UNIT 8 NOTE-TAKING

Structure

8.0 OBJECTIVES

The aim of this unit is to help you take notes for the purpose of study. For this you require a) the ability to read with a purpose, and to separate the essential information in a text from that which is repetitive and irrelevant, b) shortening devices to save time and condense your material, and c) a proper organisation of the ideas contained in the text in terms of main points and subordinate points. We shall also show you different ways of organising notes, such as the use of tables and diagrams, and make you aware of different note-taking techniques.

After you have completed this unit, you should be able to use these skills in preparing your own notes.

8.1 INTRODUCTION

Almost anyone who studies at a college or university or works in an office has to take notes sometimes. As a student you generally take notes while listening to a lecturer in the classroom or a speaker at a seminar, or when reading your course books. In an office you may need to take notes when the boss gives you instructions, or when you attend a meeting or a conference. Sometimes you may have to take an examination to improve your qualifications or to compete for a better job. Then you have to take notes from the books you read. While taking notes, have you ever asked yourself the reasons for taking them? There are usually two main reasons:

i) to keep a record of the speaker's or the writer's main ideas (not to take down or copy every word)

ii) to help your memory when, for example, you are revising for an examination, or preparing a report.

The tendency of many students is to try to write down as much as possible of what the teacher is saying. In this process, they often miss the main points of the lecture, but, on the other hand, take down a lot of unimportant information. Similarly, when you are taking notes from a book or an article, it is generally not a good idea to copy out large chunks of a text, unless you are going to quote from it.

In this unit we shall deal with taking notes from a reading text from the point of view of the organisation of notes. We shall first show you how to organise your ideas into main points and subordinate points, and then how to organise your notes into tables and diagrams.

8.2 HOW TO READ?

When we read, we generally have a purpose in mind. Often our purpose is to obtain information on a particular topic. When you read a passage in order to obtain specific information, it is a good idea to acquaint yourself with the text by quickly going through it. You will notice that some paragraphs will contain the information you want, and they must be read carefully. Other paragraphs may contain a lot of repetition, and they can be skimmed through i.e. read faster and more superficially. There may be some passages that are of no interest to us or are completely irrelevant for our purpose, and they can be skipped.

Example 1

In the passage that follows, your purpose in reading will be to obtain information about the various kinds of heart diseases, their causes and symptoms.

A. Heart disease is the enemy number one of the human body in our time. It accounts for the largest number of deaths in all affluent societies, outstripping cancer, accidents and infections as causes of death. In developing countries as well, this trend is apparent, now that fewer people die of infection, and more children survive the diseases of childhood.

B. There are four important types of heart disease. Firstly, congenital heart disease, which is present at birth; an example of this is the so-called 'blue baby'. It accounts for 2 per cent of all heart diseases. The second type, rheumatic, is quite common in some developing countries among the young people, and accounts for some 30 to 40 per cent of all heart cases. It is caused by an infection of the throat, which if untreated, causes damage to the heart. The symptoms are a chronic sore throat, painful joints and high fever. This disease is widespread in many developing countries, due to poor living conditions and overcrowding.

C. High blood pressure is also an important cause of heart disease, of the third type, hypertensive, and accounts for some 15 to 25 per cent of all heart cases. It is believed that among other factors such as stress and smoking, a higher salt intake in the diet leads to blood pressure.

D. Degenerative heart disease, commonly known as ischaemic heart disease, is the cause of heart attacks, and is one of the most important health problems among adults throughout the world. Ischaemic heart disease is due to blocking of the two blood vessels, which supply blood to the heart muscle. At birth they are wide open, but in a diseased state one or more of these vessels is completely blocked, leading to defective blood supply to various portions of the heart. This results in the well-known symptom of pain on emotional or physical stress called angina. What causes this is the laying down of a fatty substance, called cholesterol, in the wall of the artery, which gradually blocks the vessel and may close it completely.

E. How does cholesterol get into the blood? It results partly from a diet rich in fats of animal origin, such as butter, cream, cheese, rich cuts of beef, ham and bacon, egg yolk, and saturated cooking fats, such as ghee.

(Based on "*The Heart*" in Sarah Freeman, Study Strategies in English)

Glossary

A **affluent** : having plenty of money or other possessions; wealthy
outstripping: getting ahead of
trend: a general direction or course of development

B **blue baby**: a baby whose skin is blue when it is born because there is something wrong with its heart
chronic: lasting a long time

D **defective blood supply**: faulty (here, insufficient) supply of blood
ham: preserved meat from a pig's leg
bacon: salted or smoked meat from the back or sides of a pig

Check Your Progress 1

1. State the main idea of the passage. Write it as a title for the passage.

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2. The purpose in reading the passage was to find out details of the four types of heart disease in terms of their causes and symptoms. Which paragraphs do you think are unimportant for this purpose?

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3. Were they unimportant because

   i) they did not contain the information you wanted, or
   ii) the same information was repeated again and again?

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4. Write a summary of the passage in the form of points keeping in mind the purpose stated.

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8.3 SPECIMEN NOTES

Compare your account of the 4 types of heart disease (Question 3 of Exercise 1) with the notes given below:

Notes (1)
Types of Heart Disease: their Causes and Symptons

1 Congenital heart disease		(h.d.) present at birth, e.g., blue baby
2 Rheumatic h.d.	←	(caused by) untreated infection of throat; symptoms -- chronic sore throat, painful joints, and high fever, widespread in develop^{g} countries ⊖ overcrowd^{g} + poor living conditions accounts for 30 - 40% of all heart cases.
3 Hypertensive h.d. = degenerative h.d.	←	High blood pressure ← stress, smoking + higher salt intake in diet
4 Ischaemic h.d.	←	Blockage of arteries by cholesterol → angina, heart attacks

You will notice that the sentences and some of the words have been reduced, and certain symbols and abbreviations used. We give below a list of these reduction devices, which you can use while taking notes yourself.

8.4 REDUCTION DEVICES

Reduction devices are an important technique in note-taking. They help you save time when you are noting down something from a book. They are particularly useful when you are taking down notes from a lecture, because otherwise it will be difficult to keep pace with the speaker. Since notes do not contain repetitive and unnecessary information, reduction devices help to give a more organized picture of what the writer/speaker is saying.

You can use symbols (lines, arrows, etc.) instead of words.

a) Arrows

Look at this passage from the text:

Blockage of arteries leads to defective blood supply to the heart. This results in the well known symptom of pain on emotional or physical stress called angina.

In the notes we can write:

Blockage of arteries → def. blood supply →angina

An arrow can also mean 'change into', 'causes', 'contributes to' etc.

An arrow in the reverse direction (←) means 'is attributed to', 'is caused by' as in the following example:

'Rheumatic heart disease is caused by an infection of the throat which is not treated.'

Rheumatic h.d.←untreated throat infection

An arrow with two heads (↔) can mean 'related to'.

b) Underlining is used to show what is important.

c) Mathematical symbols.
i) Figures instead of words for numbers (26 instead of 'twenty-six', for example)
ii) 'the same as' becomes =
iii) 'not the same as' becomes ≠
iv) 'is more than' becomes <
v) 'is less than' becomes >
vi) 'therefore' becomes ∴
vii) 'because' becomes ⊖

2. You can use abbreviation (a few letters instead of the whole word)

a) Units of measurement:
i) second - sec.
ii) Minute - min.
iii) Hour - hr.
iv) year - yr.
v) month - mth.
vi) meter - m.
vii) Kilogram - kg.

b) Useful abbreviations for words and phrases:

i) and so on - etc.
ii) compare - cf.
iii) that is - i.e.
iv) for example - e.g.
v) about, approximately - ca
vi) twentieth century – (20

c) Shortening -tion or -sion at the end of a word e.g.

i) reaction - react$^{n.}$
ii) conclusion - conclus$^{n.}$

You can usually shorten words by omitting or shortening the ending or suffix, and putting a full-stop to show that something has been omitted. There are some words which are shortened in a standard way and others which you will have to shorten yourself on the pattern of the common words. Here are some example of abbreviations of words taken from Example 1 which follow the pattern shown above.

developing	devlop^{g}
emotional	emot$^{nl.}$
defective	efect$^{ve.}$
important	import$^{nt.}$

d) Shortening long words or phrases for which there is no symbol or abbreviation or even a pattern that can be followed. Here are some examples from the passage that you have read.

disease	- dis.
heart disease	- h.d
blood pressure	- b.p.
cholesterol	- cholest$^{l.}$

Shortening of words as in (c) and (d) is probably more useful when you take down notes during a lecture, as it is difficult to keep pace otherwise.

Here it doesn't really matter what system you use, as long as you can understand your own notes when you return to them after some time. It may be a good idea when adopting your own abbreviations to write a word or a phrase in full with your abbreviation after it the first time it occurs, e.g., heart disease (h.d)

The lists of symbols and abbreviations given here and the suggestions for shortening words and phrases are not, of course complete and exhaustive. These are mere suggestions, which will enable you to use these abbreviations and symbols whenever you have to take down notes.

Check Your Progress 2

Shorten the following sentence, but do not shorten them so much that you may not understand your notes later.

1. At about the age of four, the school life of a child begins.

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2. For example, water covers seventy one per cent of the earth's surface.

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3. Heart disease causes half a million deaths a year in the United States of America.

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4. Two important diseases caused by the deficiency of Vitamin A are Xerophthalmia and night blindness.

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5. Road conditions also contribute to higher fuel consumption and this increases pollution.

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Glossary

deficiency: shortage
Xerophthalmia: a disease of the eye, characterised by the failure of the functioning of the tear glands
night blindness: inability to see things at night or in week light.

8.5 PASSAGE FOR NOTE-TAKING

Now read the following passage. Your purpose will be to discover the different theories of aging. Once again, only some paragraphs in the passage will be useful to you.

Example 2

A. The average life span differs very widely for different organisms. While some live for short periods, others may have a life of several decades or even centuries. None, however, lives forever. Even if an individual meets with no fatal accident, is not eaten up by a predator, or does not suffer a killing disease, death still comes as the natural final result of old age.

B. Aging is defined as the process of progressive deterioration in the structure and function of the cells, tissues and organs of the organism as it grows older. The area of developmental biology which is concerned with the study of the processes of aging is known as gerontology.

C. Why should an animal age at all? Why do some animals age more rapidly and have a shorter life span than others? Why do different cell types and tissues within the same individual age at different rates? We still do not know enough about the process and causes of aging, although many theories have been proposed to explain this phenomenon.

D. Some biologists suggest that adverse changes in the environment are the causes of aging in the organisms. Others believe that aging is an intrinsic genetic property of the cells of an organism. According to a compromise theory, aging is due to an interaction between hereditary factors (genes) and the environment. We know for example, that domestication of animals increases their life span. Another theory proposes that the cells organisms with a high rate of metabolism age more rapidly and die sooner than those with a relatively lower rate of metabolic activity.

E. A more recently proposed immunity theory of aging suggests that the decline and disappearance of the thymus gland by late middle age in man is the primary cause of aging. With the disappearance of this gland, the defenses of the body against foreign invasion weaken, and, at the same time, the number of defective, abnormal and harmful cells produced in the body itself goes up. This results in increasing damage and destruction of the tissues.

F. While each theory of aging is supported by some evidence, none of them comprehensively explains this phenomenon. A theory which explains aging in all kinds of organisms can be formulated only when more facts are known about aging processes in a variety of species living under different conditions.

(Adapted from *Biology: a textbook for Higher Secondary Schools*. Classes XI-XII. NCERT).

Glossary

A **organisms**: living beings
decade: a period of ten years
fatal: resulting in death
predators: wild animals who live by killing and eating other animals

B **deterioration**: becoming worse
cell: the smallest division of living matter able to act independently

tissue: animal or plant cells, especially those that are like in form and purpose and make up a particular organ, e.g. lung tissue, leaf tissue
biology: the scientific study of living things

D **adverse**: unfavorable
intrinsic: being part of the nature or character of someone or something.
genes: small parts of the material which makes up the center of a cell. Each of these parts controls the development of one or more qualities in a living thing which have been passed on from its parents.
compromise theory: a middle position which takes something from both the competing theories
hereditary: passed down from parent to child
metabolism : the chemical activities in a living being by which it gains energy, especially from food

E **decline**: moving to a worse condition
thymus gland: a gland which is located near the breast bone
gland: an organ of the body which produces a liquid substance, either to be poured out of the body or into the blood stream

F **comprehensively**: thoroughly: including everything

Check Your Progress 3

Read the passage again and fill in the blanks to complete the following notes.

Notes (2)
Theories of Aging

1. adverse changes in envt
2. Intrinsic.....(i).....
3. .....(ii).....+ envt[l] factors
   e.g. ..... (iii).....
4. .....(iv).....metabolic activity → aging
5. immunity theory ..... (v).....disappear[ce] of
   ..... (vi).....in late middle age in man .....
   vii ..... attack..... (viii) ..... + greater product
   of..... (ix).....(x) .....

You will notice that besides using symbols and abbreviations we have also omitted words like the, a and the verb(are is, was, were, etc.). In note-taking such omissions are quite common, because we want to save time. However, in normal writing you must not use any of these shortening devices.

8.6 READINGS AND SUBORDINATE POINTS

When the information content is small and not particularly well-organized our notes may contain just a few phrases. However, when we study, our information content is often large and organized around a topic. In such a situation, it makes our notes clearer, if we have **headings** and **subordinates** points. For example, look at Notes (I) again.

Heading: **Types of Heart Disease – Their Causes & Symtoms**

Subordinate points
1) Congenital h.d.
2) Rheumatic h.d.
3) Hypertensive h.d.
4) Ischaemic h.d.

It is perhaps helpful to follow a pattern where

a) the heading is underlined or in bold.

b) the subordinate points are placed under the heading and indented, that is, the lines are started further into the page than the line for the heading. This shows that they are dependent on the main topic. The

subordinate points are directly under each other. This shows they are of approximately the same importance.

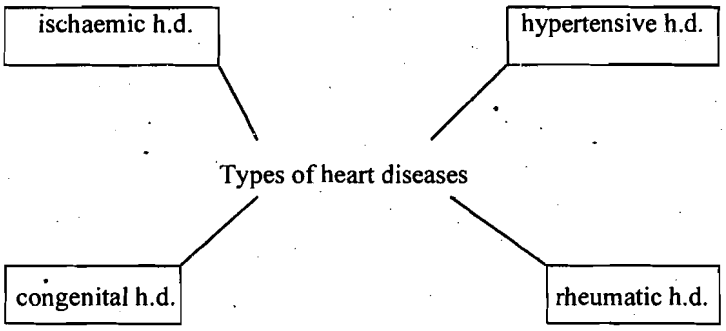
Two Types of Subordinate Points

There are generally two types of subordinate points.

a) Those that are independent of each other. depending only on the heading: for example, see Notes (1) and (2).

b) Those that are related to each other, only the first depending directly on the heading.

If you look at Notes (1) again in Section 3, you will notice that the subordinate points can be reordered (e.g.4 before 3 before 2, etc). In fact, they can also be arranged like this.



These sub-points are all directly dependent on the heading but independent of each other.

Now read the passage given below. Here the arrangement of the sub-points is different than that of examples 1 and 2.

Example 3

Read the following paragraph on the formation of coal.

The process of formation of coal is thought to have begun over 250 million years ago. At that time much of the world was covered with luxuriate vegetation growing in swamps. Many of these plants were types of ferns, some as large as trees. When this vegetation died, it sank into the muddy water, where it gradually decomposed. As decomposition took place, the vegetable matter lost oxygen and hydrogen atoms, leaving a deposit with a high percentage of carbon. In this way peat bogs were formed. As time passed, layers of sand and mud settled from the water over some of the peat deposits. The pressure of these overlying layers, as well as movements of the earth's crust and sometimes volcanic heat, acted to compress and harden the deposits and raise the carbon content in them, thus producing coal.

(from Funk and Wagnall's *New Encyclopaedia*)

Glossary

luxuriant: growing in plenty.
vegetation: plant life in general
swamp: soft wet land
fern: a type of green plant with feathery shaped leaves and no flowers
decomposed : decayed: broken up and separated into simple parts
peat: partly decayed vegetable matter which takes the place of ordinary soil in a certain area (peat bog)and is used for burning instead of coal
overlying layers: layers lying over something else, here layers of sand and mud lying over peat deposits
compress: force into less space: press together

Check Your Progress 4

Read the passage carefully and take notes from it, keeping in mind the heading and the subordinate points. Some help is provided for you. Note how the relationship of the subordinate points here is different from that in Notes (2)

Notes (3)

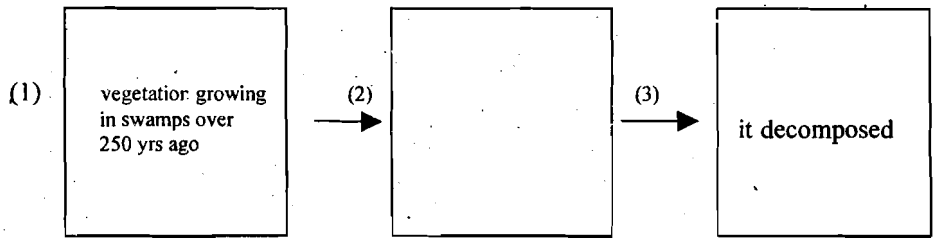
(heading).....(i).....

1. vegetation growing in swamps (over 250m. yrs ago)
2. ..... (ii).....
3. it decomposed
4. decomposition →.....(iii).....
5. peat bogs formed
6. .....(iv).....
7. .....(v).....

Check your answers with those given by us at the end of the unit.

In notes (3) the sub-points are again arranged vertically, but they cannot be reordered, because each point leads to another. To show clearly that one point leads to another, they can be arranged horizontally, like this,

Formation of Coal



It is useful to know whether the subordinate points in a text are dependent or independent of each other. This will help you read with greater understanding. Subordinate points that are independent of each other need not all, be noted. If one or more is omitted, it will not affect the rest. Subordinate points that are dependent on each other must all be noted.

8.7 ORGANISATION OF NOTES INTO TABLES

We often have to takes notes from passages which contain figures, contrasting information, or different aspects of a single topic. It is then convenient to organise your notes in the form of lists or tables. This will make it easier to read and memorise the information later.

8.7.1 A Passage Giving Information in the Form of Figures

Example 4

Your purpose in reading the following passage will be to find out the quantity of the different varieties of cooking oil used in the country and the regions where different kinds of oil are used.

> Edible oils are an important constituent of Indian diet. Besides being a source of energy, they add a special flavour to food and provide a lubricating action to body tissues. In recent years, their

association with different human diseases and their adulteration have become a health problem for people.

A variety of cooking oils are commonly used in different parts of the country. The major sources are groundnut oil (14,00,000 tonnes), mustard oil (6,00,000 tonnes) and sesame and coconut oil (1,50,000 tonnes). Sunflower oil (1,00,000 tonnes) safflower oil (25,000 tonnes) and soyabean oil (10,000 tonnes) have also become popular. Groundnut and sesame oils are common in the west coast and central India; coconut oil in the south; mustard oil in Bengal, Bihar and Orissa in the east and Kashmir in the north. The annual per capita consumption of edible oils in the country was about 6 kg in 1984, which is lower than the world average of 11 kg and the average of 26 kg in developed countries. It is higher in the high socio-economic status group due to their use of fried preparations. It is however desirable that the daily intake of fat should not contribute more than 15-20 percent calories in the diet.

(From *Science Reporter*, September 1987)

Glossary

edible: fit to be eaten
constituent: any of the parts that make up a whole
lubricating: making smooth (generally with oil), so that, in this case, the tissues of the body can function more easily
adulteration: the act of making something impure or of a poorer quality by the addition of something of lower quality
per capita: for or by each person. Here it refers to the average consumption of oil by one person
intake: the amount taken in
calorie: a measure used to state the amount of heat or energy that a food will produce.

Check Your Progress 5

The passage above has a lot of figures. These figures can be understood better if they are arranged in a table as shown below. Read the passage carefully again, and fill in the gaps in the table. Do not forget to write the main heading and the subordinate headings where required.

Notes :4

	Name of Oil		Regions where used
1	Groundnut oil	.....	.....
2	.....	6.00.000 tonnes	.....
3	Sesame oil	.....	west coast & central India
4	Coconut oil	.....	.....
5	.....	.....	.....
6	.....	.....	.....
7	.....	10.000 tonnes	.....

8.7.2 A Passage giving a Contrastive Description

When you have to take notes from a passage which points out the differences between two things, it is often most convenient to write the notes in the form of a table.

Example 5

Read the following passage carefully and take down notes while you read it:

The two main kinds of grasslands are tropical grasslands and temperate grasslands. Tropical grasslands occur in Africa (the Savanna) and in parts of south-eastern Asia, northern Australia, India and South America. The major temperate grasslands are the North American prairies, the Russian steppes, the South African veld, the Australian and New Zealand downs and the South American pampas.

Most tropical grasslands lie between forests and semi-deserts. The annual rainfall, although confined to one season, is usually high. Savanna grasslands are dotted with such trees as acacia and baobab. In moist areas elephant grass may reach five meters but towards the deserts it becomes increasingly shorter.

Temperate grasslands have less rainfall than tropical grasslands, and winters that are often extremely cold and snowy. Trees are rare. Very little of true temperate grassland survives. Much is now farmland.

The major herbivores found in temperate grasslands are prong-horn, rodents and rabbits. Coyotes, badgers and snakes are also present and depend on the rodent population for food. However, herbivores such as bison, prairie chickens and prairie dogs, as well as predatory wolves and mountain lions have become almost extinct and their range is greatly restricted. The occupation of the prairies and plains by greater numbers of people and the domestic livestock has reduced the number and extent of native animals.

Wild life has been left relatively undisturbed in the tropical grasslands. Wildebeests, zebras, gazelles, along with predatory lions, hyenas, cheetahs, leopards and other carnivores, share the plains with numerous species of birds, rodents and insects.
(Adapted from Caxton *Atlas of the Earth*)

Glossary

grassland: a stretch of land covered mainly with grass, especially wild land used for cattle to feed on
confined: limited
acacia: a type of tree found mainly in hot countries, from which gum is obtained.
baobab: a type of African tree with a very broad trunk
herbivores: animals feeding on plants
prong-horn: a type of antelope found in western North America
rodent: a member of the family of small plant-eating animals with strong sharp teeth, which includes rats and mice
coyote: a type of small wolf found in western North America and Mexico
badger: an animal found in the northern half of the world, which is black and has some white fur on its face, lives in a hole in the ground, and is active at night
bison: large, wild, cow-like animal with a very large head and shoulders covered with lots of hair, formerly very common in Europe and North America.
extinct: no longer existing
livestock: animals kept on a farm
wildebeest: a type of large South African antelope with curved horns and a long tail
gazelle: a type of small deer, which jumps in graceful movements, and has beautiful, large eyes
carnivore: a flesh-eating animal

Passages which give a contrastive description can most clearly be presented if they are arranged in the form of a table. It is, however, not enough that two items are contrasted - in this case the tropical and temperate grasslands. You should arrange your table in such a way that at a glance you are able to find below, the basis on which the contrast is made. For in the case of Notes 5 below, contrast is on the basis of location, rainfall, vegetation and animals. This method of organisation helps you to present a clearer picture of the information, which will be useful to you when you have to revise your work later.

Check Your Progress 6

Read Example 5 again and fill in the gaps in the table below.

Notes : 5
Types of Grassland

		Tropical	**Temperate**
1	Location	(i)	N. America (prairies). Russia (steppes). S. Africa (veld) Australia and New Zealand (downs), and S. America (pampas)
2	Rainfall	high: occurs in one season	(ii)
3	Vegetation	(iii)	(iv)
4	Animals	wild life undisturbed; wildebeests, gazelles, zebras, lions, hyenas, cheetahs, and leopards; birds, rodents insects	(v)

Notice that we have arranged the notes in the same order in which the information is presented in the passage given as Example 5. It is however, not necessary to do this. Often you may have to arrange the notes in an order different from what it is in the original text. This will probably happen if you wish to highlight some points.

Check Your Progress 7

The notes are given below in the form of a table. These notes show you the contrast between no types of ancient man. i.e. Neanderthal and Cro-Magnonmen. Write them up in the form of a passage of about 150 words. The first paragraph of the passage is given to you.

Notes : 6
Neanderthal and Cro-Magnon Man

	Neanderthal	**Cro-Magnon**
Body Structure	Brain large as man; unusually large skull; massive jaw; large front teeth; short, ca. 1 1/2 m	Like mod^{n} man; prominent chin; high-bridged nose; small even teeth; taller than Neand$^{l.}$ man
Food Habits	Eats flesh of animals hunted + killed; wild fruit	Hunter; later cultiv^{d} + raised crops and animals
Art	Crude drawings of tools + animals	1st fine artist in the world; several cave paintings, stone engravings + carved figs; attempt^{d} to create his daily life thro' art

The two forerunners of modern man, bearing several human features, were the Neanderthal and the Cro-Magnon men. While the former suddenly disappeared, the latter evolved into modern man.

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8.8 ORGANISATION OF NOTES INTO DIAGRAMS

When the information in a paragraph can be presented visually, it is better to use a drawing, a flow chart, or a tree diagram. This is especially true of scientific material, where it is simpler and clearer to express information in the form of a labelled diagram than by using words only. The diagram should present a mental picture of what you understand from the paragraph. This will make it easier for you to understand the information given in the paragraph.

Example 6

Your purpose in reading the passage below will be to learn about the process of photosynthesis. Take notes as you read.

Photosynthesis is the process by which chlorophyll-containing organisms–green plants and algae–capture energy in the form of light and convert it to chemical energy. Almost all the energy available for life in the earth's biosphere–the zone in which life can exist – is made available through photosynthesis

In the first stage of photosynthesis, chlorophyll absorbs sunlight. Chlorophyll is the green substance in leaves, which is able to trap the energy of sunlight and use it in the process of making carbohydrates.

Within the leaf there is a small amount of water. The energy which the chlorophyll has trapped of the sun is used to split the water in the leaf into hydrogen and oxygen. Most of the oxygen is released into the air.

In the second stage, the chlorophyll uses the energy absorbed from sunlight to combine the hydrogen (which is obtained by splitting the water) with carbon dioxide (which the leaf obtained from the air). Then, after several complicated changes, the hydrogen and the carbon dioxide are combined in such a way that a carbohydrate is produced. This carbohydrate is called glucose.

Later, using glucose as its most important building material the plant can make substances called amino acids and proteins. These chemicals are needed for the growth of both plants and animals.

Something else happens during photosynthesis that is of the greatest importance to us. A constant supply of oxygen is released into the air by plants. At the same time, carbon dioxide, which would poison us if we breathed too much of it, is nearly all used up.

Photosynthesis is one of the most important chemical processes in the world. This is because it is the primary method of food manufacture, and the primary method of oxygen manufacture

(Adapted from Funk and Wagnall's *New Encyclopaedia and* Donald Dallas's *Read to Understand*)

Check Your Progress 8

On the basis of the notes you have taken while reading the passage, answer the following questions.

1. In the first stage of photosynthesis
   i) sunlight causes chlorophyll to turn into carbohydrates.
   ii) sunlight causes chlorophyll to split water.
   iii) chlorophyll absorbs the energy of the sun and uses it to produce carbohydrates.
   (choose the correct answer.)

2. Fill in the gaps with the words that seem most appropriate to you.

   In the second stage of photosynthesis, the_____(i)_____absorbed from _____(ii)_____is used to combine _____(iii) ___with carbon dioxide. Then, after some complicated changes a _____(iv)____called_____ (v), _____is produced. Later, using____(vi)_____ as the its most important building material, the plant can make substances called ____(vii) ____ and _____ (viii)_____.

3. If the process of photosynthesis stopped, what would happen to animals and human beings? Why?

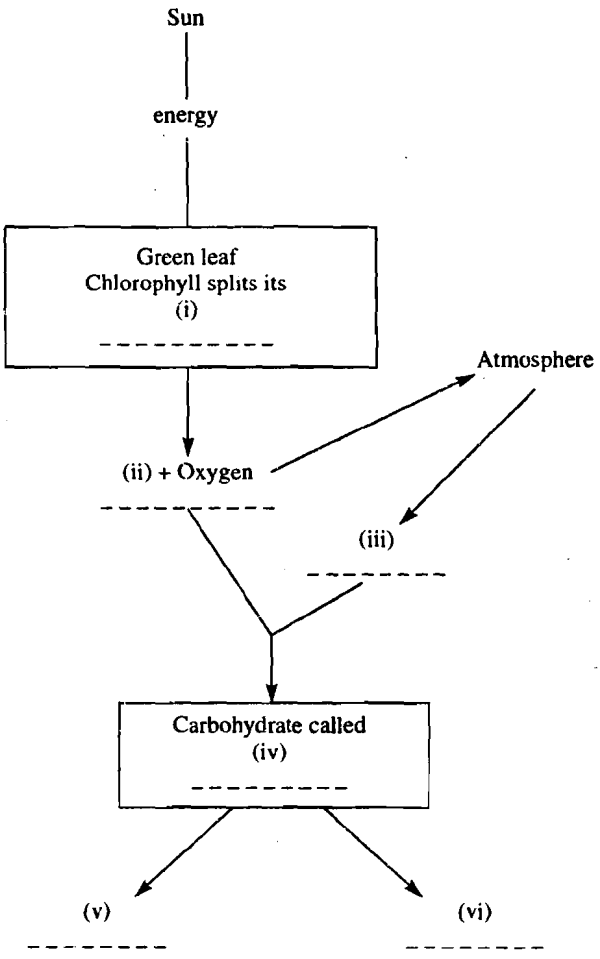
.....

.....

.....

.....

Notes 7: Below present the information taken from Example 6 in the form of a flow chart, Preparing a flow chart, especially for descriptions of processes, will help you to understand the texts. Later, when you are revising your work, it will be easier to recollect the information if it is available in a visual form. Fill in the gaps in the flow chart below:



8.8.2 Tree Diagrams

You already know that different kinds of passage lend themselves to different kinds of organisation when we take notes. Passages that have information of a classificatory nature, for instance, can be analysed by means of tree diagrams. Such diagrams are useful both in classifying the information, and presenting it in the right order.

The passage below deals with different modes of transport and their role in commerce. Read it carefully and take down notes as you read.

Example 7

The Role of Transport in Commerce

The economic system of any country is largely dependent upon the efficiency of its transport system. Without the help of a good transport system, the expansion in national and international trade would never take place.

Broadly, the means of transport both for purposes of trade and social activity can be classified into three main divisions, land, water and air. We are, here, concerned with transport for trade. Of all the forms of transport, road transport has shown the greatest growth in recent years. Road transport is also used as a complementary means of transport for other types of transport. Roads are indispensable links for carrying goods and people to and from railway stations, ports and airports.

Transport by road may be both vehicular and non-vehicular. Non-vehicular transportation includes both animal and man. Animals such as horses, mules and yaks are frequently used for carrying goods and passengers in hilly areas. Camel is the only means of transport in desert areas. Man is also sometimes used to carry goods. In hilly areas, porters and coolies carry goods on their backs and heads. This type of transport is generally used when animals, carts or vehicles cannot be used. Vehicular transport in developing countries includes the ancient bullock carts, as well as the modern automobiles. The invention of the automobiles has been of great significance to modern industry and commerce because of their high speed and low cost per kilometer.

The introduction of the railways has been vital in the growth of industrialisation. Railways are useful in carrying heavy and bulky goods over long distances. They are especially favoured because, unlike other modes of transport, they are unaffected by weather conditions.

Water transport is one of the oldest forms of cargo transport. Though it is slow, it is the cheapest form of transport. Water transport includes inland transport and ocean transport. Inland waterways are rivers and canals. While rivers are "naturally" created, canals are artificial waterways. Inland waterways are not always reliable. Sometimes rivers change their course abruptly, which may cause dislocation of traffic. In times of drought they may run dry.

Ocean or sea transport is very important for the growth of foreign trade of any country, especially as it is cheaper than air transport. It is particularly useful for carrying bulky goods over long distances, specially when time is not the essential factor.

The greatest advantage of air transport is that it has reduced the time and distance barrier to a great extent. However, air transport is the costliest means of transport because of the high cost of planes, their operation and maintenance. It is generally used rather sparingly for carrying light freight.

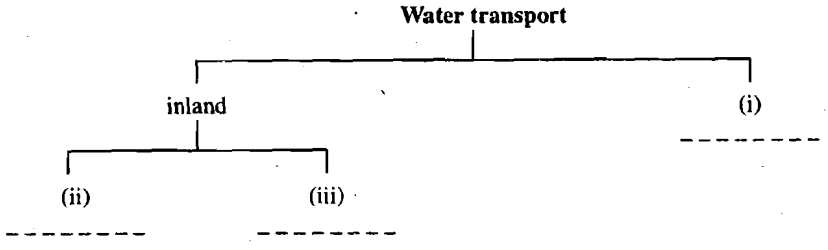
Glossary

Complementary: supplying what is lacking or needed by another completion
indispensable: absolutely necessary: essential; what we cannot do without
port: a town or place along the sea, which has facilities for the loading and unloading of ships
yak: an ox of Tibet having long, shaggy hair
vital: very necessary
abruptly: suddenly and unexpectedly
drought: a long period of very little rainfall

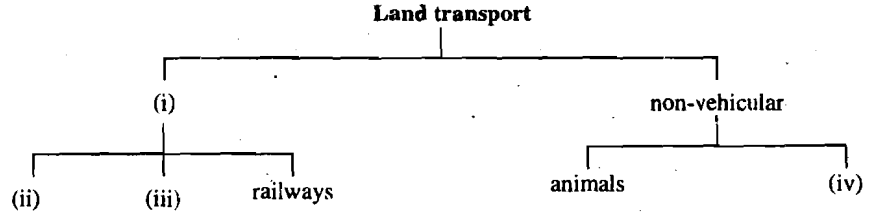
Check Your Progress 10

1. Fill in the gaps below:
   ----------(i)----------is one of the oldest forms of transport. It is also.-------(ii)----------than any other means of transport. Water transport includes both----------(iii)---------and---------- (iv)---------- transport.

2. Now organise the information in the gaps in the form of a tree diagram. Some help is provided for you.



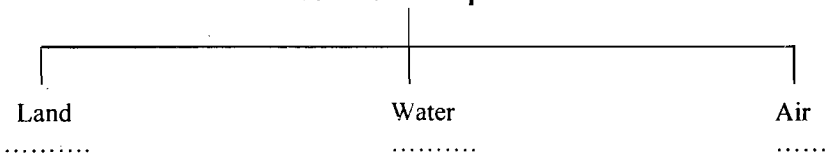
3. Read the information concerning road transport again and complete the tree diagram below.



4. Notes 8 below (based on example 7) are organised into a tree diagram. Complete the tree diagram.

Notes : 8

Means of Transport



8.9 LET US SUM UP

In this unit we discussed some of the devices that would help you take notes. These include (a) shortening devices that would help you save time and condense your material, (b) a proper organisation of the ideas contained in a text in terms of main points and subordinate points, (c) organisation of notes into tables, flow charts and tree diagrams.

8.10 KEY WORDS

condense: put into fewer words
congenital: present from birth
heading: words at the top of a section of written matter
note: a short record made to help the memory
specimen: an example of a class
subordinate: less important
symbol: a sign looked upon as representing something
symptom: a change in the body's condition that indicates illness.

8.11 MODEL ANSWERS

Check Your Progress 1

1. Types of Heart Disease: their Causes and Symptoms
2. Paragraphs A and E.
3. (i) for both A and E

Check Your Progress 2

1. At 4 child begins school.
2. e.g. water covers 71% of earth's surface.
3. Heart dis. → 1/2 m. deaths p.a. in U.S.
4. defc^{y} of Vit. A → Xerophthalmia
   defc^{y} of Vit. A → Night blindness
5. Road conditions → higher fuel consump$^{n.}$ → more pollution

Check Your Progress 3

i) genetic property of cells
ii) hereditary
iii) domestication of animals increases life span
iv) higher
v) suggests
vi) thymus gland
vii) foreign invaders
viii) body
ix) defective, abnormal cells in body
x) damage to tissues

Check Your Progress 4

i) Formation of Coal
ii) when it died, it sank in muddy water
iii) loss of O+H atoms in veg. matter → high % of C.
iv) sand + mud settled on peat.
v) Pressure of overlying layers + movements of earth's crust + volcanic heat→compress^{n} and harden^{g} of deposits + more C →coal

Check Your Progress 5

Notes : 4
Edible Oils

	Name of Oil	Quantity	Regions where used
1.	Groundnut oil	14,00,000 tonnes	West coast & Central India
2.	Mustard oil	6,00,000 tonnes	Bengal, Bihar, Orissa, Kashmir
3.	Sesame oil	1,50,000 tonnes	West Coast, Central & Southern India
4.	Coconut oil	1,50,000 tonnes	West Coast, Central & Southern India
5.	Sunflower oil	1,00,000 tonnes	Information not available
6.	Safflower oil	25,000 tonnes	Information not available
7.	Soyabean oil	10,000 tonnes	Information not available

Check Your Progress 6

i) Africa, parts of S.E. Asia, N. Australia, India and S. America
ii) less, (winters cold and snowy)
iii) acacia & baobab trees -- esp, in Savannas; elephant grass
iv) trees rare; not much grassland now -- mostly turned into farmland
v) several animals now extinct.
Coyotes, badgers, snakes, pronghorns, rodents, and rabbits are the main animals found.

Check Your Progress 7

The two forerunners of modern man, bearing several human features, were the Neanderthal and Cro-Magnon men. While the former suddenly disappeared, the latter evolved into modern man.

With his prominent chin, high-bridged nose, and small, even teeth, the Cro-Magnon men could well be mistaken for a present-day human being. The Neanderthal man, however, was different in many ways. Although his brain was as large as modern man's, it was enclosed in an unusually large skull. The face was distinguished by a massive jaw with large front teeth, probably required for eating raw meat. The Neanderthal man was rather short, about one and a half metres in height.

With regard to eating habits, the Neanderthal man remained quite primitive. Since he was a skilled hunter, he ate the flesh of the animals he hunted and killed. The women gathered wild fruit, which also formed part of

their diet. The Cro-Magnon man was also a skilful hunter, but at a later stage cultivated his crops and even raised animals.

The Cro-Magnon man was the first fine artist in the world. There were several cave paintings, stone engravings and carved figures which bear this out. He attempted to create his daily life through his art. The Neanderthal man attempted this too, but his drawings of the tools he used and the animals he hunted were rather crude.

Check Your Progress 8

i) energy
ii) sunlight
iii) hydrogen
iv) carbohydrate
v) glucose
vi) glucose
vii) amino acids
viii) proteins

They would die, because there would be too little oxygen in the atmosphere.

Check Your Progress 9

i) water
ii) Hydrogen
iii) CO_2 (Carbon dioxide)
iv) glucose
v) amino acids
vi) proteins

Check Your Progress 10

1.
i) water transport
ii) cheaper
iii) inland
iv) ocean

2.
i) Ocean
ii) canals
iii) rivers

3.
i) vehicular
ii) bullock carts
iii) automobiles
iv) man