$$12x + 14y = 0$$
$$36x + py = 0$$

Question 6.

Solve the following pair of linear equations:

$$y - 4x = 1$$

$$6x - 5y = 9$$

Question 7.

Solve using cross multiplication method:

$$x + y = 1$$

$$2x - 3y = 11$$

Question 8.

Draw the graphs of the pair of equations $x + 2y = 5$ and $2x - 3y = -4$. Also find the points where the lines meet the x-axis.

Question 9.

Find whether the lines representing the following pair of linear equations intersect at a point, are parallel or coincident:

$$2x - 3y + 6 = 0, 4x - 5y + 2 = 0$$

Question 10.

Solve for x and y

$$x + 2y - 3 = 0$$

$$3x - 2y + 7 = 0$$

Word Problems

Question 1

P and Q each have certain number of apples. P says to Q, "if you give me 10 of your apples, I will have twice the number of apples left with you". Q replies, "if you give me 10 of your apples, I will have the same number of apples as left with you." Find the number of apples with P and Q separately

Hint: Let P have x apples and Q have y apples

$$x + 10 = 2(y - 10)$$

$$x - 10 = y + 10$$

Answer (70, 50)

Question 2

On selling a T. V. at 5% gain and a fridge at 10% gain, Reliance digital gains Rs 2000. But if it sells the T. V. at 10% gain and the fridge at 5% loss. He gains Rs 1500 on the transaction. Find the actual prices of T. V. and fridge.

Hint:

$$5100x + 10100y = 2000$$

$$10100x - 5100y = 1500$$

Answer (20,000, 10,000)

Question 3

A and B are friends and their ages differ by 2 years. A's father D is twice as old as A and B is twice as old as his sister C. The age of D and C differ by 40 years. Find the ages of A and B.

Question 4

Five years hence, father's age will be three times the age of his son. Five years ago, father was seven times as old as his son. Find their present ages.

Hint:

$$(x+5) = 3(y+5)$$

$$(x-5) = 7(y-5)$$

Answer 40 year, 10 year

Question 5

The ages of two friends Manjit and Ranjit differ by 3 years. Manjit's father Dharam is twice as old as Manjit and Ranjit as twice as old as his sister Jaspreet. The ages of Jaspreet and Dharam differ by 30 years. Find the ages of Manjit and Ranjit.

Hint:

Case -1

$$x - y = 3$$

$$2x - y = 30$$

(19,16)

Case -2

$$y - x = 3$$

$$2x - y = 30$$

(21,24)

Question 7

The boat goes 30 km upstream and 44 km downstream in 10 hours. In 13 hours, it can go 40 km upstream and 55 km downstream. Determine the speed of stream and that of the boat in still water.

Hint:

Let speed of boat in still water be x km/h and speed of stream be y km/h.

Speed upstream = $(x - y)$ km/h

Speed downstream = $(x + y)$ km/h

$$30(x - y) + 44(x + y) = 10$$

$$40(x - y) + 55(x + y) = 13$$

Now Substituting $p = x - y$ and $q = x + y$, then solving

$$p = 1/5 \text{ and } q = 1/11$$

Hence $x - y = 5$ and $x + y = 11$, Solving these,

$$x = 8 \text{ km/hr and } y = 3 \text{ km/hr}$$

Question 8

A boat goes 24 km upstream and 28 km downstream in 6 hrs. It goes 30 km upstream and 21 km downstream in 6 hrs and 30 min. Find the speed of the boat in still water and also speed of the stream.

Hint:

This question is exactly same as above question Let speed of boat in still water be x km/h and speed of stream be y km/h.

Speed upstream= $(x - y)$ km/h

Speed downstream= $(x + y)$ km/h

$$24(x-y)+28(x+y)=6$$

$$30(x-y)+21(x+y)=6.5$$

Now Substituting $p=x-y$ and $q=x+y$, then solving

$$p=1/6 \text{ and } q=1/14$$

Hence $x-y=6$ and $x+y=14$, Solving these,

$$x=10 \text{ km/hr and } y=4\text{km/hr}$$

Question 9

A man walks a certain distance with certain speed. If he walks $1/2$ km an hour faster, he takes 1 hour less. But, if he walks 1 km an hour slower, he takes 3 more hours. Find the distance covered by the man and his original rate of walking.

Hint:

Let v = the rate the man walked, t =time taken originally and d =distance

$$d=vt$$

Case 1 (faster)

$$\text{Speed} = (v+.5)$$

time= $(t-1)$ = time taken at the faster speed

Now distance=velocity \times time

$$vt=(v+.5)(t-1)$$

$$v-.5t=-.5\text{-----}(1)$$

Case 2 (slower)

$$\text{speed}=(v-1)$$

$$\text{time}=(t+3)$$

Now distance=velocity \times time

$$vt=(v-1)(t+3)$$

$$-3v+t=-3\text{-----}(2)$$

Solving (1) and (2)

$v=4$ km/hr, $t=9$ hr, hence $d= 36$ km

Question 10

Anuj travels 600 km partly by train and partly by car. If he covers 400 km by train and the rest by car, it takes him 6 hours and 30 minutes. But, if he travels 200 km by train and the rest by car, he takes half an hour longer. Find the speed of the train and that of the car.

Hint:

Let x and y be the speed of train and car, then using time = distance/speed

$$400x + 200y = 6.5$$

$$200x + 400y = 7$$

hence $x=100$ km/hr and $y=80$ km/hr

Question 11

A boat goes 12 km upstream and 40 km downstream in 8 hours. It can go 16 km upstream and 32 km downstream in the same time. Find the speed of the boat in still water and the speed of the stream.

Hint:

This question is exactly same as above question. Let speed of boat in still water be x km/h and speed of stream be y km/h.

Speed upstream = $(x - y)$ km/h

Speed downstream = $(x + y)$ km/h

$$12(x - y) + 40(x + y) = 8$$

$$16(x - y) + 32(x + y) = 8$$

Now substituting $p = x - y$ and $q = x + y$, then solving

$$12p + 40q = 8$$

$$16p + 32q = 8$$

$$p=1/4 \text{ and } q=1/8$$

Hence $x-y=4$ and $x+y=8$, Solving these,
 $x=6$ km/hr and $y=2$ km/hr

Question 12

Hadi travelled 300 km by train and 200 km by taxi, it took him 5 hours 30 minutes. But if he travels 260 km by train and 240 km by taxi he takes 6 minutes longer. Find the speed of the train and that of the taxi.

Similar Question

$$x=100 \text{ km/hr and } y=80 \text{ km/hr}$$

Question 13

Places X and Y are 100 km apart on a highway. One car starts from X and another from Y at the same time. If the cars travel in the same direction at different speeds, they meet in 5 hours. If they travel towards each other, they meet in 1 hour. What are the speeds of two cars?

Question 14

A person invested some amount at the rate of 12% simple interest and some other amount at the rate of 10% simple interest. He received yearly interest of Rs. 130. But if he had interchanged the amounts invested, he would have received Rs 4 more as interest. How much amount did he invest at different rates?

Hint:

Let x and y be the amount invested

Then

$$12x + .1y = 130$$

$$12y + .1x = 134$$

Solving

$$x=500, y=700$$

Question 15

Students of a class are made to stand in rows. If one student is extra in a row, there would be 2 rows less. If one student is less in a row there would be 3 rows more. Find the number of students in the class.

Hint:

Let number of rows is x and number of students is y in a row.

Then total number of students = xy

$$(x-2)(y+1)=xy \text{ or } x-2y=2$$

$$(x+3)(y-1)=xy \text{ or } -x+3y=3$$

Solving

$$x=12, y=5$$

So students are = $12 * 5 = 60$

Question 16

8 men and 12 boys can finish a piece of work in 10 days while 6 men and 8 boys can finish it in 14 days. Find the time taken by one man alone and that by one boy alone to finish the work.

Hint:

Let x be the time taken by man and y be the time taken by boy

Then

$$8x+12y=110$$

$$6x+8y=114$$

Substituting $p=1/x$ and $q=1/y$ and solving

$$p=1/140 \text{ and } q=1/280$$

Hence $x=140$ days and $y=280$ days

Question 17

On selling a tea-set at 5% loss and a soup-set at 15% gain, a crockery seller gains Rs. 7. If he sells the tea-sets at 5% gain and the soup-sets at 10% gain, he gains Rs 13. Find the actual price of the tea-set and the soup-set.

Question 18

4 men and 6 boys can do a piece of work in 20 days. It is done by 3 men and 4 boys in 28 days. How long would it take for one man or one boy to do it?

Question 19

2 men and 7 boys can do a piece of work in 4 days. The same work is done in 3 days by 4 men and 4 boys. How long would it take one man and one boy to do it?

Question 20

Father's age is three times the sum of his two children's age. After 5 years his age will be twice the sum of the ages of two children. Find the age of father.

NOTE:

Do All Exercise from N.C.E.R.T .

Assignment 2

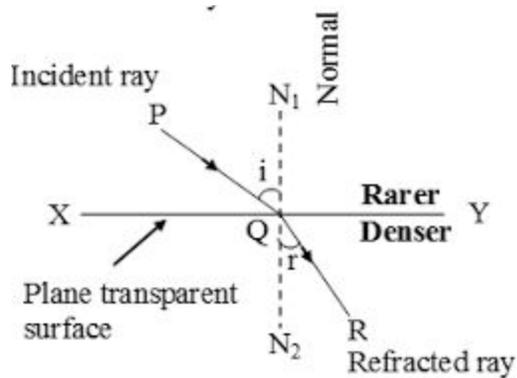
Sub:- Physics

chapter:- Light

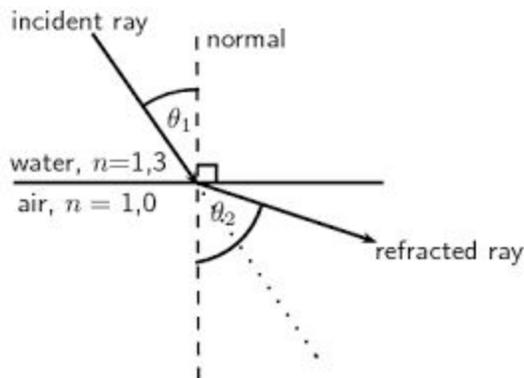
- Refraction of light is the phenomenon of change in the path of light in going from one medium to another.

Condition of refraction of Light:-

1. When the ray of light passes from rarer to denser medium then it bent towards the normal.



2. When the ray passes from denser to rarer medium then it bent away from the normal.



3. When the ray of light pass through the normal then it passes straight without any bending

Cause of refraction:- The speed of light in different mediums is different , which causes the refraction of light .

Refractive Index :-

Absolute refractive index(n) of a medium is the ratio of speed of light in vacuum or air(c) to the speed of light in the medium(v) i.e

$$n = \frac{c}{v}$$

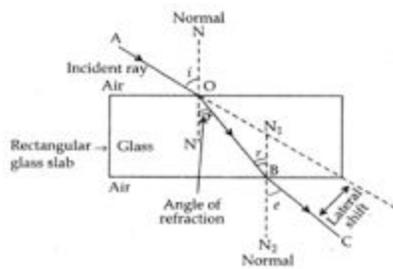
Unit of refractive Index:-It has no unit.

Laws of Refraction of light :-

1. The incident ray , the refracted ray and the normal all lie in same plane at the point of incidence .
 2. The ratio of sine of angle of incidence to the sine of angle of refraction is constant for a given pair of media . It is also called Snell's law.
- Snell's law of refraction,

$$\frac{\sin i}{\sin r} = \frac{n_2}{n_1} = {}_1n_2$$

Refraction of light through glass rectangular glass slab :-



(b) Refractive index of glass from air $a^ng = \frac{3}{2}$

Refractive index of air from glass $g^na = \frac{1}{a^ng} \Rightarrow \frac{1}{3/2} = \frac{2}{3}$

Lateral displacement :- The perpendicular distance between forward produced incident ray and emergent ray is called lateral displacement.

- No refraction occurs, when
 - (i) light is incident normally on a boundary,
 - (ii) refractive indices of the two media in contact are equal.

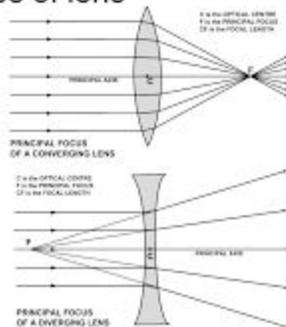
LENS:- A transparent material bound by two surfaces, of which one or both surfaces are spherical.

Two types of lens :-

1. Concave lens or diverging lens :- the lens whose edges are thick and central portion is thin is called a concave lens .
2. Convex lens or converging lens :- The lens whose edges are thin but central portion is thick , is called convex lens .

Types of lens

- Lenses are classified by their effect on parallel light rays
- Lenses either cause the rays to spread apart (diverging) or come together (converging)



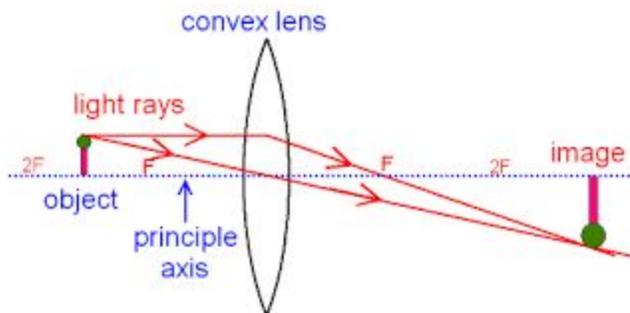
Rules of image formation in lens :-

Light ray from object is	Ray diagram	How it appears after refraction
1 parallel to the principal axis		After refraction from a convex lens, passes through the principal focus on the other side of the lens
2 Passing through a principal focus		After refraction from a convex lens, will emerge parallel to the principal axis
3 Passing through the optical centre of a lens		After refraction from a convex lens will emerge without any deviation

Formation of image in convex lens :-

- When object is placed
- Beyond 2F, 2. At 2F, 3. between F & 2F, 4. At F, 5. Between F & O, 6. At infinity
2. Also write the characteristics of image .

EXAMPLE :-



- New Cartesian Sign Convention for spherical lenses:
 - All distances are measured from optical centre C of the lens.
 - The distances measured in the direction of incidence of light are taken as positive and vice-versa.
 - All heights above the principal axis of the lens are taken as positive and vice versa.
- The linear magnification produced by a lens is

$$m = \frac{h'}{h} = \frac{v}{u}$$

Lens formula:-

$$\frac{1}{v} - \frac{1}{u} = \frac{1}{f}$$

Power of lens:- The reciprocal of focal of a lens in meter, is called power of lens..

The degree of divergence or convergence of ray of light by a lens is expressed in terms of the power of lens. Degree of convergence and divergence depends upon the focal length of a lens. The power of a lens is denoted by 'P'.

The power of lens =1/focal length (meter)

OR,

P=100/Focal length in cm.

SI unit of Power

The SI Unit of Power is Diopter, denoted by D

Definition of 1 Dioptre :- 1 Diopter is the power of a lens whose focal length is 1 m

. • Power of the combination of lense, $P = p_1 + p_2 + p_3 \dots$

Assignment

1. An object is placed to the left of a 25 cm focal length convex lens so that its image is the same size as the object. Determine the object and image locations.
2. A lens is needed to create an inverted image twice as large as the object when the object is 5.00 cm in front of the lens. What focal length lens is needed?

3. If you have a convex lens whose focal length is 10.0 cm, where would you place an object in order to produce an image that is virtual twice in size ?

4. Describe how a convex lens could be used to make a magnifying lens.

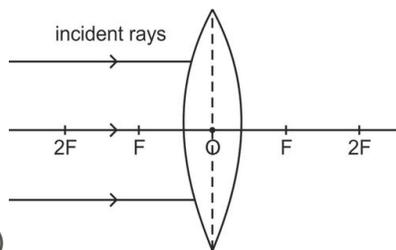
5. A Convex lens forms a real and inverted image of an object at a distance of 25 cm from it. Where is the object placed in front of the convex lens if the size of the image is equal to the size of the object? Also find the power of the lens.

6. The magnification produced by a spherical lens is +0.6. What is the nature of image and the lens?

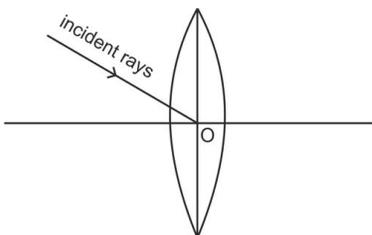
7. A 1 cm tall object is placed perpendicular to the principal axis of a converging lens focal length 10 cm. The distance of the object from the lens is 15 cm. Find the nature; Position and size of the image.

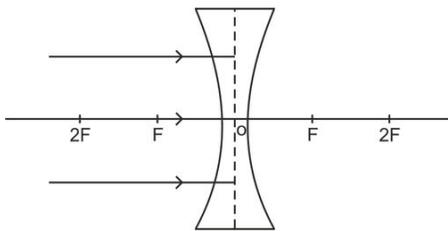
8. Complete th1. Complete the following ray diagrams.

(a)



(c)





9, What is the speed of light in a diamond?

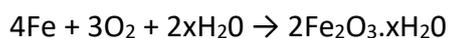
10. . The index of refraction of water is 1.36. What is the speed of light in water?. The index of refraction of water is 1.36. What is the speed of light in water?. The index of refraction of water is 1.36. What is the speed of light in water?

Self-Study Assignment (Session 2020-21)

Chemical Reactions and Equations continued: -

Effects of Oxidation Reactions in everyday life: -

- 1) **Corrosion:** - Slow conversion of metals into their undesirable compounds (sulphides, oxides, carbonates, etc) by reaction with atmospheric oxygen, moisture, etc is called corrosion. *Corrosion of iron is called rusting.*



Corrosion weakens the iron and steel objects and structures such as railings, car bodies, bridges, ships, etc

A lot of money is spent to prevent the corrosion of iron and steel objects.

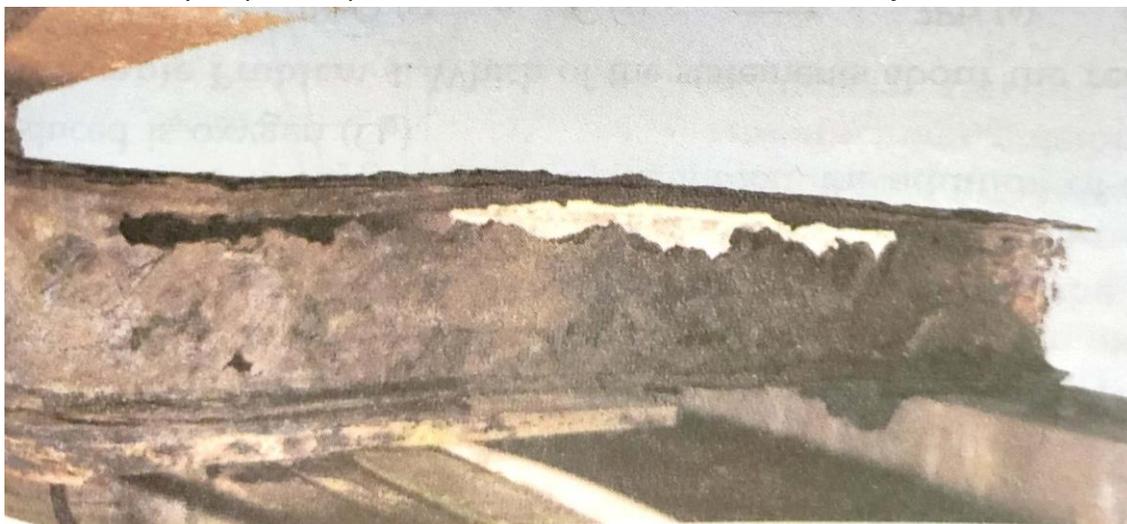


Figure 1 Corrosion of Iron (Rusting)

- 2) **Rancidity:** - The condition produced by aerial oxidation of fats and oils in foods marked by unpleasant smell and taste is called rancidity.

Rancidity can be prevented by the following ways: -



Figure 2 Oxidation of Potato Chips

- I. By adding antioxidants
- II. Vacuum packing
- III. Replacing air by nitrogen (which is an unreactive gas)
- IV. Refrigeration of the food stuff

Questions: -

- 1) Explain why food products containing fats and oils (like potato chips) are packed in nitrogen.
- 2)
 - a) Explain the term 'corrosion' with a suitable example. Write a chemical equation to show the process of corrosion of iron.
 - b) What special name is given to the corrosion of iron?
 - c) Name any three objects (or structures) which are gradually damaged by the corrosion of iron and steel.
- 3)
 - a) Explain the term 'rancidity'. What damage is caused by rancidity?
 - b) What type of chemical reaction is responsible for causing rancidity?

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Self-Study Assignment (Session 2020-21)

Chapter 2 - Acids, Bases and Salts

Definition: - On the basis of their chemical properties, all the compounds can be classified into three groups: -

- 1) Acids
- 2) Bases
- 3) Salts

➤ **Acids: -**

Definition – A chemical compound sour to taste and capable of donating proton (H^+) in aqueous solution.

Acids may be classified into two groups on the ***basis of strength of H^+ ion concentration.***

- a) **Strong Acids** – The acids which dissociate into large number H^+ ions in aqueous solution. Example – H_2SO_4 , HCl , HNO_3 , etc
- b) **Weak Acids** - The acids which dissociate into less number of H^+ ions in aqueous solution. Example – $HCOOH$, CH_3COOH , etc

Acids may be classified into two groups on the ***basis of their origin.***

- a) **Organic Acids** – Acids produced by plants and animals. Example – $HCOOH$, CH_3COOH , Malic Acid ($C_4H_6O_5$), Lemon (citric acid)



Figure 1 Lemon (Citric Acid)

b) **Mineral Acids** – Acids produced from minerals present in the earth's crust.



Example – HCl, H₂SO₄, etc

Figure 2 HCl

Physical Properties of Acids: -

- Sour to taste
- Soluble in water
- All dilute acids conduct electricity
- Changes blue Litmus to red

Chemical Properties of Acids: -

1) Acids react with metals to form hydrogen gas.



(Zinc metal)

(Zinc Sulphate)

2) Acids react with metal carbonates and bicarbonates to form CO₂ gas.

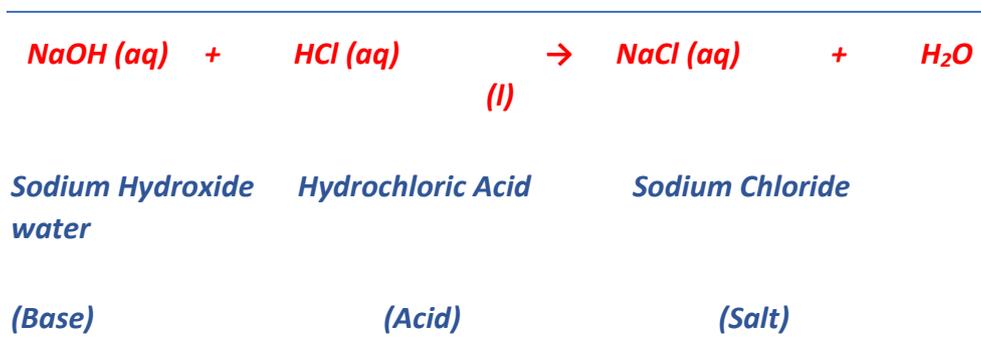


(Sodium Carbonate) (Hydrochloric acid) (Sodium Chloride)
(water)

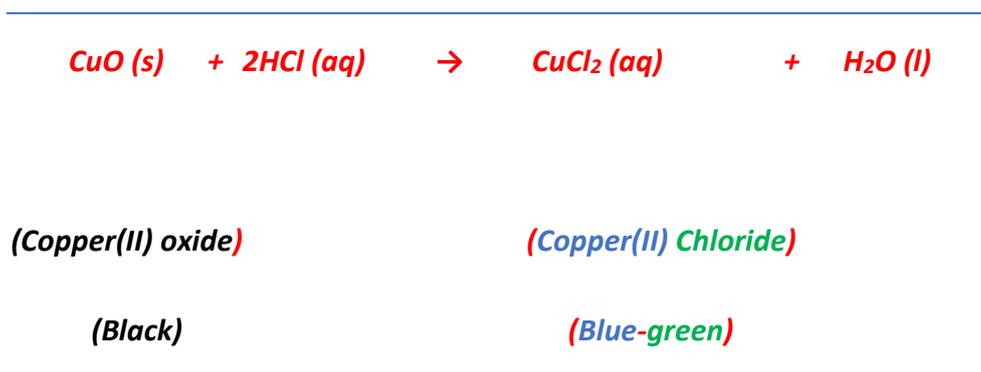


(Sodium bicarbonate)

3) Acids react with bases to form salt and water – This reaction is known as neutralisation reaction.



4) Acids react with metal oxides to form salt and water.



5) Acids are corrosive in nature: - Mineral acids cause severe burns on the skin and eat up materials like cloth, metal, etc

Q U E S T I O N S

1. Why should curd and sour substances not be kept in brass and copper vessels?
2. Which gas is usually liberated when an acid reacts with a metal? Illustrate with an example. How will you test for the presence of this gas?
3. Metal compound A reacts with dilute hydrochloric acid to produce effervescence. The gas evolved extinguishes a burning candle. Write a balanced chemical equation for the reaction if one of the compounds formed is calcium chloride.
- 4) Name any three naturally occurring acids and their sources.

➤ **Bases:** - Definition – A chemical compound bitter to taste and gives OH^- ions in their aqueous solutions.

Bases can be classified into two groups *based on strength of OH^- ion*: -

1. Strong Bases – completely ionises in water and thus produces a large number of OH^- ions. Example – NaOH , KOH
2. Weak Bases – Partially ionised in water and thus produces a small number of OH^- ions. Example – $\text{Ca}(\text{OH})_2$, $\text{Mg}(\text{OH})_2$.

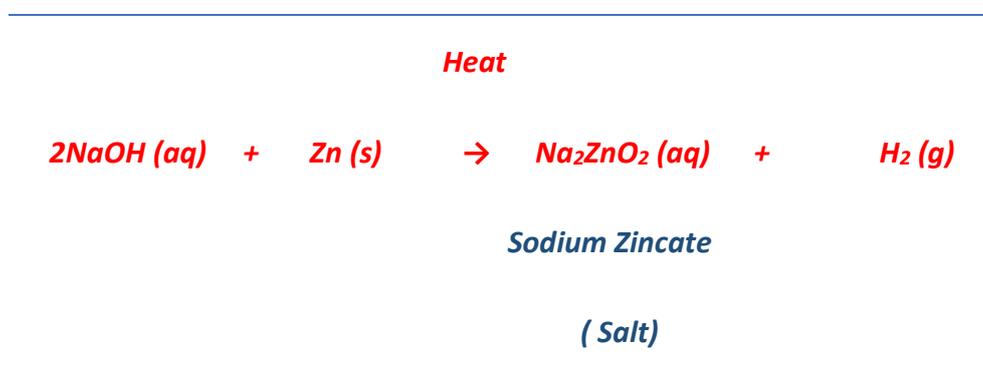
Note – Those bases which dissolve in water without any chemical reaction are called alkalis. Example – NaOH , KOH , $\text{Ca}(\text{OH})_2$

Physical Properties of Bases: -

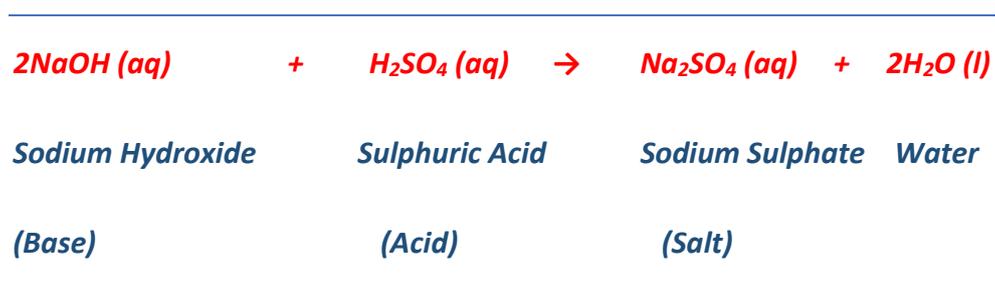
- Taste bitter
- Feel slippery to skin
- Bases conduct electricity in solutions
- Some bases are water soluble (alkalis)
- Changes red Litmus to blue

Chemical Properties of Bases: -

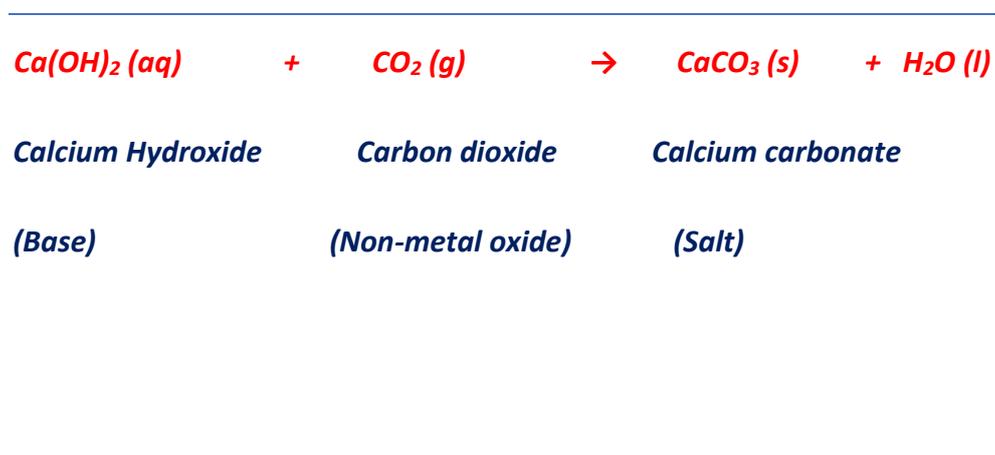
1) Bases react with metals to form hydrogen gas.



2) Bases react with acids to form salt and water.



3) Bases react with non-metal oxides to form salt and water.



Activity Based Questions :-

- 1) Design an activity to prove that acid/base solutions conduct electricity in their aqueous solution
- 2) With the help of an activity, infer about the acidic characteristics of **a)** dry HCl gas and **b)** HCl solution

How strong are acid or base solutions?

In 1909, Sorenson devised a scale (known as pH scale) on which the strength of acid solutions as well as basic solutions could be represented by making use of the H^+ ion concentration in them. The pH of a solution is inversely proportional to the concentration of hydrogen ions in it.

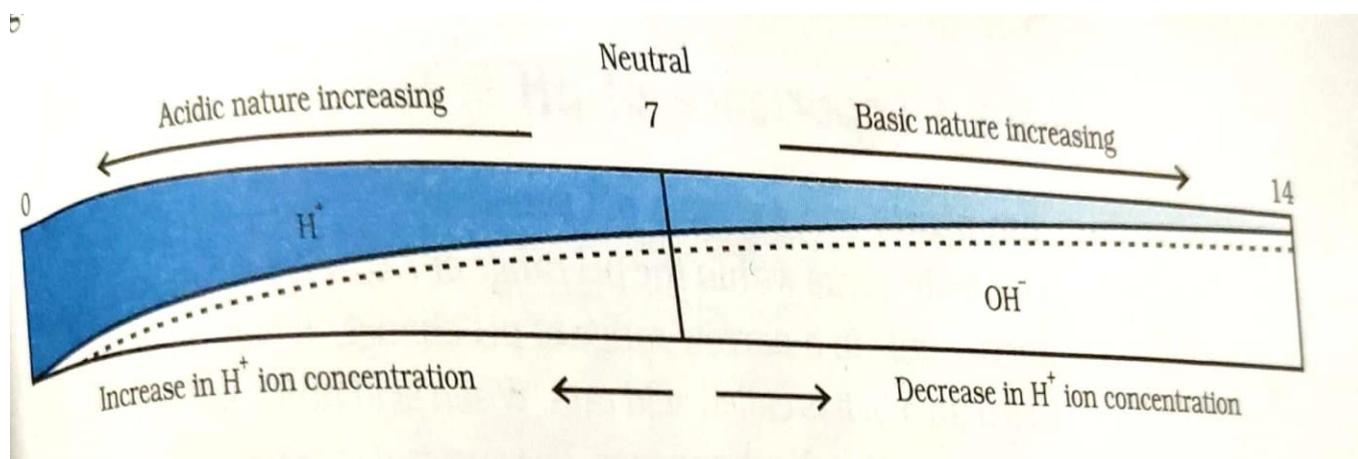


Figure 3 Variation of pH with the change in concentration of H^+ (aq) and OH^- (aq) ions

Importance of pH in everyday life: -

- 1) **pH in our digestive system** – The excess acid in the stomach causes indigestion and irritation which can be treated by taking mild bases called 'antacids' to neutralise it.
- 2) **pH change as the cause of tooth decay** – To prevent tooth decay by acid we should clean our teeth by using toothpaste which is basic in nature.
- 3) **Plants and animals are sensitive to pH changes** – If the soil is too acidic then chemicals like CaO / $Ca(OH)_2$ may be added to the soil to adjust its pH and make it suitable for growing plants.

- 4) **Self defence by animals and plants through chemical warfare** – If accidentally our skin happens to touch nettle plant, it injects methanoic acid causing pain which may be treated by rubbing baking soda on the skin.

Q U E S T I O N S

1. You have two solutions, A and B. The pH of solution A is 6 and pH of solution B is 8. Which solution has more hydrogen ion concentration? Which of this is acidic and which one is basic?
2. What effect does the concentration of $H^+(aq)$ ions have on the nature of the solution?
3. Do basic solutions also have $H^+(aq)$ ions? If yes, then why are these basic?
4. Under what soil condition do you think a farmer would treat the soil of his fields with quick lime (calcium oxide) or slaked lime (calcium hydroxide) or chalk (calcium carbonate)?

Indicators: -

- a) **Natural** – Example – Litmus (Extracted from Lichen, purple in colour)
- b) **Synthetic** – Example – Phenolphthalein, Methyl orange
- c) **Olfactory** – Acids and bases are detected by the change in smell. Example – Onion extract, vanilla extract.

Indicators	Colour in Acid	Colour in Alkali
<i>Litmus</i>	Red	Blue
<i>Methyl Orange</i>	Red	Yellow
<i>Phenolphthalein</i>	Colourless	Pink



Figure 4 The bottle (with dropper) on the left side in this picture contains phenolphthalein indicator. Phenolphthalein indicator is colourless in acidic solution but turns pink in basic solution. The bottle on the right side in the above picture contains methyl orange indicator. Methyl Orange indicator is red in acid solution but yellow in basic solution

**** Can you name two natural indicators other than Litmus?**

Universal Indicator – It is a mixture of many different indicators which gives different colours at different pH values of the entire pH scale.

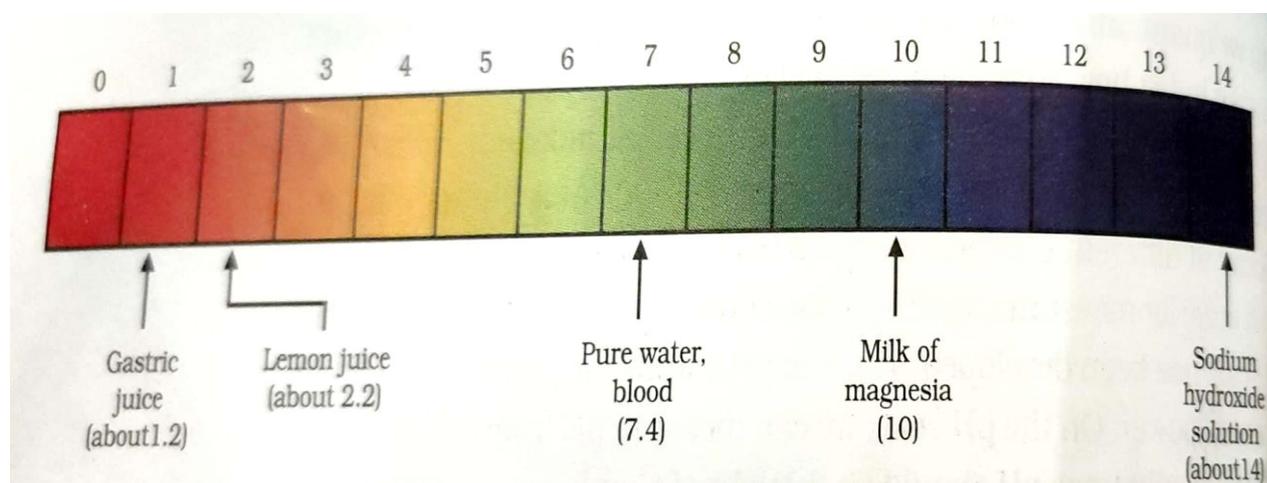


Figure 5 pH of some common substances shown on a pH paper (colours are only a rough guide)

Q U E S T I O N

1. You have been provided with three test tubes. One of them contains distilled water and the other two contain an acidic solution and a basic solution, respectively. If you are given only red litmus paper, how will you identify the contents of each test tube?

➤ **Salts:** - The chemical compounds formed by the reaction between acids and bases are called salts.

Salts may be classified into three groups on the ***basis of their strength***

- I. Acidic Salt – Strong Acid + Weak Base
- II. Basic Salt – Strong Base + Weak Acid
- III. Neutral Salt – Strong Acid + Strong Base

More About Salts: -

Important Compounds	Chemical name	Chemical formula	Preparation	Uses
Common Salt	Sodium chloride	NaCl	By combination reaction of sodium hydroxide and hydrochloric acid $\text{NaOH}(aq) + \text{HCl}(aq) \rightarrow \text{NaCl}(aq) + \text{H}_2\text{O}(l)$	(i) As raw material for making many chemicals (ii) In cooking food
Caustic Soda	Sodium hydroxide	NaOH	By passing electricity through concentrated sodium chloride (brine) solution $2\text{NaCl}(aq) + 2\text{H}_2\text{O}(l) \rightarrow 2\text{NaOH}(aq) + \text{Cl}_2(g) + \text{H}_2(g)$	(i) In detergents and soaps (ii) In paper making (iii) In bleach manufacture (iv) In bauxite purification to extract aluminium
Washing Soda	Sodium carbonate decahydrate	$\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$	By recrystallisation of sodium carbonate in water $\text{Na}_2\text{CO}_3 + 10\text{H}_2\text{O} \rightarrow \text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$	(i) Softening hard water (ii) In washing clothes (iii) In paper, paint and textile industry (iv) Manufacturing glass, borax and caustic soda extract
Baking Soda	Sodium hydrogen carbonate	NaHCO_3	On reacting cold concentrated sodium chloride (brine) solution with ammonia and carbon dioxide $\text{NaCl} + \text{NH}_3 + \text{CO}_2 + \text{H}_2\text{O} \rightarrow \text{NaHCO}_3 + \text{NH}_4\text{Cl}$	(i) Preparing baking powder (ii) Manufacture of soda water (iii) In fire extinguishers (iv) As an antacid in medicine
Bleaching Powder	Calcium oxychloride	CaOCl_2	By passing chlorine gas over dry slaked lime $\text{Ca}(\text{OH})_2 + \text{Cl}_2 \rightarrow \text{CaOCl}_2 + \text{H}_2\text{O}$	(i) For bleaching cotton textile (ii) For disinfecting drinking water (iii) As an oxidising agent in chemical industry (iv) Manufacturing chloroform
Plaster of Paris	Calcium sulphate hemihydrate	$\text{CaSO}_4 \cdot \frac{1}{2}\text{H}_2\text{O}$	By heating gypsum at 373K $\text{CaSO}_4 \cdot 2\text{H}_2\text{O} \xrightarrow{373\text{K}} \text{CaSO}_4 \cdot \frac{1}{2}\text{H}_2\text{O} + 1\frac{1}{2}\text{H}_2\text{O}$ <small>Gypsum</small>	(i) For making statues, models, toys, etc (ii) For making fireproof materials (iii) For setting fractured bones

Q U E S T I O N S

1. What is the common name of the compound CaOCl_2 ?
2. Name the substance which on treatment with chlorine yields bleaching powder.
3. Name the sodium compound which is used for softening hard water.
4. What will happen if a solution of sodium hydrocarbonate is heated? Give the equation of the reaction involved.
5. Write an equation to show the reaction between Plaster of Paris and water.

Now attempt this: -

Write the formulae, name of parent acid and parent base of the following salts: - potassium chloride, sodium sulphate, ammonium chloride, copper sulphate, zinc chloride, sodium carbonate.

One is done for your help, follow the format: -

Name of Salt	Formulae	Parent Acid	Parent Base	Reaction
Potassium Chloride	KCl	HCl	KOH	$\text{HCl} + \text{KOH} \rightarrow \text{KCl} + \text{H}_2\text{O}$

Assertion-Reason type Question: -

The following questions consist of two statements – Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:

- (a) Both A and R are true and R is the correct explanation of A.
- (b) Both A and R are true but R is not the correct explanation of A.
- (c) A is true but R is false.
- (d) A is false but R is true.
1. Assertion(A) : The aqueous solutions of glucose and alcohol do not show acidic character.
Reason (R) : Aqueous solutions of glucose and alcohol do not give H^+ ions.
2. Assertion(A) : HCl gas does not change the colour of dry blue litmus paper.
Reason (R) : HCl gas dissolves in the water present in wet litmus paper to form H^+ ions.
3. Assertion(A) : Weak acids have low electrical conductivity.
Reason (R) : Strong acids and weak acids have equal concentration of hydrogen ions in their solutions.
4. Assertion(A) : Pure water is neither acidic nor basic.
Reason (R) : The pH of a solution is inversely proportional to the concentration of hydrogen ions in it.
5. Assertion(A) : During electrolysis of concentrated aqueous solution of sodium chloride, hydrogen is produced at anode and chlorine gas is produced at cathode.
Reason (R) : Ions get attracted to oppositely charged electrodes.

Do the questions of exercises from NCERT page number 34 and 35 in your assignment copy.

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GURU GOVIND SINGH PUBLIC SCHOOL (Sector – 5, B.S. City)

BIOLOGY

CLASS – X

Self-Study Assignment 2 (Session 2020-21)

Life Processes continued: -

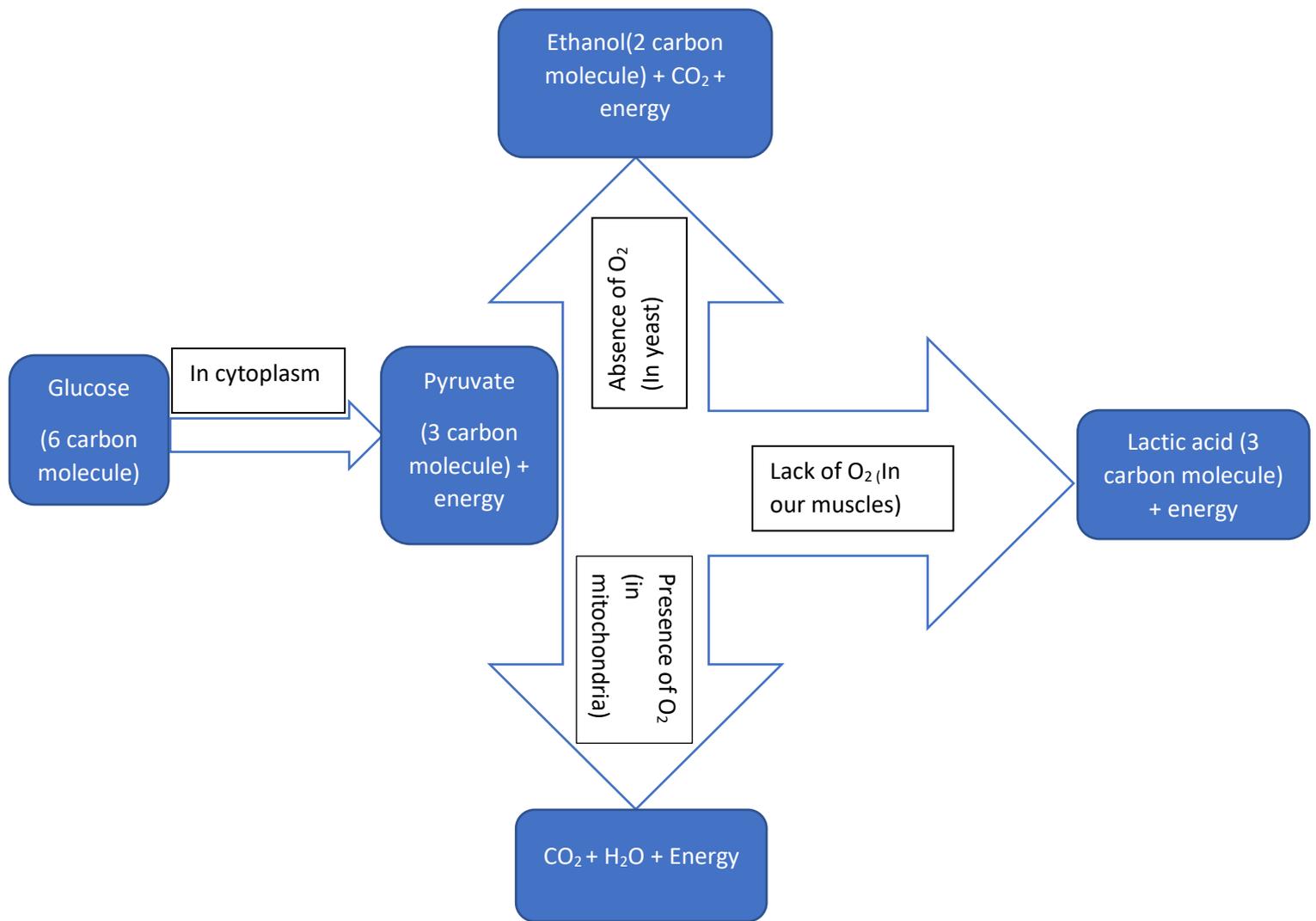
Respiration: - Definition – The process of respiration involves taking in oxygen (from air) into the cells, using it for releasing energy by burning food, and then eliminating the waste products (carbon dioxide) and water) from the body.

Respiration = Breathing + cellular respiration
(physical process) (chemical process)

The process of breathing involves the lungs of the organism (obtain oxygen) from the air and release carbon dioxide in air) where as the process of respiration involves mitochondria in the cells (for the oxidation of simple food, glucose to release energy)

Types of respiration: -

- a) Aerobic - Respiration in presence of sufficient oxygen.**
- b) Anaerobic – Respiration in absence or lack of oxygen.**



Breakdown of glucose by various pathways

Respiration in aquatic organisms: - Since the amount of dissolved oxygen is low compared to the amount of oxygen in the air, the rate of breathing in aquatic organisms is much faster than in terrestrial organisms

Respiration in terrestrial organisms: - (Example – Human)

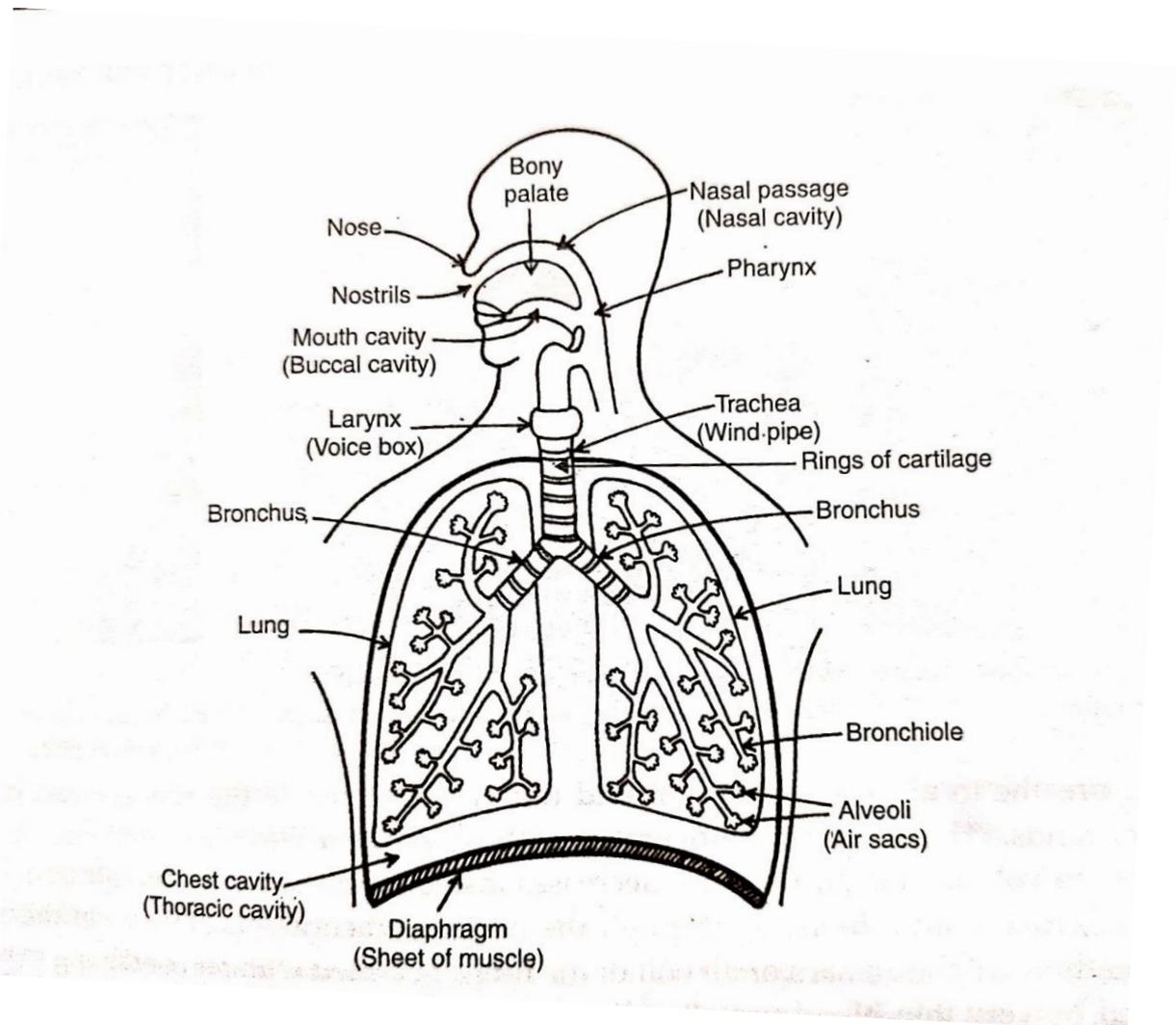


Figure 1 Human Respiratory System

Steps:

- 1) Air enters the nostrils and is filtered by fine hair lining the passage.
- 2) On breathing in, ribs lift up, diaphragm flattens, chest cavity enlarges and air moves in.
- 3) Air enters the lungs through wind-pipe and bronchii.
- 4) In lungs, air enters alveoli where exchange of gases takes place.
- 5) Oxygen in alveolar air diffuses into capillaries lining the alveoli and carbon dioxide from the blood diffuses into alveoli.
- 6) While breathing out, ribs relax, diaphragm contracts, chest cavity reduces and air moves out.

Now answer the following: -

Q U E S T I O N S

1. What advantage over an aquatic organism does a terrestrial organism have with regard to obtaining oxygen for respiration?
2. What are the different ways in which glucose is oxidised to provide energy in various organisms?
3. How is oxygen and carbon dioxide transported in human beings?
4. How are the lungs designed in human beings to maximise the area for exchange of gases?

Transportation: - (In Human Beings)

A. Components of Circulatory System: -

a. Blood:

- Plasma (fluid medium and transports food, CO₂, nitrogenous waste)
- Blood cells:
 - Erythrocytes/Red Blood Cells (RBCs) – Carry oxygen
 - Leucocytes or White Blood Cells (WBCs) – Provide immunity
 - Blood Platelets - participates in blood clotting

b. Blood Vessels:

- Arteries – carry oxygenated blood from the heart
- Veins – carry deoxygenated blood towards the heart
- Capillaries – one-cell thick vessel that carry blood from arterioles to small veins

c. Heart:

- Central muscular pumping organ, which is as big as our fist.
- It has four chambers – 2 Atria and 2 Ventricles
- Atria are thin walled and ventricles are thick walled.

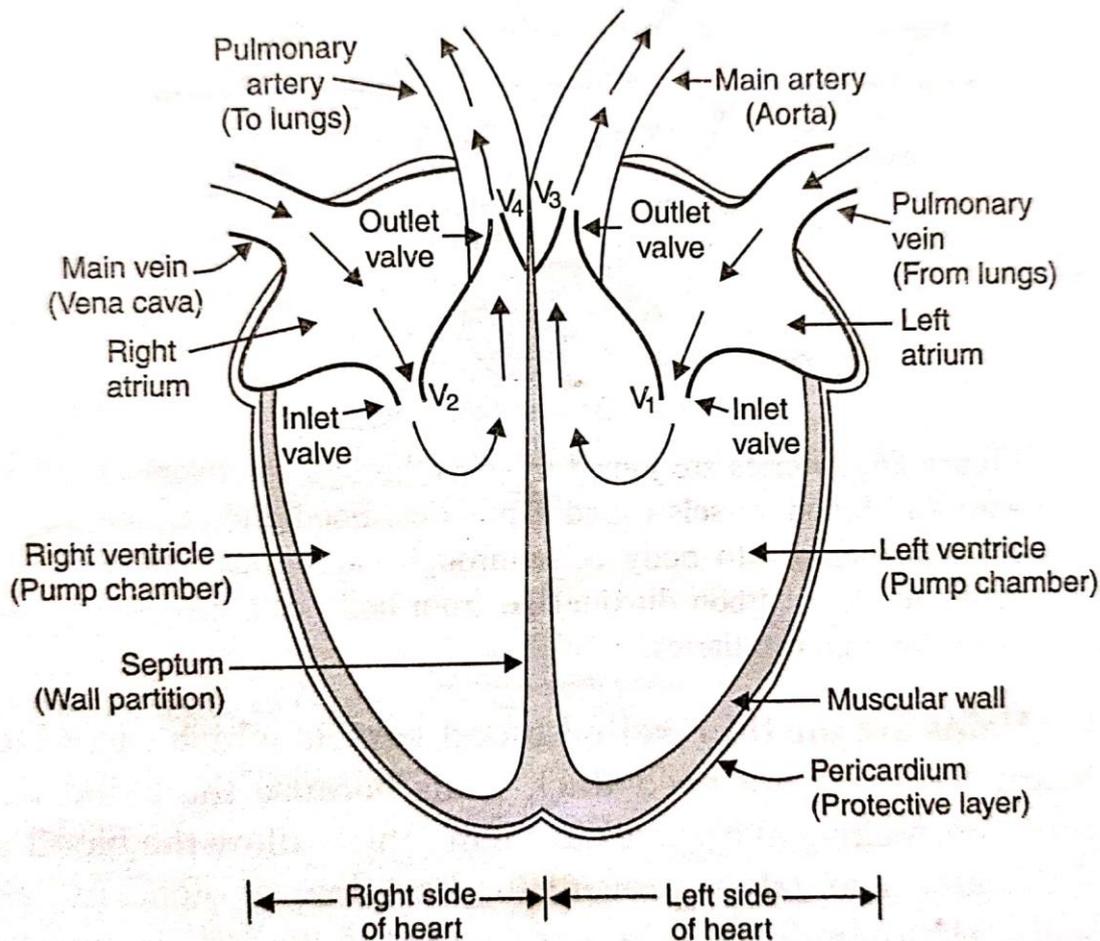


Figure 2 Diagram to show the Inside structure of human heart

B. Mechanism of Blood Circulation: -

1. Oxygenated blood from lungs enters the left atrium through pulmonary vein.
2. Left atrium relaxes to collect the blood.
3. Left atrium contracts and bicuspid valve opens which makes oxygenated blood to enter the left ventricle.
4. Left ventricle contracts and oxygenated blood is pumped out to different body parts through main artery (aorta)
5. Now, deoxygenated blood formed in the body cells (by cellular respiration) enters the right atrium through venacava.
6. Right atrium contracts, tricuspid valve opens and deoxygenated blood enters right ventricle.
7. Right ventricle contracts and pumps the blood towards lungs through pulmonary artery.

In this way, blood flows twice through human heart, once from heart to lungs and back to heart. This pathway is known as **pulmonary pathway**. Another pathway is **systemic pathway** in which blood flows from heart to body parts and vice versa.

For this reason, this circulation is known as **double circulation**.

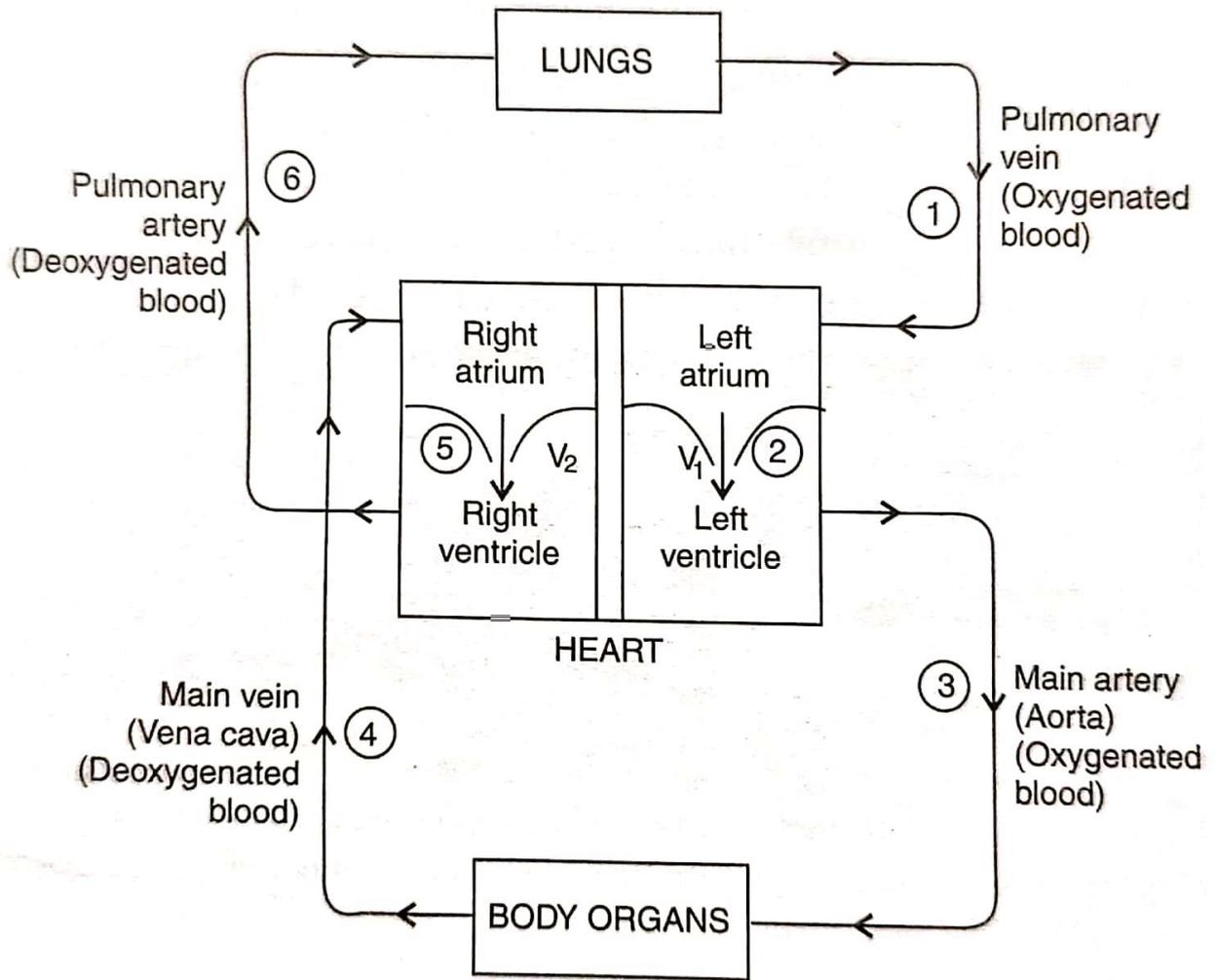


Figure 3 Schematic diagram to show blood circulation in human body

C. Lymphatic System: -

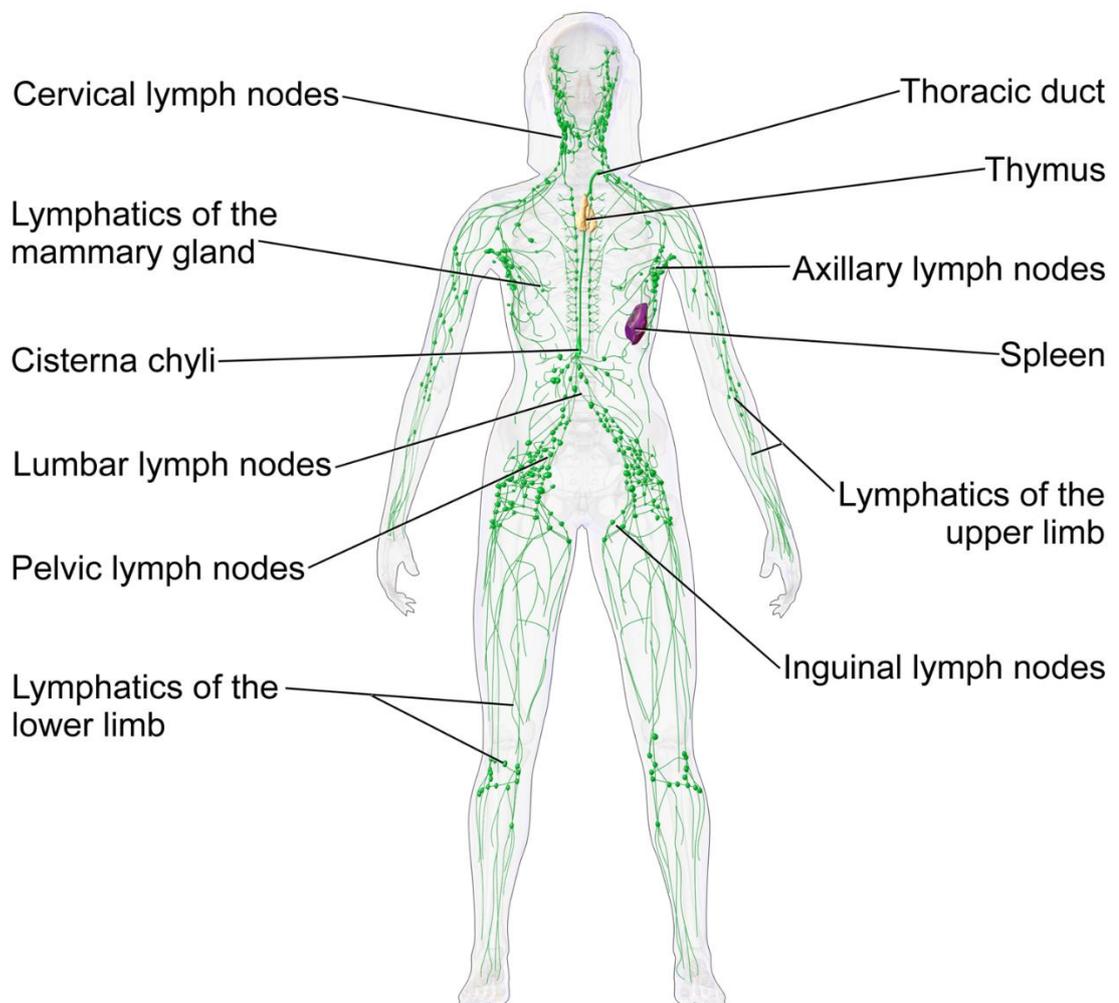


Figure 4 The Lymphatic System of Human body

Lymph is another medium of circulation in the human body which contains a special type of white blood cells called lymphocytes which helps in fight infection and diseases.

Transportation in Plants: -

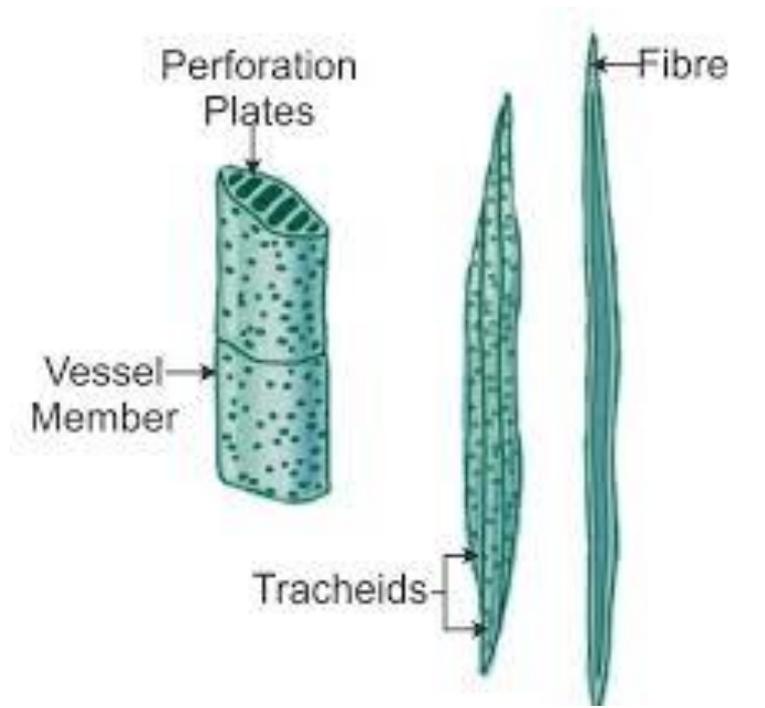


Figure 5 The structure of Xylem vessels and tracheids

A. Transport of Water: -

- In Xylem tissue, vessels tracheid of the roots, stems and leaves are interconnected to form a continuous system of water-conducting channels.
- Ions in soil are actively transported to roots, creating an ionic difference between soil and roots.
- Water from soil enters the roots and into root Xylem creating a water column.
- Now water from aerial surface of plants (leaves) evaporates during daytime (called transpiration) which creates a suction pump that pulls water column from roots Xylem to other parts of the plant body. This process is known as **Ascent of Sap.**

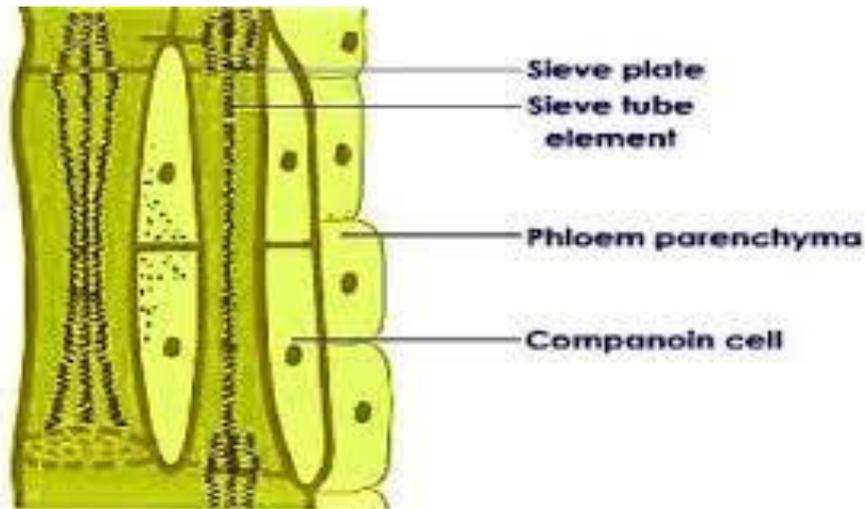


Figure 6 The structure of Phloem made of sieve tubes and companion cells

B. Transport of food and other substances (Translocation): -

- a. Food (sugar) stored in leaves is loaded into sieve tubes of Phloem tissue with the help of adjacent companion cells by using ATP.
- b. Osmotic pressure in the tissue increases.
- c. Water moves into the tissue.
- d. Food from the phloem moves into the tissues having less pressure.

Q U E S T I O N S

1. What are the components of the transport system in human beings? What are the functions of these components?
2. Why is it necessary to separate oxygenated and deoxygenated blood in mammals and birds?
3. What are the components of the transport system in highly organised plants?
4. How are water and minerals transported in plants?
5. How is food transported in plants?

Now you may answer the following questions: -

The following questions consist of two statements—Assertion(A) and Reason(R). Answer these questions selecting the appropriate option given below:

- (a) Both A and R are true and R is the correct explanation for A.
- (b) Both A and R are true and R is not the correct explanation for A.
- (c) A is true but R is false.
- (d) A is false but R is true.

(i) **Assertion(A)** : Aerobic respiration requires less energy as compared to anaerobic respiration.

Reason (R) : Mitochondria is the powerhouse of the cell.

(ii) **Assertion(A)** : Human heart is four-chambered.

Reason (R) : Vena cava is the only artery that supplies deoxygenated blood to the heart.

(iii) **Assertion(A)** : Energy is required to carry out different life processes.

Reason (R) : Energy is obtained in the form of ATP in the mitochondria.

Excretion: - Definition – The process of removal of toxic waste from the body of an organism is called excretion.

Excretion in humans: - The major wastes produced by the human body are: carbon dioxide and urea. Our lungs excrete CO_2 and our kidneys excrete urea.

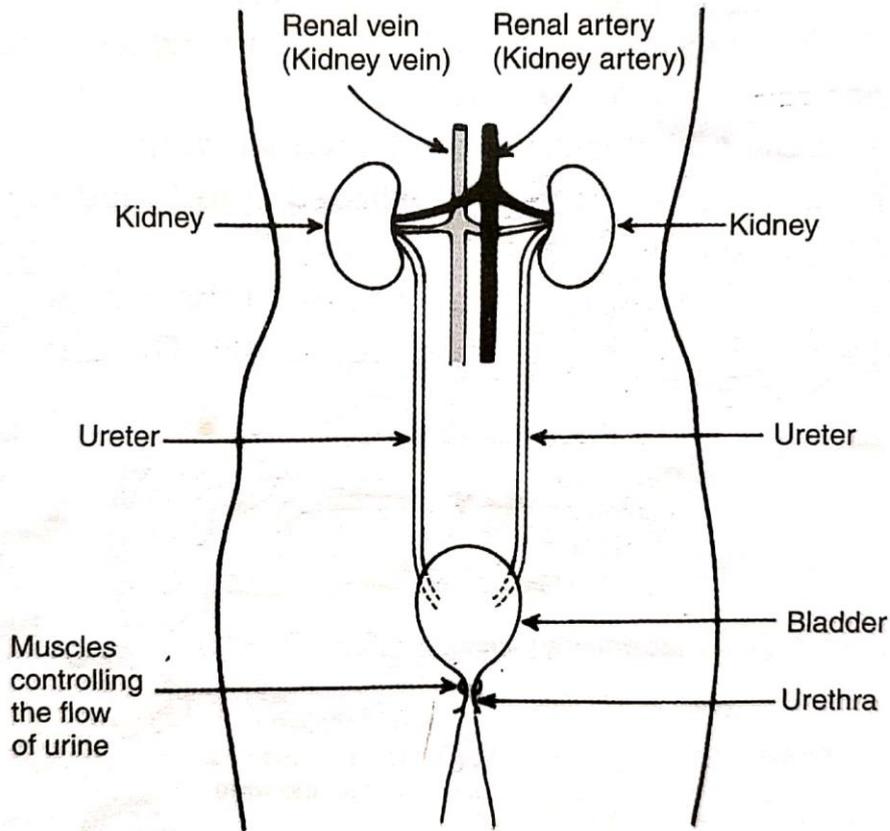


Figure 7 The Human Excretory System

The excretory system of human beings consists of the following organs:

- 2 Kidneys
- 2 Ureters
- 2 Urinary bladders
- Urethra

The function of kidneys is to remove poisonous substance urea, other waste salts and excess water from the blood, and excrete them in the form of a yellowish liquid called urine.

Each kidney is made up of a large number of excretory units called **Nephrons**.

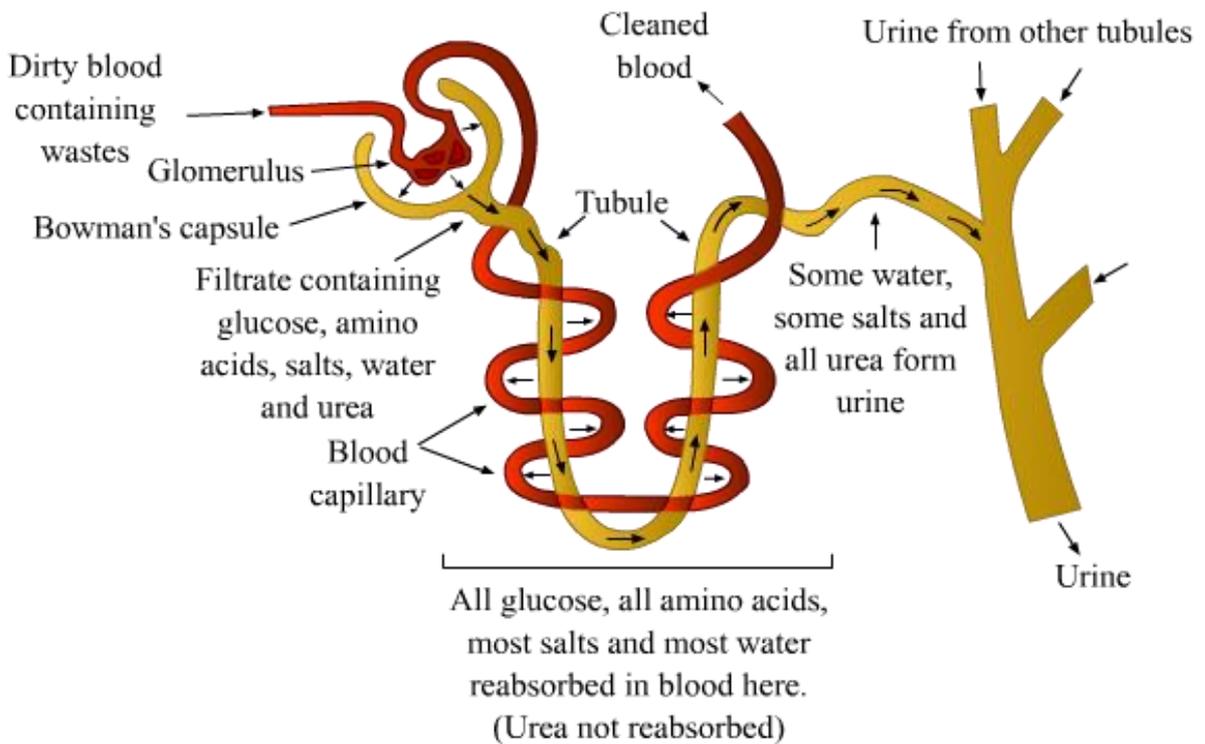


Figure 8 Structure of a Nephron

Mechanism of Ultra Filtration:

- 1) Blood is filtered through capillary cluster in the nephron of the kidney called **glomerulus** which is present in the cup shaped structure called **Bowman's capsule**.
- 2) The filtrate flows along the **tubular part** of the nephron and the substances like glucose, amino acids, salts and excess water are reabsorbed to form urine.
- 3) Urine flows through the ureter into the urinary bladder where it is stored until expulsion through urethra

Excretion in Plants: -

- Oxygen released by stomata.
- Excess water by transpiration.
- Some waste is stored in leaves that fall off.
- Some waste is stored as resins and gums.
- Some waste is released directly into the soil.

Q U E S T I O N S

1. Describe the structure and functioning of nephrons.
2. What are the methods used by plants to get rid of excretory products?
3. How is the amount of urine produced regulated?

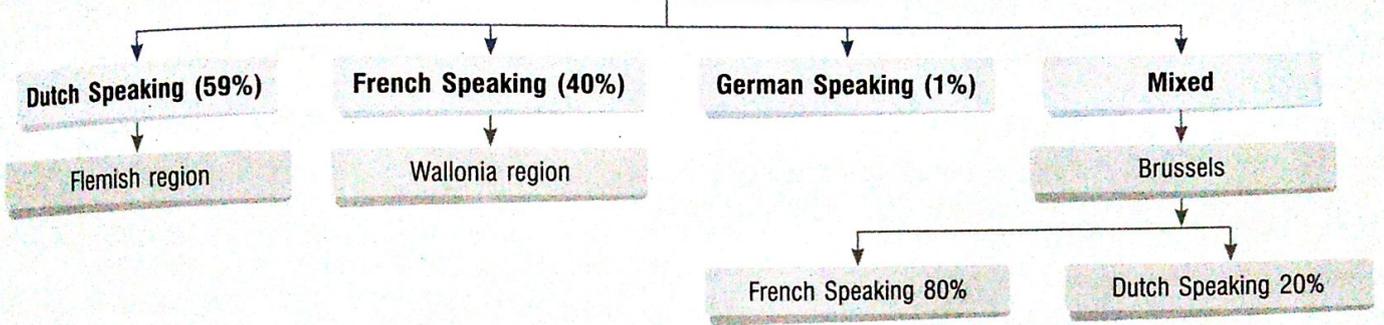
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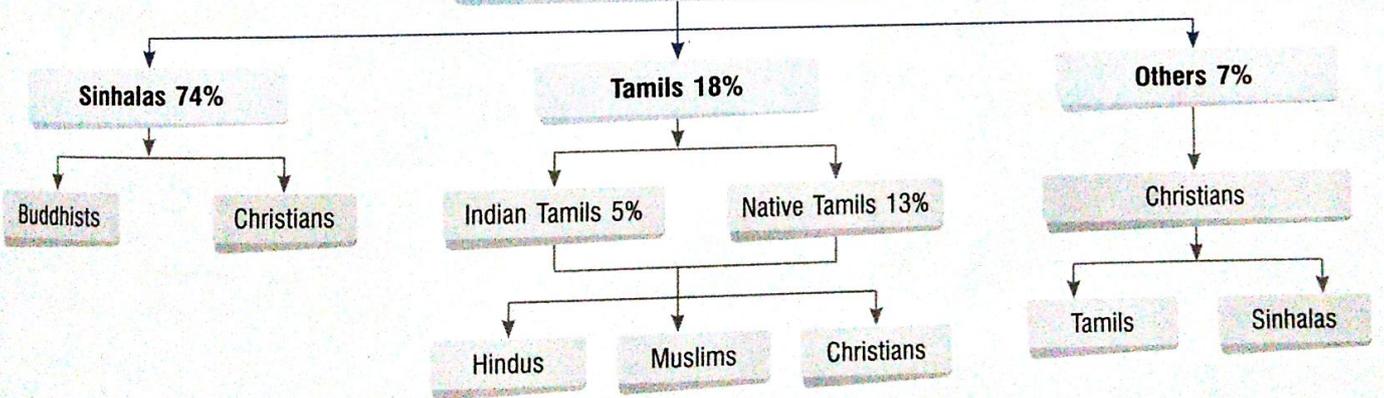
POWER SHARING

CHAPTER AT A GLANCE

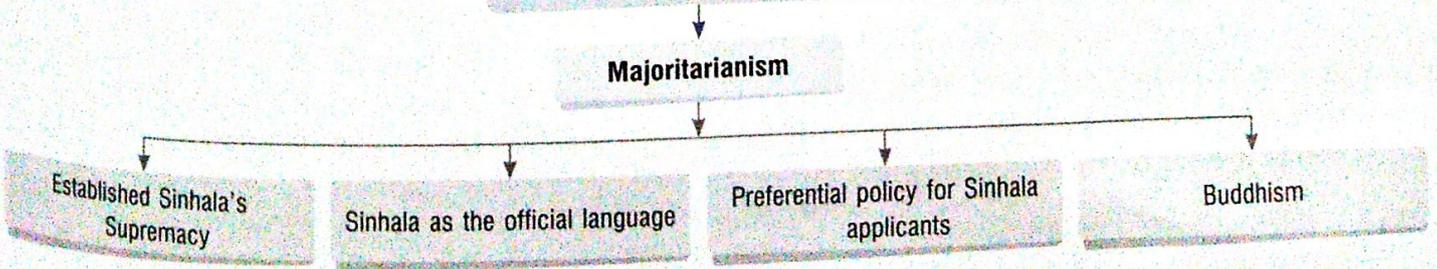
Ethnic Composition of Belgium

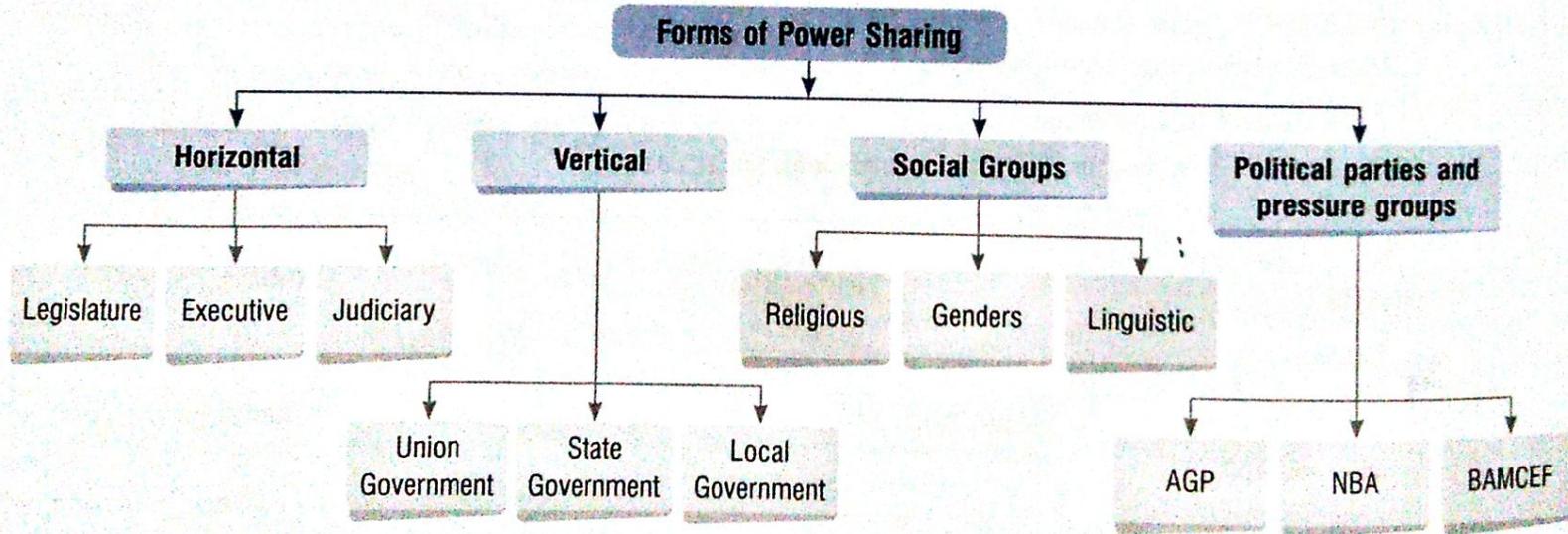
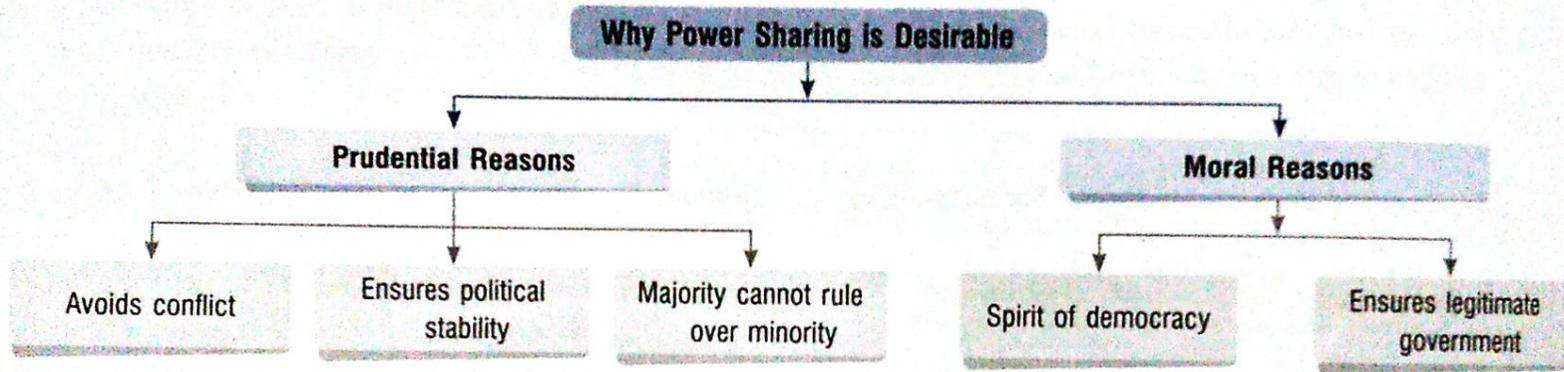
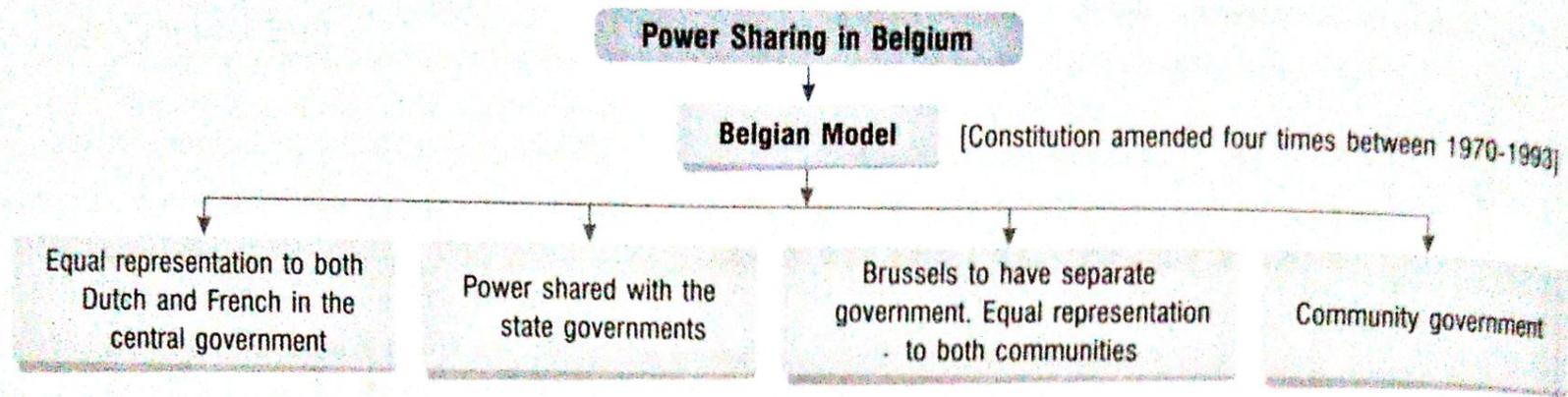


Ethnic Composition of Sri Lanka



Power Sharing in Sri Lanka

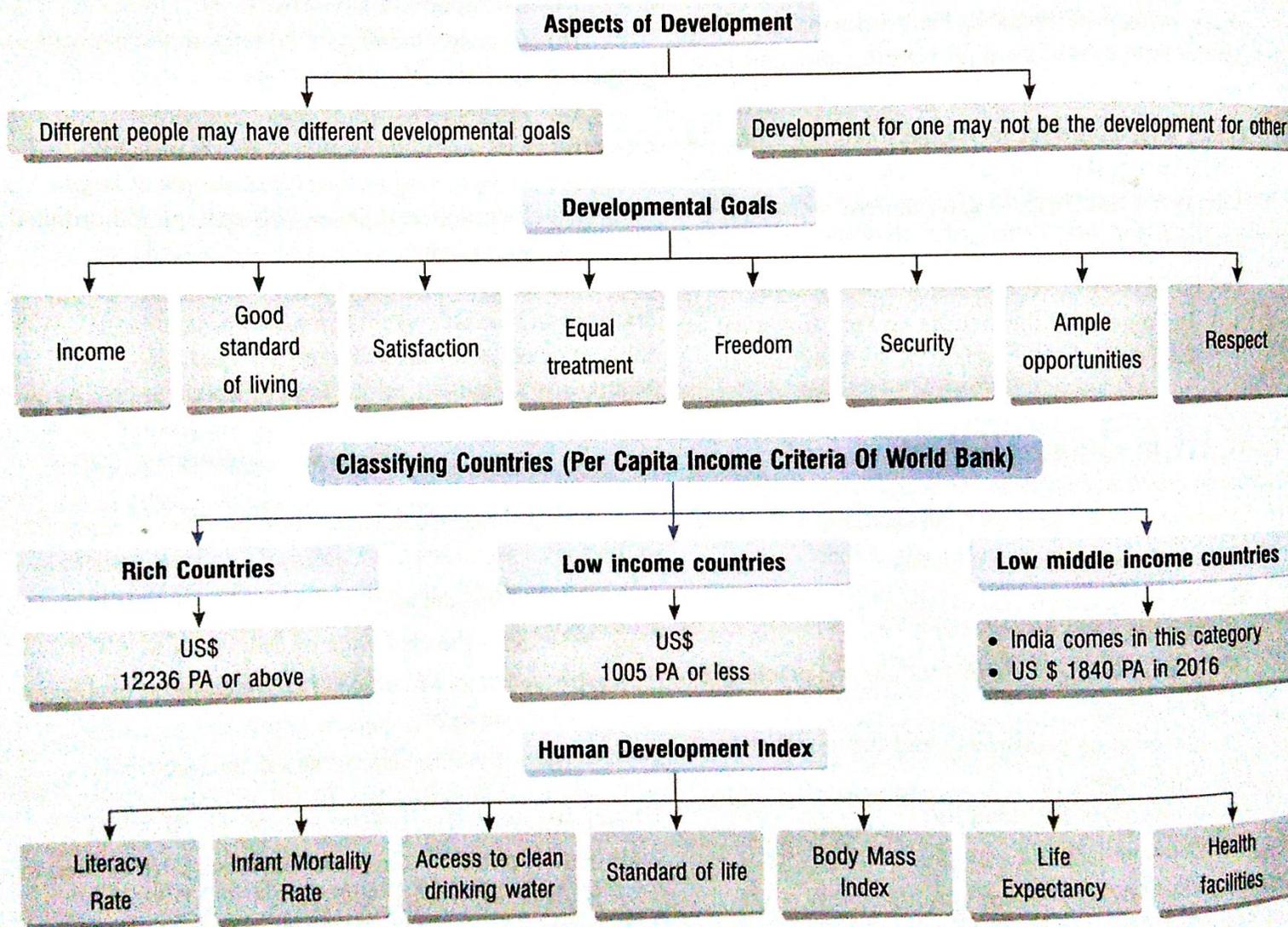




1

DEVELOPMENT

CHAPTER AT A GLANCE



Lesson No. 1

Development

Development Different People, Different Goals.

- Different persons can have different development goals.
- What may be development for one may not be development for the other. It may be destructive for the other.

Income and Other Goals : More income; equal treatment; freedom; Job security; facilities for family; environment (healthy & secure).

Concept of National Development :

- World Development Report 2006, “In 2004 countries with per capita income of Rs. 453000 per annum are called rich or developed countries. Those with per capita income of Rs.37000 or less are called low income countries.
- Human Development Report 2006 published by UNDP, “Development is based on per capita income, educational levels of the people and their health status.

Sustainability : The regular process without harming the productivity of future generation and satisfy the need of present generation.

Sustainable Development : Development without damaging surrounding.

Average Income : Total income of the country divided by its total population. Also known as per capita income.

National Income : Sum of value of final goods produced within the country and income from foreign factors.

Infant Mortality Rate : The number of children that die before the age of one year as a proportion of 1000 live children born in that particular year.

Literacy Rate : The proportion of literate population in the 7 and above, age group.

Net attendance Ratio : the total number of children of age group 6-10 attending school as a percentage of total number of children in the same age group.

Questions :

1. What is the main criterion used by the World Bank in classifying different countries? What are the limitations of this criterion, if any?
2. In what respects is the criterion used by the UNDP for measuring development different from the one used by the world bank.
3. Why is the issue of sustainability important for development?

CIVICS
Lesson No. 1
Power Sharing

Summary

Power Sharing :

- Power sharing is important because it the conflict between different social groups.
- Social conflicts often lead to violence and political instability, power sharing is a good way to ensure the stability of political order.
- A democratic rule involves sharing power with those affected by its exercise, and who have to live with its effects. People have a right to be consulted on how they are to be governed. A legitimate government is one citizens through participation, acquire a stake in the system.
- One basis of principle of democracy is that people are the source of all political power.
- Power is shared among different organs of government such as the legislature, executive and judiciary.
- Power can be shared among governments at different levels a general government for the entire country and governments at the provincial or regional level.

Questions :

1. What do you mean by power sharing?
2. Name all the different organs of government.?
3. What do you mean power sharing in a country?
4. What do you mean by majority?
5. What are different forms of power sharing in modern democracies give an example of each of these.

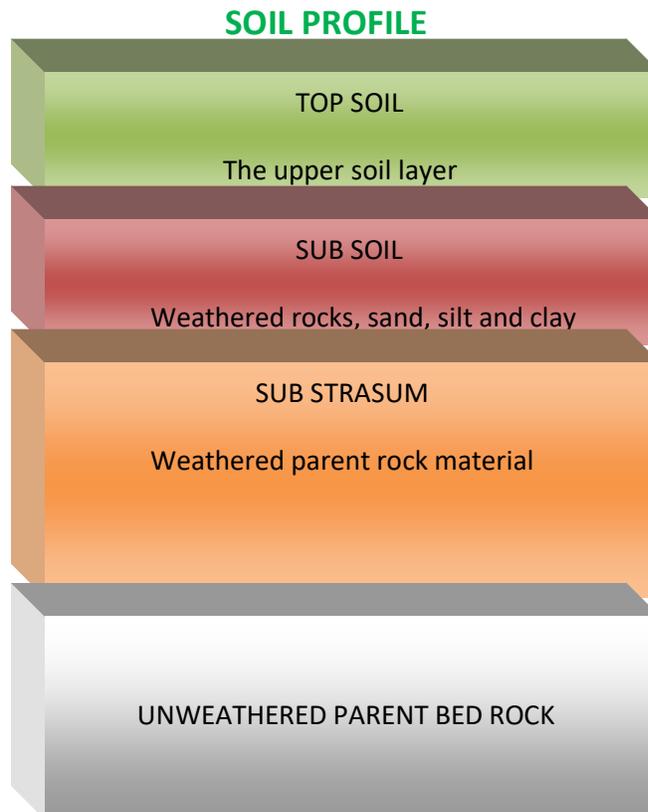
GURU GOBIND SINGH PUBLIC SCHOOL
GEOGRAPHY NOTES AND ASSIGNMENT

STD 10

PART II

SOIL AS A RESOURCE

- Soil is the most important renewable natural resource. It is a medium of plant growth and supports different types of living organisms on the Earth and is an important living system.
- It takes million of years to form soil up to a few centimeters.
- Relief, parent rock or bed rock, climate, vegetation, time and other forms of life are the important factors of Soil formation.
- Various natural factors such as change in temperature, action of running water are also responsible for soil formation.



CLASSIFICATION OF SOILS

Soils can be classified on the basis of the factors responsible for soil formation, colour, thickness, texture, age, chemical and physical properties.



ALLUVIAL SOIL

- Mostly these soils contain adequate proportion of potash, phosphoric acid and lime which are ideal for the growth of sugar-cane, paddy, wheat, cereals and pulses.
- These soils are highly fertile. Therefore regions of this soil are intensively cultivated and thickly populated.

BLACK SOIL

- These soils are black in colour and are also known as Regur or black cotton soil. These are ideal for growing cotton.
- It is made up of extremely fine, clayey materials which has good moisture holding capacity.

RED AND YELLOW SOIL

- They become red due to diffusion of iron in crystalline and metamorphic rocks.
- It looks yellow when it occurs in a hydrated form.

LATERITE SOIL

- Humus content of the soil is low because most of the micro –organisms, particularly the decomposers, like bacteria gets destroyed due to the high temperature.
- These soils are suitable for cultivation with adequate doses of manures and fertilizers.

ARID SOIL

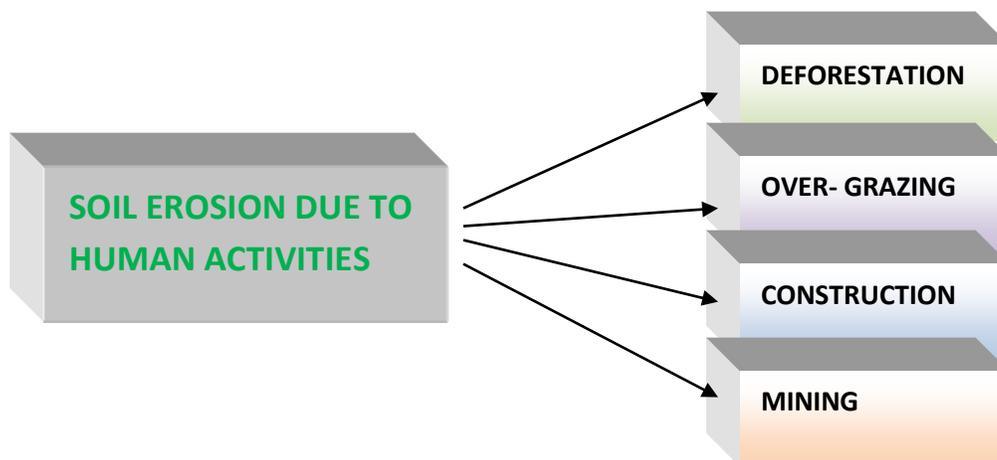
- Arid soil vary from red to brown in colour.
- They are generally sandy in texture and saline in nature and common salt is obtained from it by evaporating the water.

FOREST SOIL

- The soil texture varies according to the mountain environment where they are formed.
- They are loamy and silty in valley sides and coarse grained in the upper slopes.

SOIL EROSION AND SOIL CONSERVATION

- The removal of top fertile soil cover due to various reasons like wind, glacier and water is called **SOIL EROSION**.
- The process of Soil formation and erosion go on simultaneously and generally there is a balance between the two.
- Sometimes the balance is disturbed due to human activities.



NATURAL FORCES RESPONSIBLE FOR SOIL EROSION



The running water cuts through the clayey soil and makes deep channels as GULLIES.

This land becomes unfit for cultivation and is known as BAD LAND.

In Chambal Basin such lands are called RAVINES.

SHEET EROSION: When the top soil is washed away due to heavy flow of water down the slopes.

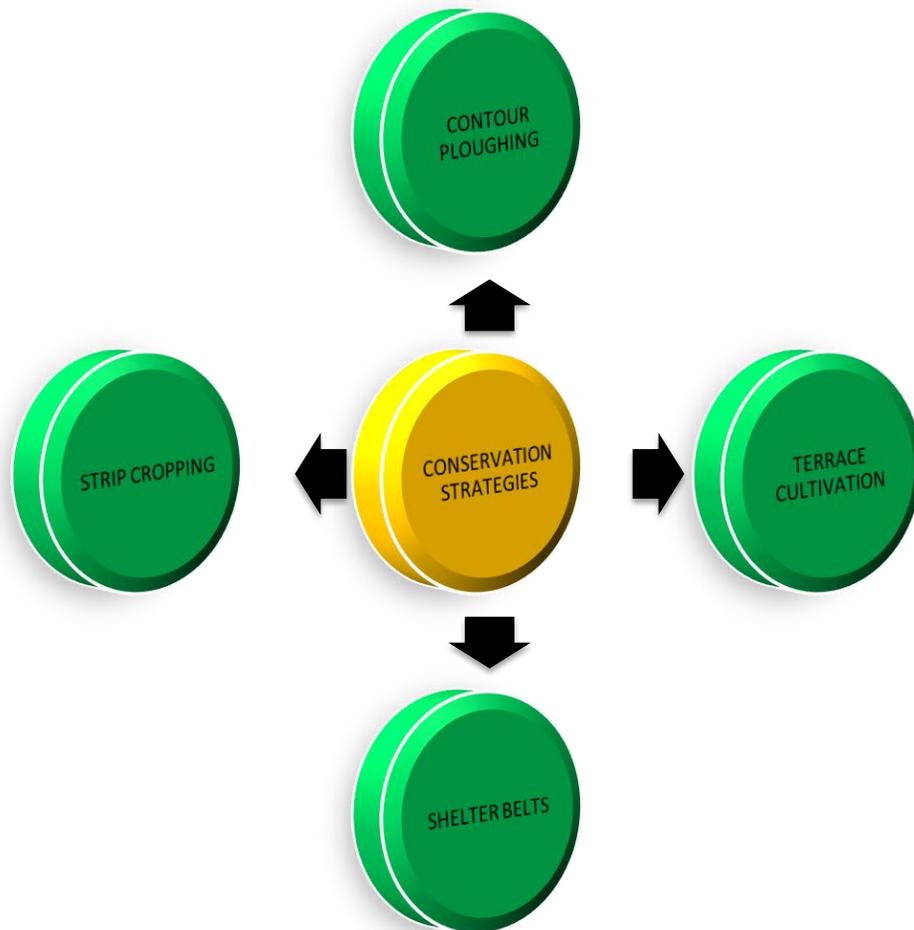
CONSERVATION METHODS

STRIP CROPPING- It is a method of cropping where in a large field, strips of grasses are left to grow in between the crops. This breaks up the force of the wind.

CONTOUR PLOUGHING- Ploughing along the contour lines can slow down the flow of water down the slopes.

SHELTER BELTS- Planting lines of trees to create shelter belts breaks up the force of the wind.

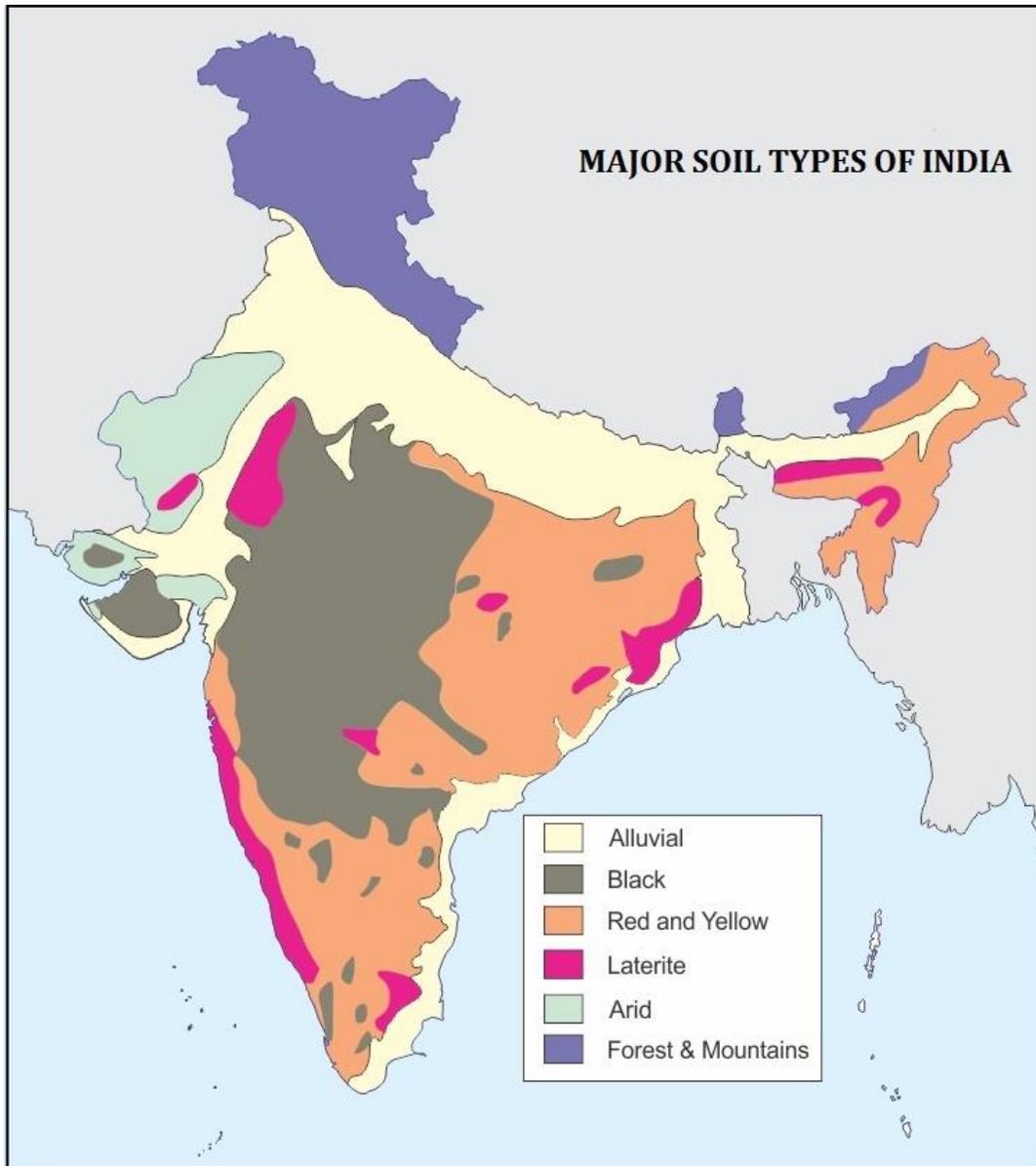
SOIL CONSERVATION



ASSIGNMENT

1. What is soil?
2. What is the removal of top fertile soil cover known as?
3. On what basis are soil classified into different types?
4. How can soils in the drier areas be productive?
5. What are the various forces of nature that contribute to the formation of soil? What is the importance of soil?
6. Describe the following methods of cultivation that can be adopted in mountainous areas to prevent soil erosion?

7. Mention the characteristics of each types of soils available in India.
8. Which is the most widespread and important soil of India? State the places where it is available?
9. Name the states having Black soil and mention the different types of crops grown in such soil.
10. On an outline political map of India show the major types of soil.



NOTE: Do this map in your copy

Read pgs 7 to 11 of chapter 1

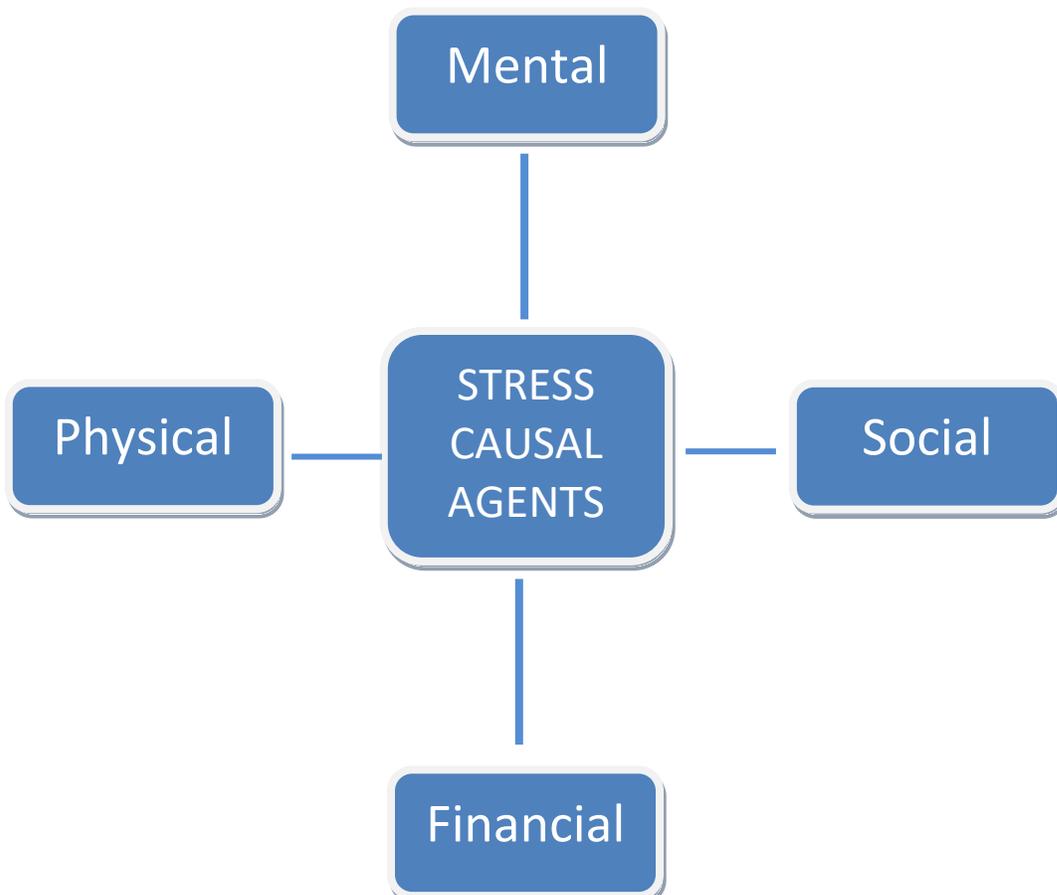
GURU GOBIND SINGH PUBLIC SCHOOL
SECTOR 5/B, B. S. CITY
SELF STUDY MATERIAL/ASSIGNMENT – 2
Subject: Information Technology (402) Class –X

Self Management Skills –II

Stress and Its Management

Stress is identified as a condition in which a person is tensed and worried. It can affect both our body and our mind.

Stress Management refers to focusing human efforts for maintaining a healthy body and mind capable of better withstanding stressful situations. Occasional stress is an unavoidable part of one's life. Stress refers to a "physical, mental, or emotional strain or tension". Small amounts of stress have a positive effect and they help us stretch ourselves to new level. High levels of stress over prolonged periods need to be managed. A Stress well managed can help one view events and situations as challenges and contributes in the growth of individual. Unmanaged stress leads to anxiety and sorrow resulting in ill status of mental and physical health. Stress causal agents can have following origins.



Mental: Students can be left overwhelmed, if they are unable to handle their assignment submission deadlines and examinations grades. Overly high expectations from self can leave one with chronic anxiety and stress.

Physical: As children grow up they may seek more independence, may become critically conscious of their looks and have to cope up with hormonal changes. Issues related to general well-being and health of an individual can lead to low self-esteem and cause stress.

Social: Discord amongst family members, peer pressure for doing things which kids will generally avoid, maintaining balance in relationships amongst friends, status show off may lead to stress at times.

Financial: Youngsters may have aspirational financial stress. This may of becoming independent or Finances aspirational stress may.

Types of Stress

Survival Stress

When a person fears that someone or something may physically hurt him, the body naturally responds with a burst of energy so that he will be better able to survive the dangerous situation (fight) or escape it all together (flight). This is survival stress.

Internal Stress

Internal stress is one where people make themselves stressed. This often happens when we worry about things we can't control or put ourselves in situations that cause stress. Some people become addicted to the kind of hurried, tense, lifestyle that results from being under stress. They even look for stressful situations and feel stress about things that aren't stressful.

Environmental Stress

This is a response to things around us that cause stress, such as noise, crowding, and pressure from work or family. Identifying these environmental stresses and learning to avoid them or deal with them will help to lower stress level.

Fatigue Related Stress

This kind of stress builds up over a long time and can take a hard toll on your body. It can be caused by working too much or too hard at your job(s), school, or home. It can also be caused by not knowing how to manage time or how to take time out for rest and relaxation.

Importance of Stress Management

Being well versed with stress coping mechanisms helps people lead a healthy and happier life. Adequately managed stress prevents medical and physical illnesses. Stress management is vital because it leads to following benefits.

- Improves mood
- Boosts immune system
- Promotes longevity
- Leads to burst of physical strength, which is vital for goal achievement
- Complete mental and physical engagement for task accomplishment
- Increases efficiency and effectiveness

- Prevents psychological disorders and behavioral problems

Stress Management Techniques

Stress is a mental state where one size doesn't fit all, what stresses one person may not stress others at all. It is highly individualistic phenomenon and the solution has to be customized to individual's mental state. Physical signs which may suggest stress are: breathlessness, dry mouth, butterflies in stomach, indigestion, nausea, acidity, fatigue, sweaty palms, cold hands and feet, irritation and hyperactivity etc. At the mental level following symptoms may reflect stress irritation, impatience, loneliness, upset, anxious, depressed, frustration, bored, guilty, insecure and forgetfulness.

Self-awareness amongst individuals for symptoms of stress will help them manage it better. They should try understanding the cause, understanding self and taking remedial measures. Avoiding the issues or procrastination is not the solution. Speaking out to the well-wishers like family and friends is of help in stress management as they provide a social support system. Apart from positive thinking, managing one's time across any or a combination of the following activities aids in stress management.

- *Physical Exercise*
When stress affects the brain, rest of the body also feels the impact. Physical exercise in the form of walking, skipping or for that matter indulging in any sports has been found to relieve stress as they stabilize mood, improve self-esteem and induce sleep.
- *Yoga*
Yoga is a school of Hindu philosophy reduces stress, which includes a series of postures and breathing exercises practiced to achieve control of body and mind.
- *Meditation*
It is a practice where an individual is supposed to focus his/her mind on a particular object, thought or activity to achieve a calm mental state reducing stress.
- *Enjoying*
Recreational activities like watching movies, attending concerts, playing games, involving in adventure sports, singing, dancing or even sketching can help individuals transcend to a happier mental state and help manage stress.
- *Going On Vacations with Family and Friends*
Vacations provide an opportunity of taking a holiday from our routine and appreciate different facets of life. Vacations can be taken up to friends and relatives place as well as to far flung attractive locations. Vacationing helps in de-stressing individuals.
- *Taking Nature Walks*
Taking nature walks in a pristine environment of a national park or a sanctuary or a trail in country side / village, brings us calmness by allowing our over stimulated minds a chance to relax and helps us relax.

Ability to Work Independently

Everyone who has been sent on this earth has been blessed in their own way. They together make this earth a beautiful place. Some can sing well, others are good at sports, some are intellectuals and some are good comedians. Everyone is special. But it is important that everyone learns the art of working independently. This typically means that one must learn to take ownership of the task assigned and leave no stone unturned in accomplishing the task. The individual who has the ability to work independently need not be supervised for the task completion.

Importance of The Ability to Work Independently

Following benefits of working independently advocate its importance.

- Ensures greater learning.
- Individuals feel more empowered and responsible.
- It provides flexibility to choose and define working hours and working mechanisms.
- Failure and success of the task assigned are accounted by individuals.
- Individuals become assets to organizations, groups and nations
- It ensures creativity and satisfaction amongst individuals.

Enhancing Ability to Work Independently

Ability to work independently can be enhanced by being self-aware, self-motivated and self-regulated. Let's now learn what are these:

Self-Awareness

Having conscious knowledge of your own self, capabilities, feelings and one's own character is called as self-awareness. It helps individuals to chart their ways for working independently.

Self-Motivation

Self-motivated individuals have an inner urge to do something, achieve their goals without any external pressure. It is a life skill and must be necessarily developed.

Self-Regulation

Self-regulation guides independent individuals as it helps them consider long term consequences rather than just transient feelings. It leads to a responsible and a value driven behavior.

Self Assessment Exercise

1. Multiple Choice Questions:
 - a) Stress is identified as a condition in which a person is _____ .
 - i) tensed ii) worried iii) relaxed iv) both i and ii
 - b) Which type of stress is termed as 'fight or flight response' ?
 - i) Environmental ii) Survival iii) Internal iv) Fatigue related
2. State true or false:
 - a) Meditation is not helpful as a stress management technique.
 - b) Stress Management refers to focusing human efforts for maintaining a healthy body and mind capable of better withstanding stressful situations.
3. Answer following questions:
 - a) What happens when people have large amounts of stress?
 - b) What is environmental stress?
 - c) What are the symptoms of stress?
 - d) What should we do when we become aware of our flaws?
 - e) Explain the types of stress in detail.
 - f) What are the techniques that are used to manage stress?
 - g) Why is Self-regulation important in life?

Note: Make assignment_2 in separate thick copy containing assignment_1.

Information and Communication Technology Skills –II

Operating System

An operating system is the basic software that controls the computer. It serves as an interface between the user and the computer.

Some of the functions of Operating system are:

- It manages all the devices of a computer and keeps track of the status of the device, whether it is busy or not.
- It also checks whether the device is functioning properly or not.
- It also controls software resources of the computer.
- It manages the computer memory and keeps track of which memory space is in use by which program and which space is free.
- It manages the structure of the files and directories on a computer system.
- It keeps track of the amount of disk space used by a specific file.
- It allows you to create, copy, move and delete files.

Types of Operating Systems

We have already discussed about some commonly used operating systems in class IX. These are:

- **DOS** (Disk Operating System)
- **Windows** It is an operating system developed by Microsoft.
- **Linux** It is an operating system designed for personal computers. It is a free and open-source software.
- **Mobile operating Systems**
 - ✓ **Android**
 - ✓ **Symbian**
 - ✓ **Windows Phone**
 - ✓ **iOS**

Types of Operating Systems

The different types of operating systems are as follows:

Interactive (GUI-based) A graphical user interface is a user-friendly operating system in which commands can be entered by clicking/double-clicking/right clicking a mouse. Windows operating system is an example of an interactive operating system.

Single-user , single-task operating system This type of operating system allows only one user to do a task on the computer and one thing at a time.

Single-user, multi-task operating system This type of operating system is used on Desktop computers, laptops, where a single user can operate on several programs at the same time. For example, Windows, Apple MacOS are examples of single-user multi task operating system.

Multi-user A multi-user operating system enables multiple users to work on the same computer at different times or simultaneously.

Real Time A real time operating system is used to control machinery, scientific Instruments, like robots, in complex animations and computer controlled automated machines. A real-time operating system is a computing environment that reacts to input within a specific period of time.

It manages the resources of the computer so that any particular operation is executed in the same amount of time every time it is executed.

Windows CE and Lynx OS are examples of real-time operating systems.

Distributed A distributed operating system runs on a set of computers that are interconnected by a network. It combines the different computers in the network into a single integrated computer and storage location. Windows, UNIX, and LINUX are examples of distributed operating systems.

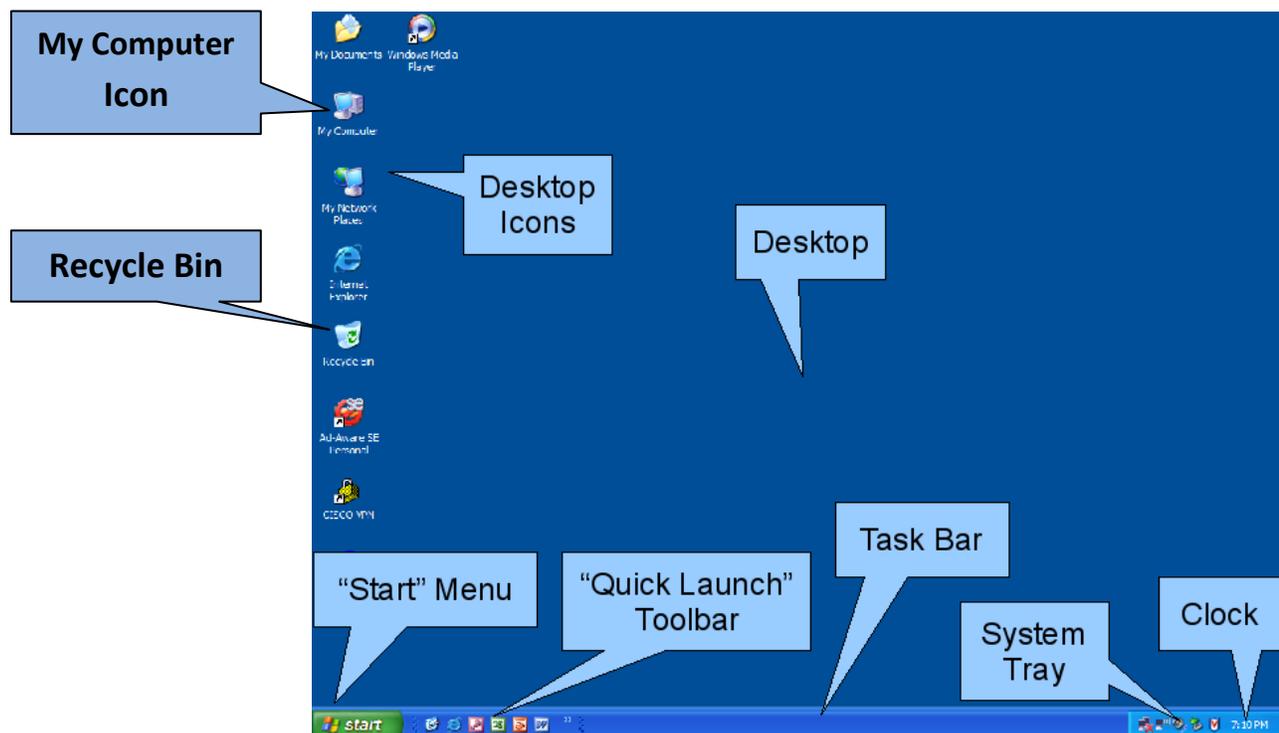
Windows 7 operating system

Windows 7 is an operating system developed by Microsoft and is used on personal computers.

After loading Windows 7, the first screen that appears on the monitor is called **desktop**. From the desktop, you can access different components of Windows 7. By default, Windows 7 has a picture for the desktop background. This is called **wallpaper**.

Small pictures on the desktop are called **icons**. These icons represent files, folders, applications, etc. At the bottom of the desktop is a long bar called the Taskbar. To the left of the taskbar is the Start button.

Components of Windows 7 Desktop are shown below:



We already know that use of following icons:

My Computer It displays all the storage areas of the computer. Through the My Computer icon, you can access all drives, files, and folders on the computer. When you double click Computer icon, a window shown below appears on the screen.

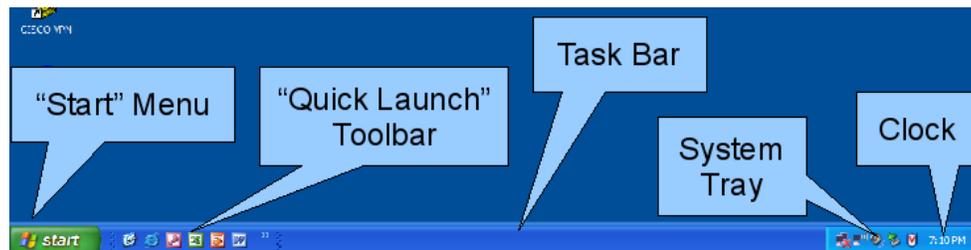
Documents

This contains area to store files on the computer.

Taskbar

Taskbar is the long horizontal bar present at the bottom of the screen. To the left is the Start button. Right of the taskbar contains Date/Time. You can also see icons of active applications and some shortcuts on the Taskbar.

The main components of Taskbar are shown in the following figure:



Start button:- It is located on the left of the taskbar. Clicking the Start button opens the Start menu and provides access to programs and features.

Shut Down:- allows the user to turn off the computer.

All Programs:- Provides access to all the installed programs and applications. To start an application, just click it.

Search Box:- This allows the user to search a file or a folder or run executable files.

Control panel:- This allows the user to change various settings.

Recycle Bin

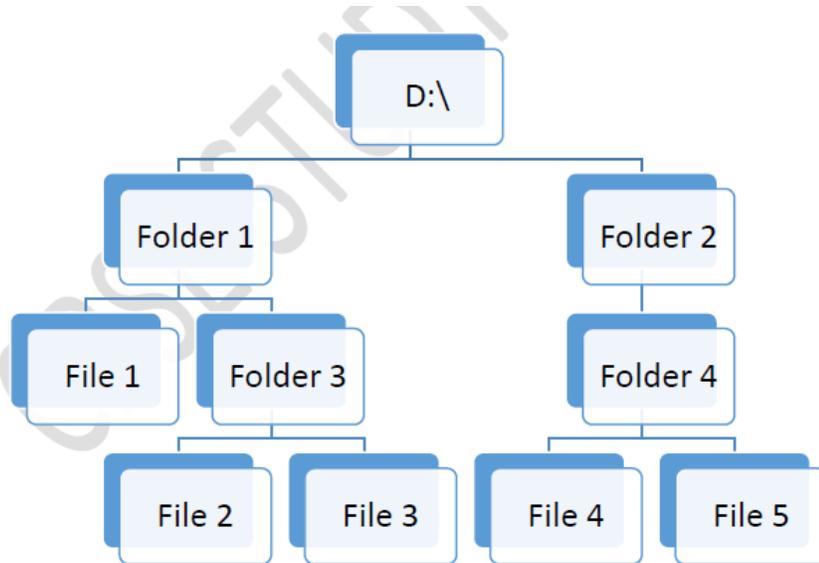
Files and folders deleted by the user are stored in the Recycle Bin. From Recycle Bin, you can retrieve files or folders deleted by mistake.

File System

Everything you store on your computer is stored in the form of a file. File system is a way in which you give name to a file, store it and retrieve it. There are specific naming conventions for naming files or folders, like characters that can be used, maximum number of characters, etc.

Files can be separately placed into groups, called folders/directories. Each directory/folder can contain related files and/or sub-folders. A sub-folder may contain one or more files and sub-folders within. This allows easy accessibility of files.

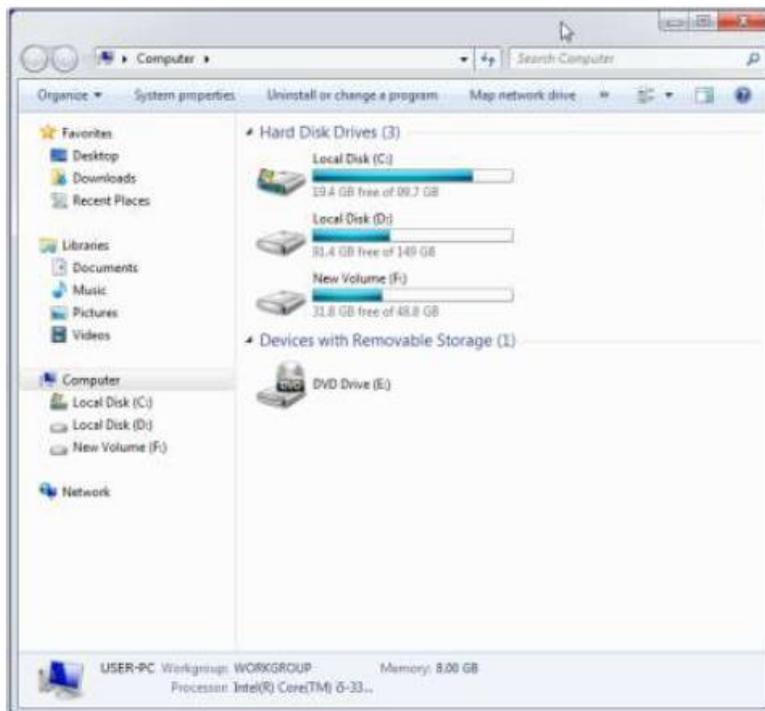
Files are managed in a hierarchy. This allows you to view the files in the current directory and then move to sub-directories.



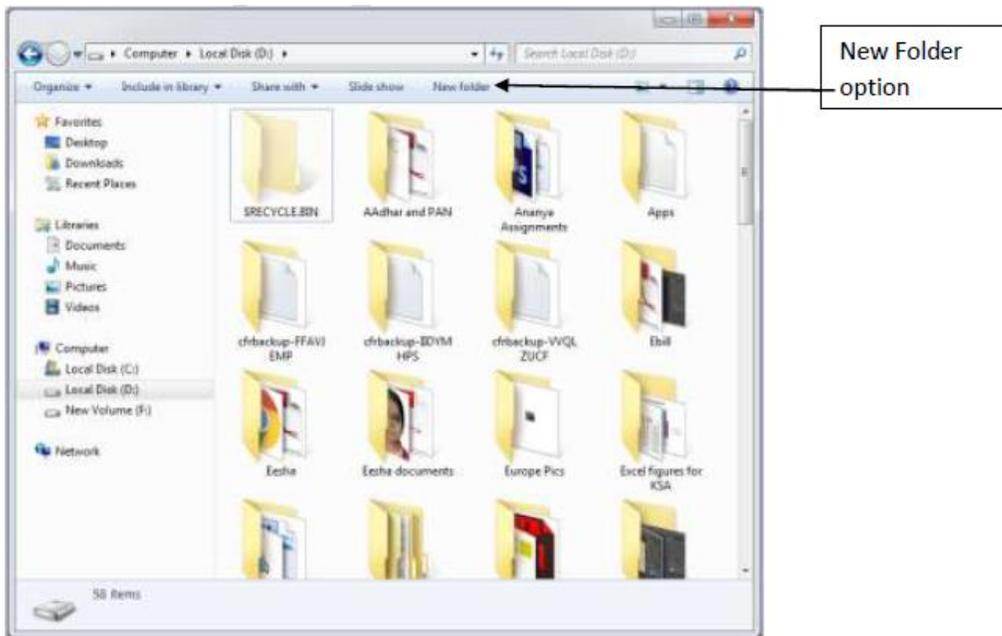
Creating a folder

The steps to create a new folder are:

1. Double-click the **Computer icon**. (Fig)



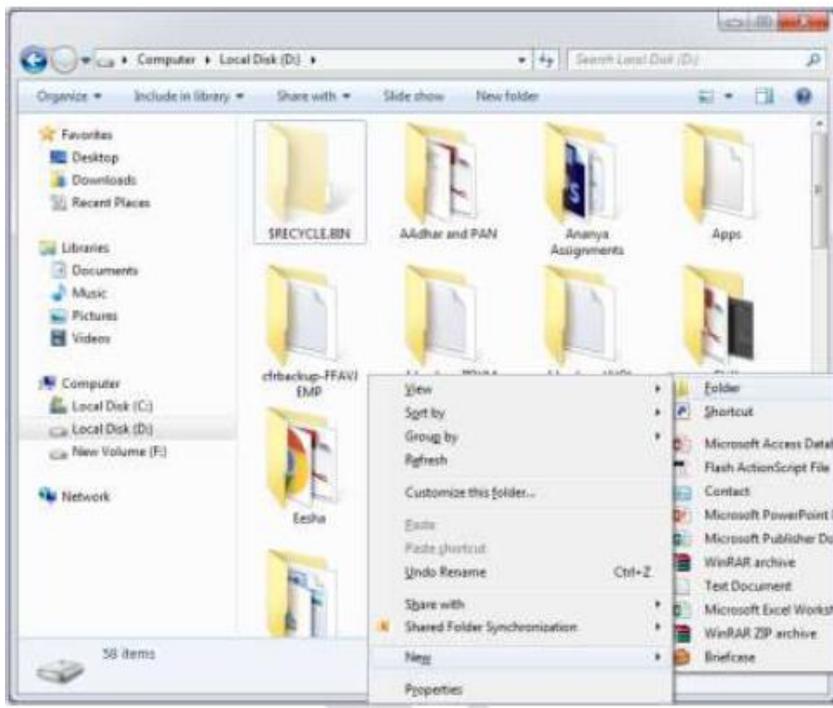
2. Select the drive in which you want to create a new folder. Say, Local Disk D: .
3. Window will open up showing files and folders in Local Disc D: (Fig)



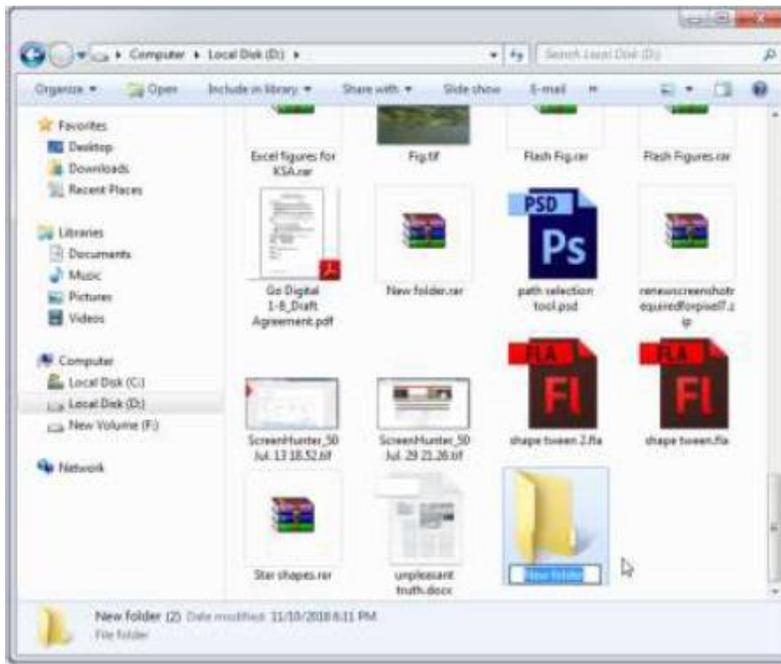
4. Click **New Folder** on the toolbar.

Or

Right-click anywhere in the blank area of the right column. A shortcut menu appears. Select **New > Folder** from the shortcut menu. (**Fig**)



5. A new folder is created with name **New Folder** highlighted (**Fig**).



6. Type a name for the folder (Fig). Press Enter key.

Renaming folders and files

To rename a file or a folder, the steps are:

1. Right-click the file or the folder.
2. From the shortcut menu, select **Rename** option.
3. Type the new name or edit the existing name and press the Enter key.

Deleting files or folders

To delete a file or a folder:

1. Click the file or the folder.
2. Press the **Delete** key.

Or

Right-click and select **Delete** option from the **Shortcut menu**.

Copying Files and folders

When you copy a file or a folder, duplicate of the original file or folder is created at the new location., the original remains as it is.

You can copy a file or a folder in any one of the following ways:

1. **Shortcut menu:**

- a. Right-click the file or the folder you want to copy.
- b. Select **Copy** option from the **Shortcut** menu.
- c. Select the drive or the folder where you want to make a copy of the selected file or folder.
- d. Right-click and select **Paste** option from the **Shortcut** menu.

2. **Drag and Drop method:** To copy a file or a folder, hold down the Ctrl key while dragging it to the new location.

3. **Using Keyboard:**

- a. Select the file or the folder.
- b. Press Ctrl + C to copy the file or the folder.
- c. Open the destination folder.
- d. Press Ctrl + V to paste the copied file.

Moving Files and folders

When you move a file or a folder, the original file or folder is moved to the new location. You can move a file or a folder in any one of the following ways:

1. **Shortcut menu:**

- Right-click the file or the folder you want to copy.
- Select **Cut** option from the **Shortcut** menu.
- Select the drive or the folder where you want to move the selected file or folder.
- Right-click and select **Paste** option from the **Shortcut** menu.

2. **Drag and Drop method:** To copy a file or a folder, select the file and drag it to a new location.

3. **Using Keyboard:**

- Select the file or the folder.
- Press **Ctrl + X** to cut the file or the folder.
- Open the destination folder.
- Press **Ctrl + V** to paste the copied file.

Permanently Deleting Files

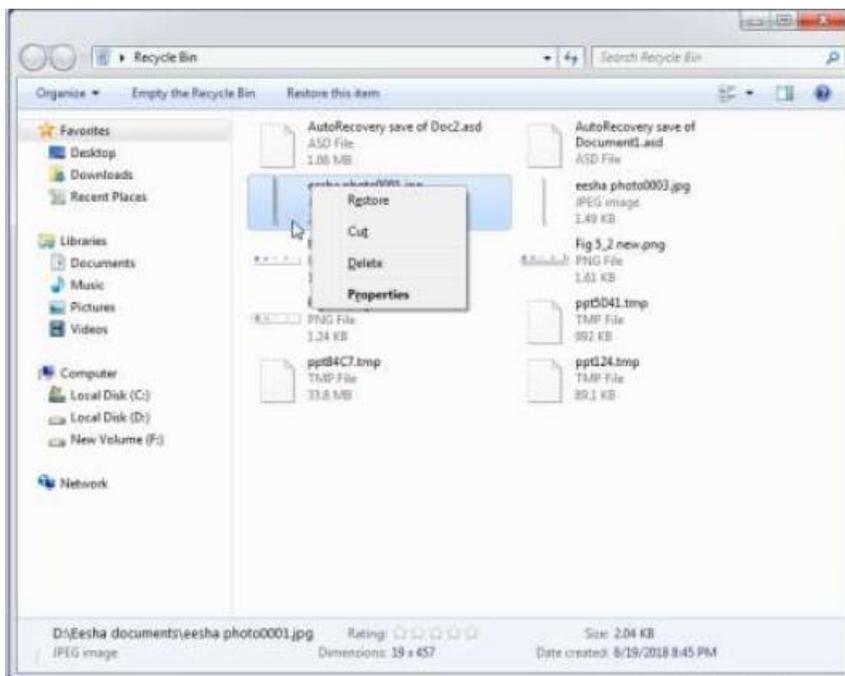
You can permanently delete the contents of the Recycle Bin in any one of the following ways: Right-click the **Recycle Bin** icon and then click **Empty Recycle Bin**.

OR

- Double-click the **Recycle Bin** icon.
- The **Recycle Bin** window appears.
- Click **Empty the Recycle Bin**.

Restore Files/Folder from Recycle Bin window

To recover a file from the **Recycle Bin**, right-click the file, and then click **Restore**.



Or

Select the file and click **Restore this item**.

Apply Basic Skills for care and Maintenance of Computer

Importance and need of care and maintenance of computer

Computer systems require maintenance so that the system works efficiently. Poor maintenance may lead to system failure.

Regular care and maintenance may help you detect any issues at an early stage and keep it functioning well.

Since a lot of important data is stored in the computer, it is necessary to have regular maintenance of the computer to be done.

Computer virus, malware, and other harmful softwares can cause damage to the working of the computer. If anti-virus is installed in the computer, and is updated and run periodically, then any loss of data can be prevented.

A large number of files are stored on the computer. These files can be disorganized and fragmented and may result in slowing down of the computer.

Regular maintenance of the system includes installing updates, security, taking backups, scans, etc.

Both internal and external parts of the computer system should be taken care of.

1. Keep the computer dust free.
2. Do not eat or drink while working on the computer. Food or drink may spill on the system.
3. To keep the keyboard clean, make sure your hands are clean before using it.
4. CDs and DVDs should be handled carefully so that it does not get any scratches.
5. Keep keyboard covered when not in use.

Cleaning the computer components

Computer components need proper care for these to last longer. Preventive maintenance increases the life of the components.

For example, a cable is damaged, but still working. It should be timely replaced or repaired to prevent any other damage.

Fan in the CPU helps to cool down the CPU as it gets heated while working. If the cooling fan is blocked, may be due to dust and is not repaired or replaced, can easily catch fire.

Therefore regular inspection of the components is required. This increases the lifetime of the hardware.

General precautions to be taken while cleaning the computer components are:

- Always Power Off the computer system before cleaning.
- Never spray cleaning fluid directly on the component of the computer. First spray the liquid on the cloth and then wipe the component.
- Do not allow the cleaning liquid to drip near the circuit board.
- Preferably use anti-static wrist band which helps to prevent building up of static electricity near electronic device.

Let's discuss how to clean some common peripheral devices of computer

Computer monitor

To clean the computer monitor, you can use a soft lint-free cloth, like cotton and water or special cleaning liquid. You should not spray water or cleaning liquid directly on the computer monitor as it may run through the seams. Spray water or cleaning liquid on the cloth and gently wipe the computer monitor.

Keyboard

Dirt and dust can cause damage to the keyboard. Keys of the keyboard may not function properly if dirt enters the keys. You should always clean the keyboard periodically by holding upside

down and shaking it. You can also clean it by blasting it with compressed air. After this, use a damp lint-free cloth to clean top of the keys. You should never spray any liquid cleaner or water directly on the keys of the keyboard.

Optical Mouse

You can clean the bottom of the optical mouse with a clean lint-free cloth. Lens area can be cleaned by blowing air or cotton swab.

Digital camera

Never touch the lens of the camera. To remove the dust, you can use soft lens brush or wipe with a soft dry cloth. For stubborn dust, you can use special fluid for lens cleaning which should be first put on the tissue and then wipe the lens. Never put the fluid directly on the lens.

CDs and DVDs

Keep CD/DVD in proper case to prevent it from scratch free. If there is some dirt on the CD or DVD, it may not work at all. Finger prints and dirt can be removed by lightly rubbing with a clean lint-free cotton cloth. If the dirt is hard to remove, you can use special cleaning fluid. Put the drop of fluid on a swab of cotton and gently rub on the media.

Preparing maintenance schedule

Regular maintenance of the computer system is very important.

Some of the maintenance activities are:

- Keep the components of the computer, like keyboard, mouse, monitor, etc. clean.
- Replacing hardware that is not functioning properly.
- Keep food items away from the computer.
- Cables and chords should not be messed up.
- Removing unauthorized software from the computer.
- Taking regular backup of the data.
- Ensure backups are working properly by periodically restoring data. You should use external hard drive for backup of data on your computer.
- Running anti-virus periodically.
- Keeping anti-virus software up to date.
- Do not overcharge the batteries.
- Do not block the vents.
- Always shut down the computer properly.

Regular scans should be done to check for viruses, malware, etc. An effective antivirus software should be installed in your computer. Always keep your anti-virus software updated so that it can detect new viruses. Full system scan should be done to periodically, preferably weekly to scan for viruses.

A regular disk defragmentation should be done to remove all unnecessary information that slows down the computer. Disk defragmentation done at regular intervals helps the disc space to be used at an optimal level.

Take regular backup of the data on your computer. In case the data is lost due to any reason, system failure, virus attack, etc. , you can easily retrieve your data using backup files.

System should be upgraded with new technology that were not there at the time of purchase, like, increasing RAM, to improve the performance. Also storage space should also be increased for storage of more information.

If you are getting some disc errors, then make sure that temporary internet files should be deleted from time to time.

Softwares should be updated regularly so that it works with maximum efficiency.

Computer virus

A computer virus is a software program that attaches itself to other programs and alters their behavior. A virus may or may not be destructive. Some viruses erase data or corrupt programs on the computer.

When a virus enters a computer system, it makes copies of itself and carries out the harmful tasks that it is programmed for.

Some viruses get activated at a certain date and time. Viruses also attach to the files stored on the computer or the storage media and harm these files.

A virus may get attached to e-mail messages and spread from one computer to another.

A computer virus can infect only the software and not the hardware.

A computer can get infected with virus in any of the following ways:

- Infected files
- Infected pen drives
- Infected CD-ROMs
- Through infected file attachment of e-mails

A computer virus cannot do the following:

- It cannot infect files on CD or DVD.
- It cannot infect computer hardware like, keyboard, mouse, etc.

How do we know that our computer is infected with virus? Sometimes, computer shows strange behavior. Some of the common signs of a virus attack are:

- Computer runs very slow
- There is change in the file size
- Computer often stops responding
- There is an increase in number of files (unusual)
- Unusual error message appears on the screen
- Computer restarts on its own

How to prevent virus infection

The following points should be kept in mind to prevent virus infection:

- Install and use anti-virus software.
- Keep anti-virus software updated.
- Scan all the files that you download from the Internet
- Do not open e-mails of an unknown person/sender
- Don't allow any untrustworthy person to use your system.
- New use unknown pen drive/CD on your computer
- Never click on the windows that pop-up when you are surfing the Internet.

Preparing computer against virus

To prevent our computer from being infected with virus, we should install anti-virus software, run it periodically and keep it updated so that it can scan and remove new viruses.

Antivirus software is a program designed to detect and remove malicious programs from the computer.

Some examples of antivirus software are McAfee VirusScan, Norton AntiVirus, Microsoft Security essentials, and Quick Heal.

For an anti-virus program to be effective:

- It needs to run in the background at all times.
- Keep the anti-virus software updated so that it can recognize new viruses.
- Run full disk scans periodically.

Scanning and cleaning virus

Let us discuss how to use Quick Heal Total security to scan the computer system.

1. Click **Start** ➤ **All Programs** ➤ **Quick Heal Total Security** ➤ **Quick Heal Total Security**.

Or

Double-click the Quick Heal Antivirus icon on the desktop.

2. The main window of **Quick heal Total Security** opens up (**Fig given below**)

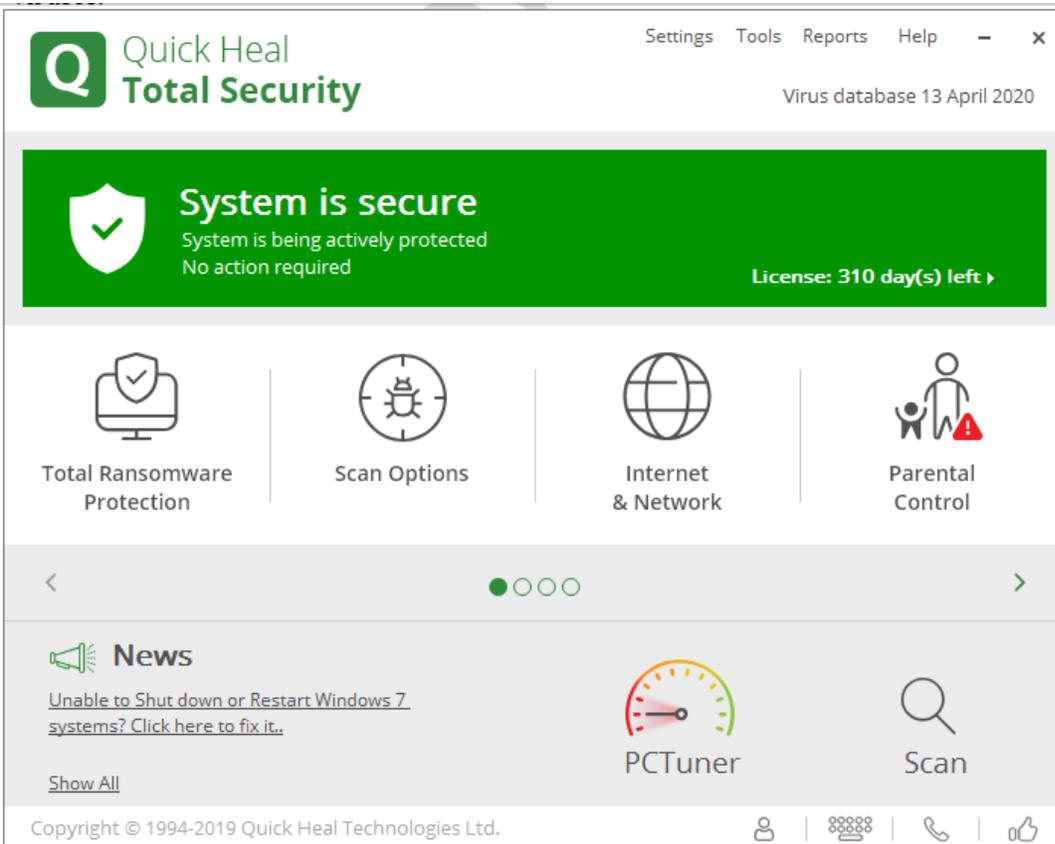


Fig: Main window of Quick Heal Total Security

3. The main window has three sections:

a. Top section has the following options:

Option	Description
Settings	Using this option you can customize settings like, automatic update, Internet settings, Self Protection, Password Protection, Restore Default Settings, etc.
Tools	Helps you diagnose the system in case of virus attacks, clean application and Internet activities, restore the Internet Explorer settings modified by malwares, isolate the infected and suspicious files, prevent USB drives against auto-run malware infection. You can also exclude files from virus protection.

Reports	Helps you view the activity reports of Scanner, Virus Protection, Email Protection, Scan Scheduler, Behavior Detection, Quick Update, Memory Scan, Phishing Protection, Registry Restore, Boot Time Scanner, etc.
Help	This option provides information on how to use Quick Heal Antivirus and details about the version, etc.
b. The middle section has the following options:	
Files and Folders	Helps you protect files and folders against malicious threats. With this option, you can configure Scan Settings, Virus Protection, Block Suspicious Packed Files, Screen.
E-mails	Helps you configure Email Protection, Trusted Email Clients Protection, and Spam Protection.
Internet & Network	Helps you configure the settings for Internet & Network protection. With this option, you can configure Firewall Protection, Browsing Protection, Malware Protection, Phishing Protection.
Parental Control	Helps you control the Internet access, application access, and computer access for the children and other users.
External Drives & Devices	This option allows you to configure settings related to threats that come from CDs, pen drives, external disks, etc.
c. The bottom section has the following options:	
News	This option provides you with the latest news from Quick Heal.
PC Tuner	Helps you improve system performance by cleaning your system with features such as Disk Cleanup, Registry Cleanup, Traces Cleanup, Duplicate File Finder, Secure Delete and Registry Defragmenter.
Scan	This option provides various scanning options, like, Full System Scan, Custom Scan, Memory Scan, Mobile scan and Boot Time Scan.

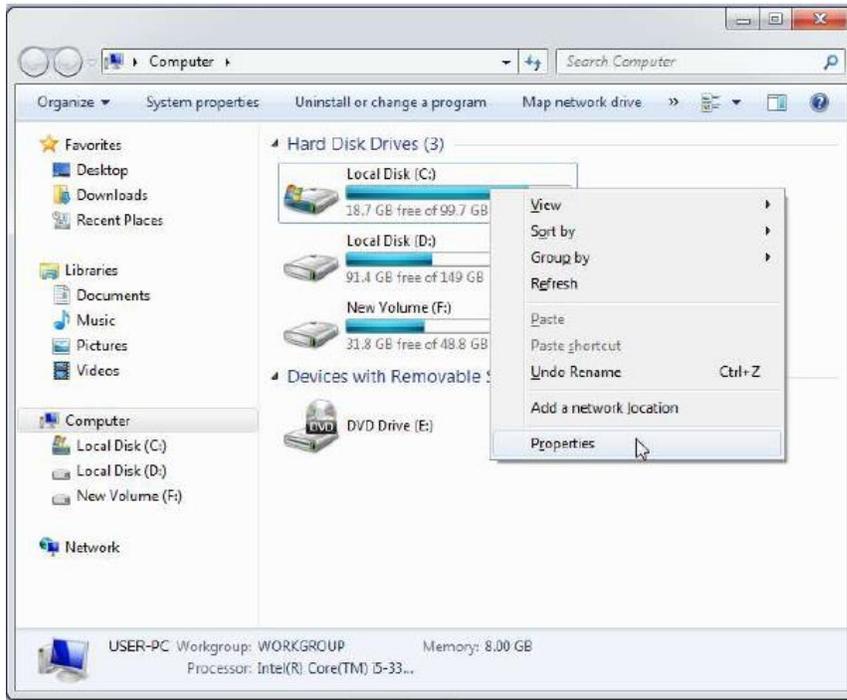
To perform full system scan,

1. Click **Scan** ➤ **Full System Scan**.
2. The scan process will begin
3. On completion of the scan, the scan statistics and reports are provided.
4. Click **Close**.

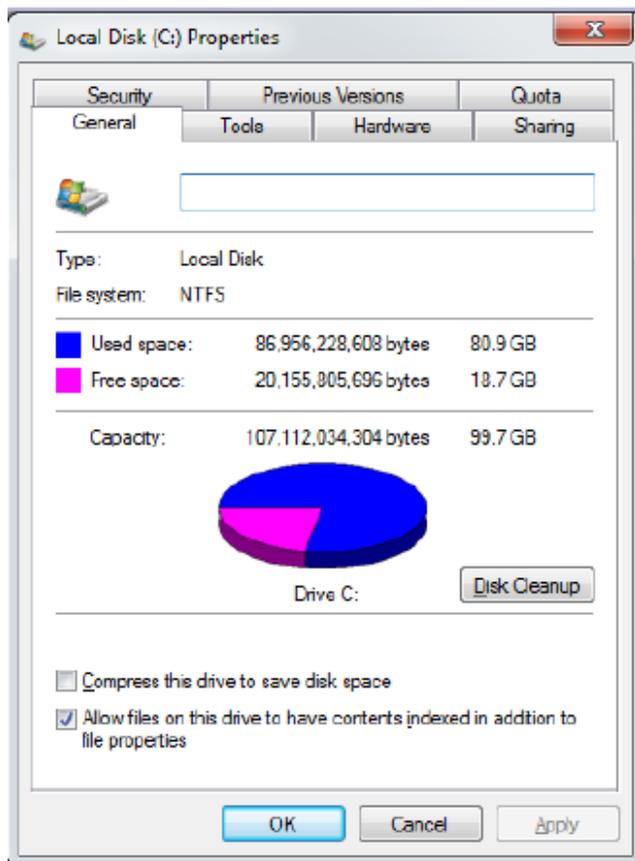
Removing Temporary Files

The steps to remove temporary files are:

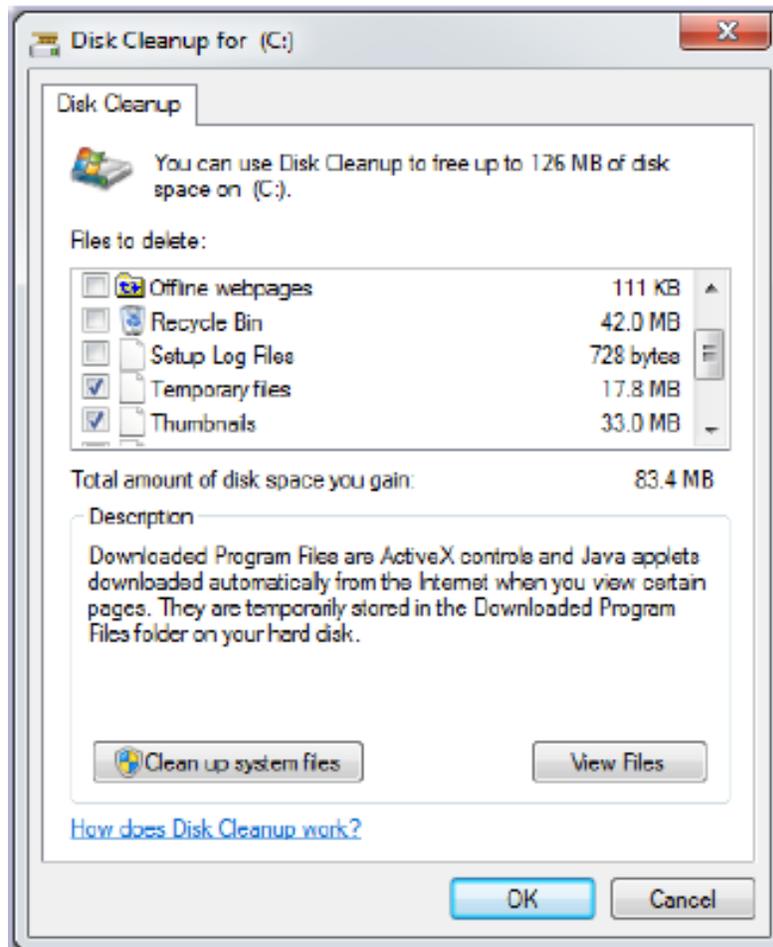
1. Double-click **Computer icon** on the desktop.
2. The **Computer Window** opens.
3. Right-click Local Disk C: and select **Properties option** from the **Shortcut** menu.(Fig)



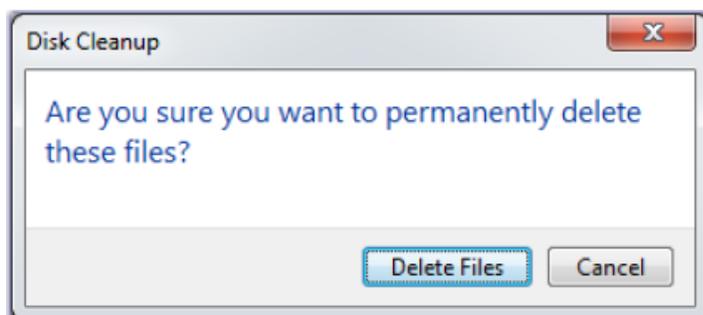
4. The **Properties** window opens. (Fig)



5. Click **Disk Cleanup**.
6. The **Disk Cleanup for C:** window appears (**Fig**)
7. Click the **Check box** next to **Temporary Files, Temporary Internet files, etc.** that you want to delete.



8. Click **OK**.
9. A confirmation message will appear (**Fig**).

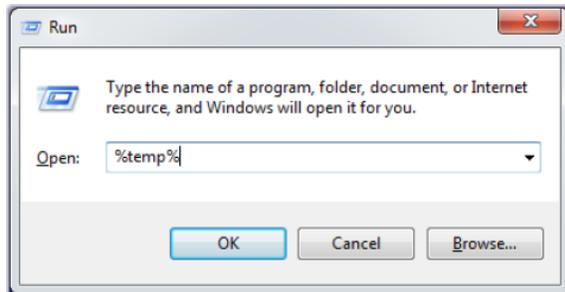


10. Click **Delete Files**.
11. Windows will delete all the temporary files on the computer.

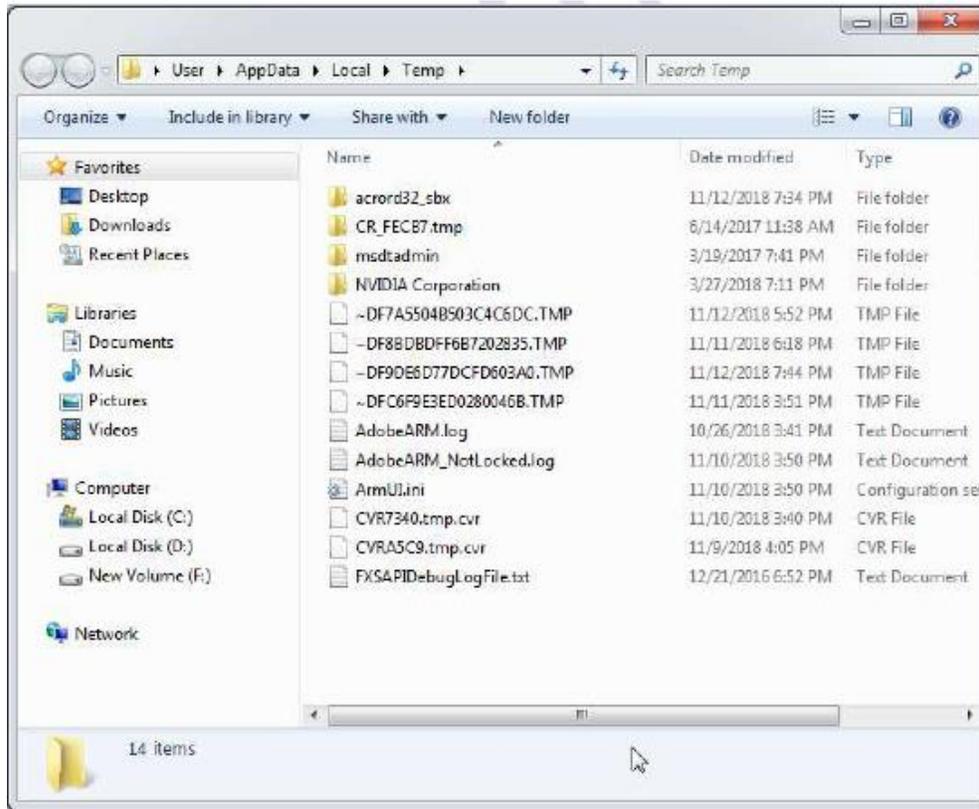
Removing files of Temporary Folder

The steps to remove files of temporary folder are:

1. Press **Windows button + R** on the keyboard.
2. The **Run dialog box** appears.
3. Type **%temp%** (**Fig**)



4. The **Temp folder** opens (**Fig**)



5. Click **Ctrl + A** to select all the files in the folder.
6. Press **Delete** key.
7. A message box appears. Click **Yes** to confirm.
8. All the files in the Temp folder will be deleted.

Self Assessment Exercise

Lets Try It

Activity 1

1. Start Your computer.
2. Name the operating system in your computer.
3. Identify three main icons on the desktop and write their names
4. Identify and write names of three files on the desktop.
5. Identify the position of the taskbar on the desktop. Is it at the top, bottom, left or right?

Activity 2

1. Double-click the Computer icon on the desktop.
2. The Computer window opens up.
3. Click the Minimize button to reduce the window to a button on the taskbar.
4. Again click the Computer icon on the taskbar to restore the Computer window.
5. From the Computer window, identify and write the hard disk drives in your
6. computer.

Activity 3

1. Start your computer.
2. Double-click the Computer icon.
3. Select Local Disk D:.
4. Create a folder named 'My New Folder' in Local Disk D:
5. Rename this folder as 'My Folder 1'.

Activity 4

1. Start your computer.
2. Double-click Computer icon.
3. Double-click Local Disk D:
4. Create a new folder name in Local Disk D:
5. Rename this new folder as 'My Text Files'.
6. Copy this folder to My Documents.
7. Open folder 'My Text Files' in My documents.
8. Create another folder named 'My New Files'.
9. Move this folder 'My New files' on the desktop.
10. Delete the folder 'My New Files'
11. Restore the deleted folder.

Worksheet

1. What is an operating system?
2. Mention any three functions of operating system.
3. Name any three operating systems for computers.
4. Name any three mobile operating systems.
5. What is the name given to the screen that appears after Windows operating system is loaded?
6. Small images on the desktop are called _____.
7. Name two special icons on the desktop .
8. Name the icon that provides access to all the drives, files and folders on a computer.
9. Name the button to the left of the taskbar.
10. Picture for the desktop background is called _____.
11. Mention any one way in which can create a new folder.
12. To change the name of the folder, right-click and select _____ option from the Shortcut menu.
13. How can you delete a folder?
14. What is the difference between moving and copying a folder?
15. Differentiate between file and folder.
16. Name the set of commands to move a folder from one location to another.
17. Name the place where deleted files are placed.
18. How can you empty the recycle Bin?
19. What is the possible cause of slowing down of computer?
20. Why keyboard should be covered if not in use?
21. What general precautions should you take while cleaning the computer components?
22. List some of the maintenance activities for the computer system.
23. Why regular disk defragmentation should be done?
24. Mention few ways in which a computer gets infected with virus.
25. Can computer virus infect hardware?
26. What are the common signs of a virus attack?
27. How can you prevent your computer from virus infection?
28. What is the use of antivirus software?
29. Why we should remove temporary files and folders from the computer?
30. Name any two commonly used anti-virus software.

Note: Make assignment_2 in separate thick copy containing assignment_1.
