Chapter -6 Tissues

1. What is tissue?

Ans. It is a group of cells similar in origin and structure and they are specialized to perform a particular function like muscle cells in our body forms the muscle tissue that bring about body movements (specific function).

2. What is the utility of tissues in multi-cellular organisms?

Ans. There is a clear cut division of labour in multicellular organisms i.e. different parts of the body of a multicellular organism perform specific functions. For example, brain controls all other parts of body, heart pumps blood to all parts of body, kidneys remove waste materials from body, sense organs collect information from external sources for sensory perception etc. All these functions would never be possible without formation of tissues in multicellular organisms.

3. Name types of simple tissues.

Ans. The simple tissues (found in plants) are of following three types:

i) parenchyma **ii)**
collenchyma **iii)**
Sclerenchyma

4Where is apical meristem found?

Ans. The apical meristem is found at the apex (growing tips) of the stem and roots.

5. Which tissue makes up the husk of coconut?

Ans. Sclerenchymatous fibres

6. What are the constituents of phloem?

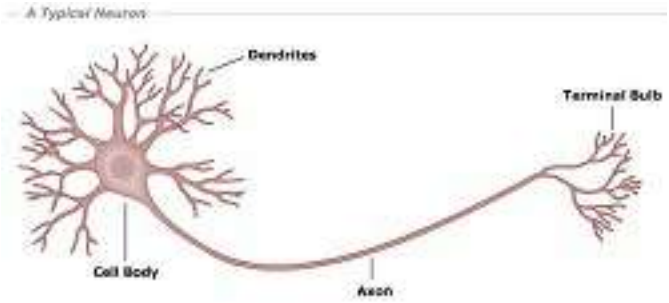
Ans. The constituents of phloem are: sieve tubes, companion cells, phloem parenchyma, phloem fibres (bast).

7. Name the tissue responsible for movement in our body.

Ans. Muscle/muscular tissue.

8 What does a neuron look like?

Ans. A neuron comprises of a cell body (cyton) along with one or more short branches(Dendron) and one hair like long branch (axon).



3. Give three features of cardiac muscles.

Ans. (i) Cardiac muscles are involuntary i.e. they don't work under our will.
(ii) Its cells are cylindrical, branched, striated and uninucleate.
(iii) It shows rhythmic contraction and relaxation throughout the person's life.

9. What are the functions of areolar tissue?

Ans. Areolar tissue is a kind of filler tissue found between skin and muscles, around our

blood vessels and nerve cells and also in the bone marrow. Its functions are therefore

i) To fill the space inside organs.

ii) To help in repair and maintenance of nearby tissues/organs.

iii) To support and prevent injuries to internal organs.

Chapter – end

1. Define the term "tissue".

Ans. It is a group of cells similar in origin and structure and they are specialized to perform a particular function like muscle cells in our body forms the muscle tissue that brings about body movements(specific function).

2. How many types of elements together make up the xylem tissue? Name them.

Ans. Xylem tissue is made up of following 4 types of elements:

i) Tracheids

ii) vessels

iii) Xylem fibres

iv) Xylem parenchyma

3. How are simple tissues different from complex tissues in plants?

Ans.

Simple tissue	Complex tissue
i) It is made up of only one type of cells. ii) All cells of this tissue work as individual units to perform a particular function. Eg. parenchyma, collenchyma and sclerenchyma tissues.	i) It is made up of more than one type of cells. ii) Cells of this tissue work together as one single unit to bring about a particular function. Eg. xylem and phloem tissues.

4. Differentiate between parenchyma, collenchyma and sclerenchyma on the basis of their cell wall.

Parenchyma	Collenchyma	Sclerenchyma
Cell wall is thin and made up of cellulose.	Cell wall is irregularly thickened at corners due to deposition of pectin.	Cell wall is very thick due to deposition of impermeable substance lignin.

5. What are the functions of the stomata?

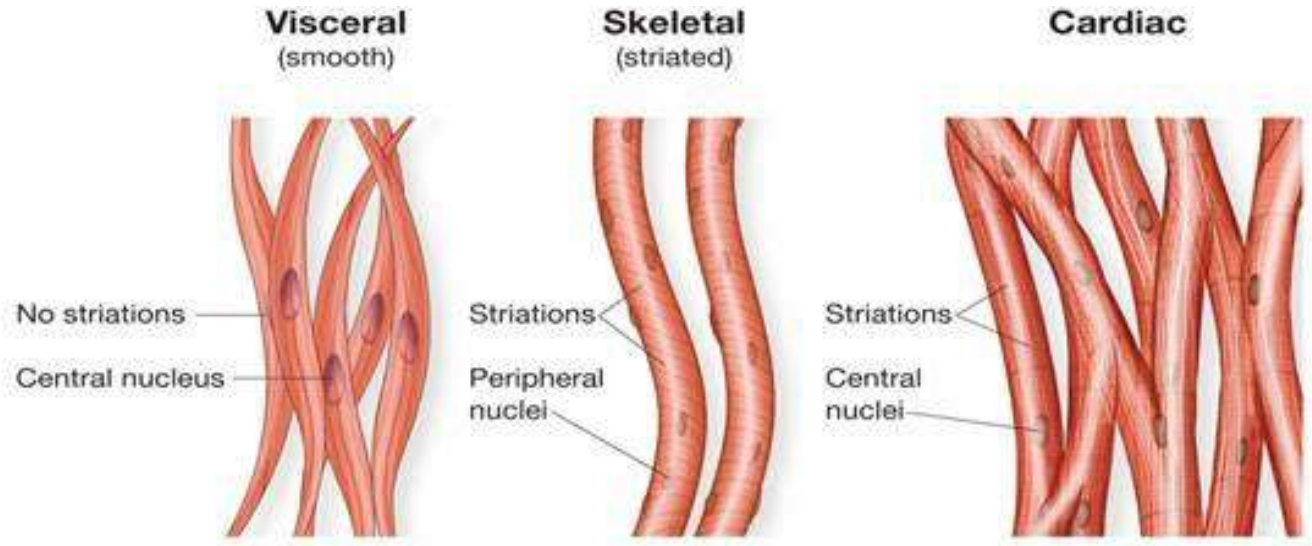
Ans. The functions of stomata are:

i) gaseous exchange like exchange of CO_2 and O_2.

ii) Process of transpiration i.e. loss of excess water in the form of water vapour occurs through stomata.

6. Diagrammatically show the difference between the three types of muscle fibres.

Ans.



Contracts	Slowly	Rapidly	Rapidly
Found	Viscera, blood vessels	Trunk, extremities, head and neck	Heart
Control	Involuntary	Voluntary	Involuntary

7. What is the specific function of the cardiac muscle?

Ans. Cardiac muscles are the muscles of heart that pumps blood to all parts of body and the pumping needs rhythmic contraction and relaxation of cardiac muscles throughout the life

.

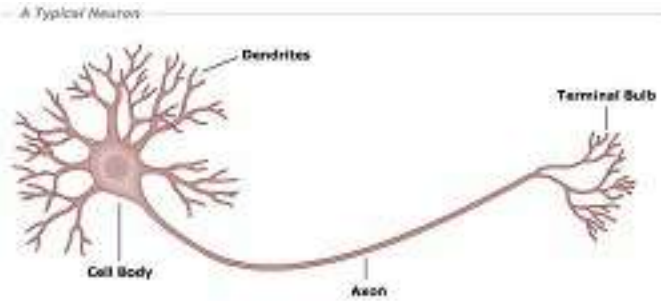
8. Differentiate between striated, unstriated and cardiac muscles on the basis of their structure and site/location in the body.

Ans.

Striated muscle	Unstriated muscle	Cardiac muscle
They show light and dark bands (striations) when we stain them. Their cells are elongated and cylindrical also unbranched. Cells are multinucleate.	They don't show any striations on staining. Their cells are long but spindle shaped and unbranched. Cells are uninucleate.	They show striations on staining. Their cells re cylindrical and branched. Cells are uninucleate.
They are responsible to bring about voluntary movements (like tongue, limbs etc)	They are involuntary in action (walls of tubular organs, blood vessels etc)	They are again involuntary in their function (contraction and relaxation of heart)

9. Draw a labelled diagram of a neuron.

Ans.



10. Name the following.

(a) Tissue that forms the inner lining of our mouth.

(b) Tissue that connects muscle to bone in humans.

(c) Tissue that transports food in plants.

(d) Tissue that stores fat in our body.

(e) Connective tissue with a fluid matrix.

.

Ans. (a) epithelial tissue

(b) tendons

(c) phloem

(d) adipose tissue

(e) blood

(f) nerve tissue

11. Identify the type of tissue in the following: skin, bark of tree, bone, lining of kidney tubule, vascular bundle.

Ans.

Skin	**Epithelial tissue**
Bark of tree	Sclerenchymatous tissue
Bone	Connective tissue
Lining of kidney tubule	Cuboidal epithelial tissue
Vascular bundle	Complex permanent tissue

12. Name the regions in which parenchyma tissue is present.

Ans. Parenchymatous tissue is present in the epidermis, cortex, pith of the stem, root, leaves, flowers and fruits of plants.

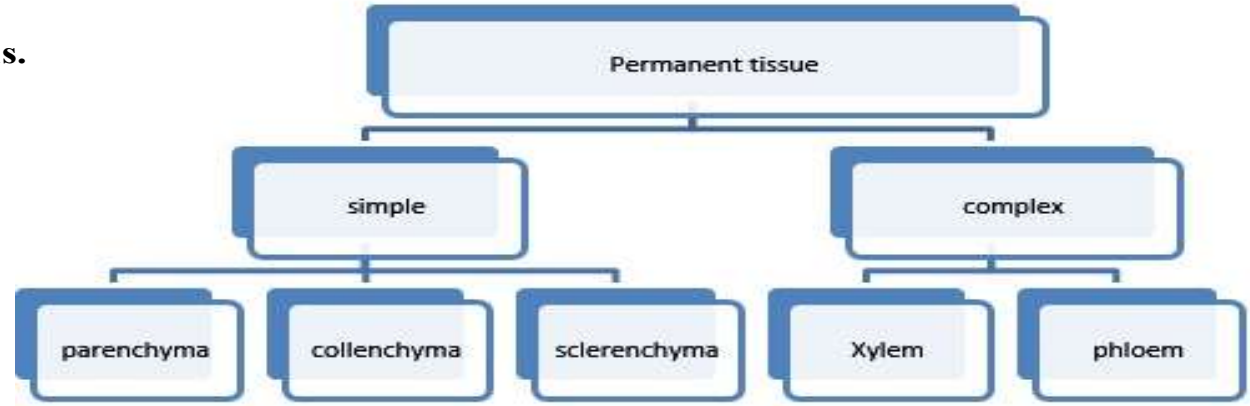
13. What is the role of epidermis in plants?

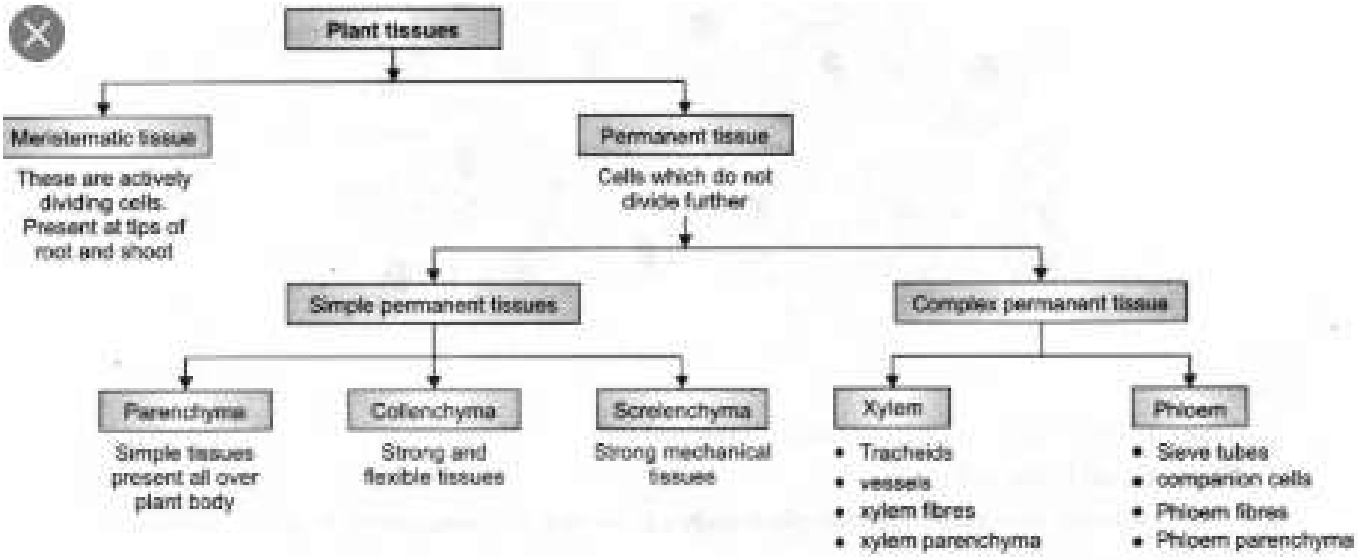
Ans. It is a protective layer to the plant parts. It can also absorb water from soil like in the roots and even allow exchange of gases through stomata. It also helps in preventing the entry of pathogens.

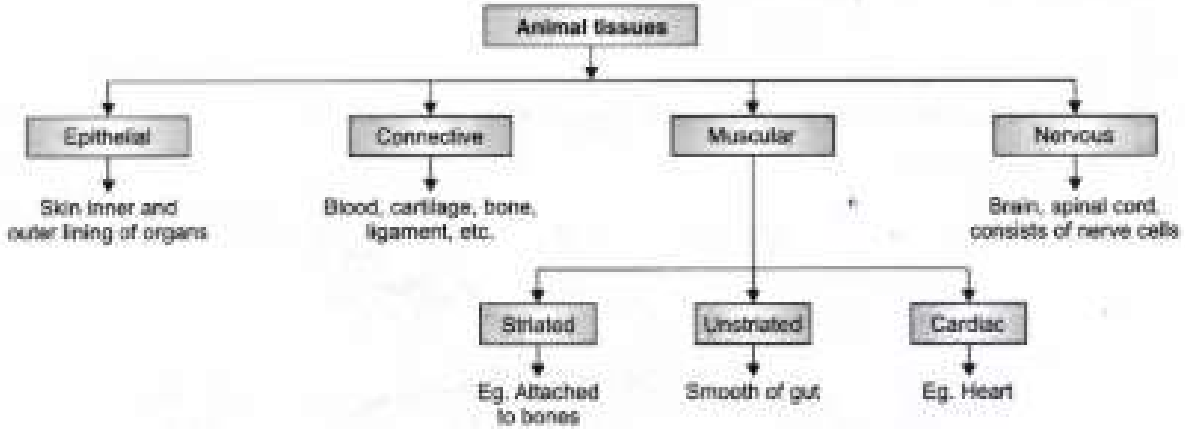
Ans. In plants the secondary meristem cuts off many external layers of cells that are dead and arranged in a compact manner. Such layers together make cork. They have deposition of suberin which is very hard and impermeable hence protects plants from unfavorable conditions and microbial attack etc.

15. Complete the table:

Ans.







Short Answer Questions

1. Animals of colder regions and fishes of cold water have thicker layer of subcutaneous fat. Describe why?

Ans. Fat acts as subcutaneous insulation of body for thermoregulation. The animals living in cold regions have various layers of fat so that the temperature of the body can be maintained and also because fats do not allow the internal heat to escape out of the body.

2 Match the column (A) with the column (B)

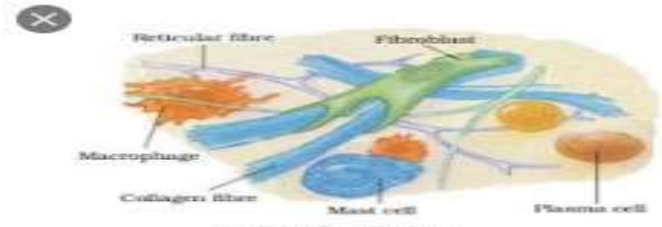
Column (A)	Column (B)
(a) Fluid connective tissue	(i) Subcutaneous layer
(b) Filling of space inside the organs	(ii) Cartilage
(c) Striated muscle	(iii) Skeletal muscle
(d) Adipose tissue	(iv) Areolar tissue
(e) Surface of joints	(v) Blood
(f) Stratified squamous epithelium	(vi) Skin

Ans. a—(v); b—(iv); c—(iii); d—(i); e—(ii); f—(vi);

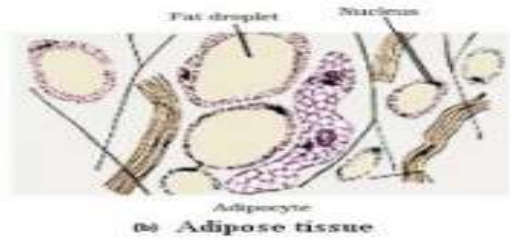
3. Match the column (A) with the column (B)

Column A	Column B
(a) Parenchyma	(i) Thin walled, packing cells
(b) Photosynthesis	(ii) Carbon fixation
(c) Aerenchyma	(iii) Localized thickenings
(d) Collenchyma	(iv) Buoyancy
(e) Permanent tissue	(v) Sclerenchyma

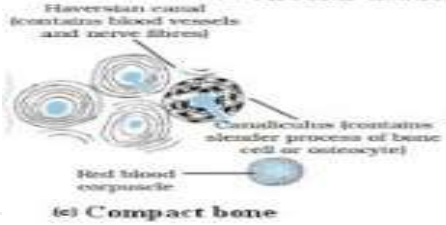
Ans. a—(i); b—(ii); c—(iv); d—(iii); e—(v);



(a) Areolar tissue

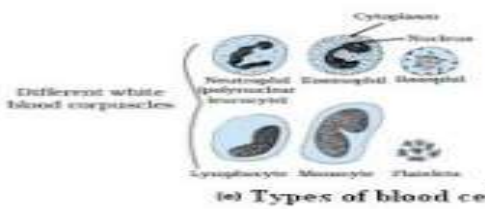


(b) Adipose tissue



(c) Compact bone

(d) Hyaline cartilage



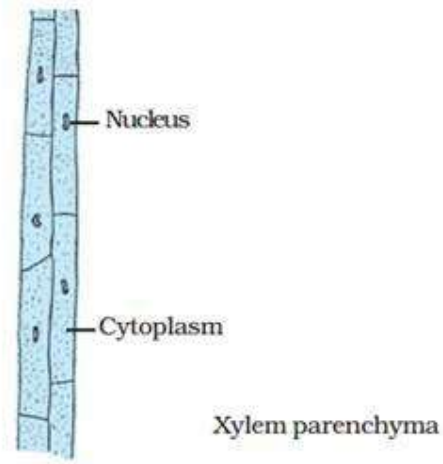
(e) Types of blood cells

5 If a potted plant is covered with a glass jar, water vapours appear on the wall of glass jar. Explain why?

Ans. Transpiration takes place through stomata. Water vapour comes out of leaves during transpiration. When a potted plant is covered with a glass jar, water vapour (coming out because of transpiration) condenses on the wall of glass jar and hence it appears as fine droplets.

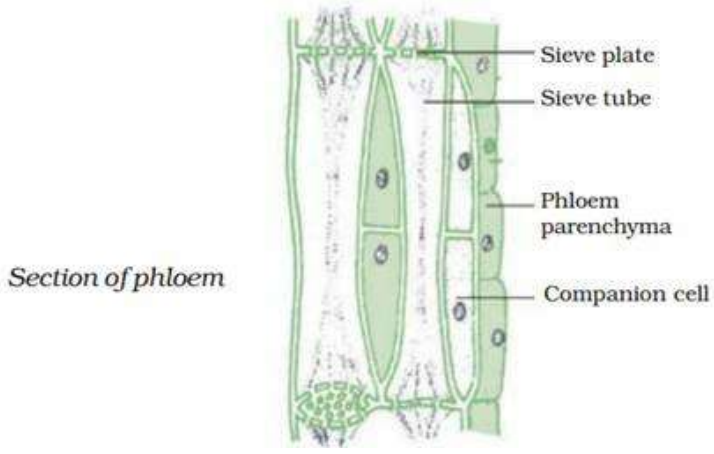
6. **Name the different components of xylem and draw a living component?**

Ans. Xylem consists of tracheids, vessels, xylem parenchyma and xylem fibres.



7. **Draw and identify different elements of phloem.**

Ans. Sieve tubes, companion cells, phloem fibres and phloem parenchyma.



8. Write true (T) or false (F)

(a) Epithelial tissue is protective tissue in animal body.

(b) The lining of blood vessels, lung alveoli and kidney tubules are all made up of epithelial tissue.

(c) Epithelial cells have a lot of intercellular spaces.

(d) Epithelial layer is permeable layer.

(e) Epithelial layer does not allow regulation of materials between body and external environment.

Ans. (a)—T, (b)—T, (c)—F, (d) —T, (e)—F

9. **Differentiate between voluntary and involuntary muscles. Give one example of each type.**

Ans.

Voluntary muscles	Involuntary muscles
(i) Their action is under our conscious control.	(i) Their action is not under our conscious control.
(ii) Cells are multinucleate.	(ii) Cells are uninucleate.
(iii) Example: Skeletal muscles	(iii) Example: Smooth muscle

10. Differentiate the following activities on the basis of voluntary (V) or involuntary (I V) muscles.

(a) Jumping of frog

(b) Pumping of the heart

(c) Writing with hand

(d) Movement of chocolate in your intestine

Ans. (a)—V, (b)—IV, (c)—V, (d) —IV

11. Fill in the blanks

(a) Lining of blood vessels is made up of _____.

Ans. squamous epithelium

(b) Lining of small intestine is made up of _____.

(c) Lining of kidney tubules is made up of _____.

Ans. cuboidal epithelium

(d) Epithelial cells with cilia are found in _____ of our body.

Ans. respiratory tract

12Water hyacinth float on water surface. Explain.

Ans. A special type of parenchyma; called aernchyma is present in water hyacinth. This tissue has air-filled spaces inside and because the air gets trapped inside especially in the stem part so it becomes buoyant. Due to this, water hyacinth floats on water surface.

13. **Which structure protects the plant body against the invasion of parasites?**

Ans. Epidermis having thick cuticle and dermal tissue to prevent the invasion of parasites and other harmful agents.

14Fill in the blanks

(a) Cork cells possesses _____ on their walls that makes it impervious to gases and water.
Ans. suberin

(b) _____ have tubular cells with perforated walls and are living in nature.
Ans. sieve tubes

(c) Bone possesses a hard matrix composed of _____ and _____.
Ans. calcium and phosphorus

15. Why is epidermis important for the plants?

Ans. Epidermis is important for plants due to the following reasons :

(i) it gives protection
(ii) helps in gaseous exchange
(iii) checks water loss
(iv) root hairs arising from epidermis helps in absorption of water and minerals.

(a) _____ are forms of complex tissue.

Ans. Xylem and phloem

(b) _____ have guard cells.

Ans. Stomata

(c) Cells of cork contain a chemical called _____.

Ans. Suberin

(d) Husk of coconut is made of _____ tissue.

Ans. Sclerenchyma

(e) _____ gives flexibility in plants.

Ans. Collenchyma

(f) _____ and _____ are both conducting tissues.

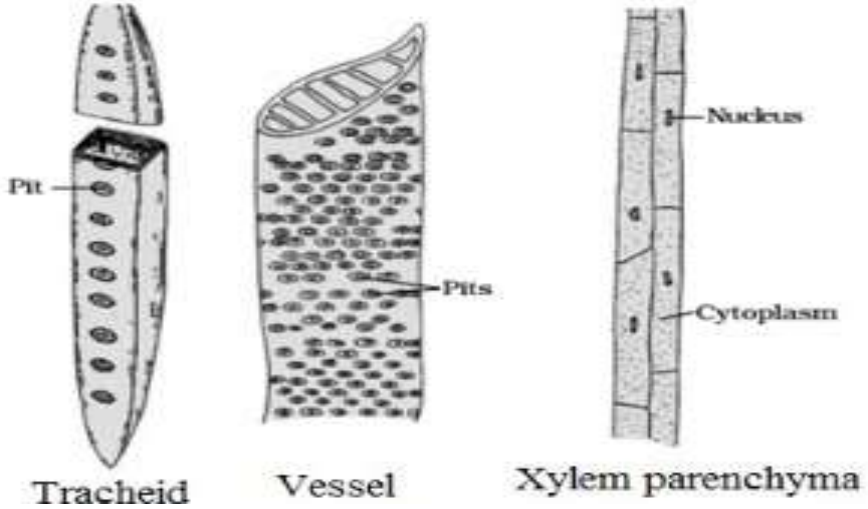
Ans. Xylem; phloem

(g) Xylem transports _____ and _____ from soil.

Ans. Water; minerals

(h) Phloem transport _____ from _____ to other parts of the plant.

Ans. food; leaves



Chapter 13 Why Do We Fall Ill ?

Terms to understand

1.**"Health"** is a state of being well enough to function well physically, mentally, and socially.

2.**"Disease"**(disturbed ease) means being uncomfortable. One or more systems of the body will change, give rise to "Symptoms" (Cough, loose motions, pus formation, headache, fever, breathlessness, vomiting, fits, unconsciousness, inflammation , swelling and general effects - a Doctor look for the basis of symptoms). Diseases are basically two types- Acute Disease & Chronic Disease.

3.**Acute Disease:** The disease which lasts for only a short period of time is called Acute Disease Ex. Common Cold.

4.**Chronic Disease**: The disease which lasts for long period of time is called Chronic Disease Ex. Tuberculosis.

Acute Disease	Chronic Disease
They are short duration disease	They are long lasting disease
Patient recovers completely after the cure	Patient does not recover completely
There is no loss of weight or feeling of tiredness afterward	There is often loss of weight of feeling of tiredness
There is short duration loss of work and efficiency	There is a prolonged loss of work and efficiency

5**. Causes of Diseases** : Most of the diseases have many causes, rather than one single cause, like unclean water, nourishment, genetic differences, genetic abnormalities e.g. Based on the causes diseases are of two types: Non-Infectious Diseases and Infectious Diseases.

6. **Non-Infectious Diseases:** Not caused by infectious agents, mostly internal and non-

infectious cause. Ex. Cancer

7. **Infectious Diseases: Caused by infectious agents.**

Type Of Disease

- **Bacterial diseases** - Typhoid, Cholera, Tuberculosis, Acne, Anthrax,
- **Viral diseases** - Common Cold, Influenza, Dengue fever, AIDS, Japanese encephalitis or brain fever
- **Fungal diseases**: Skin diseases
- **Protozoan diseases** -Malaria (Plasmodium), Kalaazar (Leishmania), Sleeping sickness(Trypanosomes)
- . **Worm diseases** - Ascariosis (Round worm), Elephantiasis(Wuchereria)

8. The infectious diseases spread by agents are called as **Communicable Diseases**.

SNo	Type of Disease	E x
1.	Air born Diseases	Pneumonia, common cold, Tuberculosis;
2.	Water born diseases	Cholera, hepatitis
3.	Sexual Diseases	HIV, Syphilis
4.	Animal born Disease	- Rabbis. *(Vector- the animal carrying infectious agent from a sick personto another potential host without getting affected Ex. Mosquitocarrying Malaria Parasite)

9. Principles of Treatment

1. **Antibiotics**- many bacteria make a cell wall to protect themselves, the antibiotic (Penicillin) blocks the bacterial process that builds cell wall and blocks the biochemical

pathways. Antibiotics do not work against viral infections. Antiviral medicine is harder than making Antibacterial medicine because Virus has only few biochemical mechanisms of their own. Other medicines bring down fever, reduce pain or loose motions. We can take bed rest to conserve energy.

10 **Principles of Prevention** :Following three limitation are normally confronted while treating an infectious disease:

- Once someone has disease, their body functions are damaged and may never recover completely.
- Treatment will take time, which means that someone suffering from a disease is likely to be bedridden for some time even if we can give proper treatment.
- The person suffering from an infectious disease can serve as the source from where the infection may spread to other people.

General ways of preventing infectious disease

- Air-borne – We can prevent exposure by providing living condition that are not over crowded.
- Water-borne – prevent by providing safe drinking water. This is done by treating the water to kill any microbial contamination.
- Vector-borne – We can provide clean environment, which would not allow mosquito breeding.

Proper nutrition is essential to maintain body immunity. There are vaccines against tetanus, diphtheria, whooping cough, measles, polio and many other diseases.

12. Prevention of disease is better than cure. Hygiene is the basic key to maintain good health.

Vaccination is another way to prevent the disease in which killed microbes are introduced into the body to develop antibodies and can preveent occurence of disease during actual entry of disease causing microbes

13. State any two conditions essential for good health.

Ans. Two conditions essential for good

health are:

- better sanitation or clean
- surroundings, and availability of sufficient and nutritious food.

14. State any two conditions essential for being free of disease.

Ans. Two conditions essential for being free of disease:

- Living in hygienic environment
- Getting vaccinated against common infectious diseases.

15. Are the answers to the above questions necessarily the same or different? Why?

Ans. Answers of above question (1,2) are interconnected but different. It is

because being disease free does mean being healthy.

16. List any three reasons why you would think that you are sick and ought to see a doctor. If only one of these symptoms were present, would you still go to the doctor? Why or why not?

Ans. If we have fever, headache, stomach-ache, loose motions, cough and sneeze etc we feel weak. Then we would feel that we are sick and ought to see a doctor. If only one of these symptoms are present we should still go to see the doctor. Any of these symptoms may be initial signs of a severe disease.

17. In which of the following case do you think the long-term effects on your health are likely to be most unpleasant?

- **if you get jaundice,**
- **if you get lice,**
- **if you get acne. Why?**

Ans. The long-term effects on our health are likely to be most unpleasant if we get jaundice because the symptoms severely affect our internal organs and persist for long time. In contrast to jaundice, lice can be removed easily with short treatment and so is the acne. Both of these do not produce long term effects on the body.

18. Why are we normally advised to take bland and nourishing food when we are sick?

Ans. We are normally advised to take bland and nourishing food when we are sick because we are weak during illness and need complete nourishment for faster recovery. Such a food is easily digested and replenish our lost vitamins, minerals and other nutrients along with energy.

19 **What are the different means by which infectious diseases spread?**

Ans. Infectious diseases can be spread by following means:

a) through contaminated food and water

b) through air

c) through vectors or carriers (housefly, mosquito etc)

d) through direct skin contact or sexual contact

e) through cuts and wounds

20 What precautions can you take in your school to reduce the incidence of infectious diseases?

Ans. To reduce the incidence of infectious diseases in my school the precautions will include:

(i) providing clean drinking water

(ii) educating students about causes of infectious diseases

(iii) vaccination of students against common infectious diseases from time to time

(iv) proper sanitation or clean environment in school and its surroundings to eradicate vectors of infectious diseases

(v) by not allowing the affected students to attend the classes till they recover from infectious diseases.

21. What is immunisation?

Ans. If one person has chicken pox once, there is no chance of suffering from it again. This happens because when the immune system first sees an infectious microbe, it responds against it and then remembers it specifically. So the next time that particular microbe, or its close relatives enter the body, the immune system responds with even greater vigour. This eliminates the infection even more quickly than the first time around. This is the basis of the principle of immunization.

21 What are the immunisation programs available at the nearest health centre in your locality? Which of these diseases are the major health problems in your area?

Ans. DPT vaccine: it is for diphtheria, whopping cough and tetanus in infants.
Pulse polio vaccine: it is to prevent polio.
BCG vaccine: Bacillus Calmette Guerin vaccine for tuberculosis

TAB vaccine for typhoid.

tuberculosis and diarrhea are the major health problems in our area.

22 How many times did you fall ill in the last one year? What were the illnesses?

(a) Think of one change you could make in your habits in order to avoid any of/most of the above illnesses.

(b) Think of one change you would wish for in your surroundings in order to avoid any of/most of the above illnesses.

Ans. I fall ill only once last year. I had suffered from typhoid.

(a) I will avoid street food specially those which are cooked at

unhygienic places and kept uncovered.

(b) I shall keep my surroundings cleaner than earlier.

23. A doctor/nurse/health-worker is exposed to more sick people than others in the community. Find out how she/he avoids getting sick herself/himself.

Ans. A doctor/nurse/health-worker is exposed to more sick people than others in the community still they avoid getting sick themselves because they take care of the preventive measures like personal and community hygiene/cleanliness and immunisation to prevent infectious diseases. They also wash hands with soaps thoroughly after serious examination of patients.

3. Conduct a survey in your neighbourhood to find out what the

three most common diseases are. Suggest three steps that could be taken by your local authorities to bring down the incidence of these diseases.

4

Ans. Three most common diseases in my locality are diarrhoea, malaria and tuberculosis and following steps I would suggest to be taken by our local authorities to bring down the incidence of these diseases :

i. Supply of safe drinking water and preventing incidences of open drains.

ii. Improved and hygienic environment,free of garbage and wastes

thrown in the open. iii. Eradication of mosquitoes

iv Immunisation/vaccination camps

24. A baby is not able to tell her/his caretakers that she/he is sick. What would help us to find out

(a) that the

baby is

sick? (b)

what is the

sickness?

Ans. (a) Symptoms that help us to find that baby is sick, are

(i) continuous crying and

restlessness in the child (ii)

improper intake of food and

body temperature (iii) loose

motions

(b) Baby is suffering from diarrhoea.

25. Under which of the following conditions is a person most likely to fall sick?

(a) when she is recovering from malaria.

(b) when she has recovered from malaria and is taking care of someone suffering from chicken-pox.

(c) when she is on a four-day fast after recovering from malaria and is taking care of someone suffering from chicken-pox. Why?

Ans. A person is most likely to fall sick when she is on a four-day fast after recovering from malaria and is taking care of someone suffering from chicken-pox because a four day fast
will make her body weak due to improper supply of food. Also, malaria is a very fatal disease and it will take some time for the body organs to function normally. Above all, she is taking care of someone who is suffering from most fearful infectious viral disease i.e.. chicken pox, she has more chances of getting an infection due to above mentioned reasons.

26. Under which of the following conditions are you most likely to fall sick? (a) when you are taking examinations.

(b) when you have travelled by bus and

train for two days. (c) when your friend

is suffering from measles. Why?

Ans. We are most likely to fall sick when a friend is suffering from measles since measles is an infectious/communicable disease that can spread easily from one person to the other.