



# BIOLOGY

**BOOKS - MTG IIT JEE FOUNDATION**

**FOOTSTEPS TOWARDS CBSE BOARD**

## Section A

1. What is meristems



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2. Name different parts of a neuron.



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3. Write down the roles of plasma membrane and cell wall.



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4. What is the other name of Japanese encephalitis?



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**5. Who discovered the vaccine for smallpox?**



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**6. Name three functional regions of a cell.**



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7. Name the following tissues: found in the iris of the eye.



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8. Name the following tissues: present in the brain.



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**9.** Name the tissue which allows easy bending in various parts of a plant.



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**10.** What are pathogens ? Give examples.



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**11.** Name the complex plant tissues.



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**12.** What is prokaryotic cell ?



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**13.** What is the name given to the undefined nuclear region of prokaryotic cell?



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**14.** Name the deficiency disease caused due to deficiency of vitamin A



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**15.** Name the deficiency disease caused due to deficiency of vitamin  $B_1$



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**16.** Give one local and one general effect of inflammation process.



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**17.** What is the full form of ATP?



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**18.** Why are mitochondria called semi-autonomous organelles?





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**19.** Name any two diseases which occur due to mosquito bites.



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**20.** Name two diseases which can be prevented by using vaccines.



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21. Which cell organelle is synthesised by the Golgi apparatus?



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22. Assertion: Parenchyma and collenchyma tissues act as mechanical tissue to plants.

Reason: Parenchyma and collenchyma form an important part of the bark of trees.

A. Both Assertion and Reason are true and

Reason is correct explanation of the

assertion.

B. Both Assertion and Reason are true but Reason is not the correct explanation of the assertion.

C. Assertion is true, but Reason is false.

D. Assertion is false, but Reason is true.

**Answer: D**



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**23.** Assertion : Cell wall is a non-living part of the cell.

Reason : Cell wall offers protection, definite shape and support.

A. Both Assertion and Reason are true and

Reason is correct explanation of the assertion.

B. Both Assertion and Reason are true but

Reason is not the correct explanation of the assertion.

C. Assertion is true, but Reason is false.

D. Assertion is false, but Reason is true.

**Answer: B**



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**24.** Assertion : Lysosomes are capable of digesting carbohydrates, proteins, lipids and nucleic acids.

Reason : Lysosomes are rich in hydrolytic

enzymes like lipases, proteases and carbohydrases.

A. Both Assertion and Reason are true and Reason is correct explanation of the assertion.

B. Both Assertion and Reason are true but Reason is not the correct explanation of the assertion.

C. Assertion is true, but Reason is false.

D. Assertion is false, but Reason is true.

**Answer: A**



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**25. Assertion :** It is safe to sit near a person suffering from cold.

**Reason :** Cold is a non-communicable disease.

**A. Both Assertion and Reason are true and Reason is correct explanation of the assertion.**

B. Both Assertion and Reason are true but Reason is not the correct explanation of the assertion.

C. Assertion is true, but Reason is false.

D. Assertion is false, but Reason is true.

**Answer: D**



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**26.** Organelle X bears ribosomes on its outer surface. Organelle X and organelle Y together give rise to organelle Z which is often referred to as 'suicide bag' of cells

Organelle X, Y and Z are respectively

A. endoplasmic reticulum, Golgi apparatus and lysosome

B. lysosome, ER and Golgi apparatus

C. Golgi apparatus, lysosome and endoplasmic reticulum

D. endoplasmic reticulum, lysosome and Golgi apparatus.

**Answer: A**



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**27.** Organelle X bears ribosomes on its outer surface. Organelle X and organelle Y together give rise to organelle Z which is often referred to as 'suicide bag' of cells

Select the incorrect statement regarding X, Y and Z.

A. Organelle X takes part in formation of proteins.

B. Organelle Z is bound by single membrane.

C. Organelle Y is the main site of cellular respiration.

D. Organelle Z is involved in autophagy.

**Answer: C**



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**28.** Organelle X bears ribosomes on its outer surface. Organelle X and organelle Y together give rise to organelle Z which is often referred to as 'suicide bag' of cells

Organelle X was discovered by

A. Porter

B. Camillo

C. Thompson

D. both (a) and (c)

**Answer: D**



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**29.** Organelle X bears ribosomes on its outer surface. Organelle X and organelle Y together give rise to organelle Z which is often referred to as 'suicide bag' of cells

Which of the following is not a function of organelle Y?

A. It helps in secretion of mucus.

B. It helps in storage, modification and packaging of secretory products in the vesicles.

C. It helps during metamorphosis of frog.

D. It helps in formation of cell wall and plasma membrane.

**Answer: C**



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**30.** Organelle X bears ribosomes on its outer surface. Organelle X and organelle Y together give rise to organelle Z which is often referred to as 'suicide bag' of cells

Which of the following organelles is absent in mature mammalian RBCs?

A. X

B. Y

C. Z

D. All of these

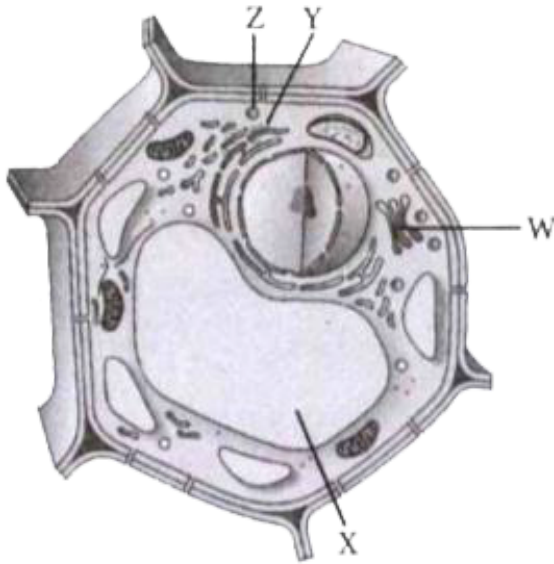
**Answer: D**



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**31.** An eukaryotic cell possesses true nucleus bounded by nuclear membrane. Other membrane bound organelles are also present in an eukaryotic cell.





identify W,X,Y and Z

A. W-Golgi , X-Tonoplast ,Y-Lysosome , Z-  
Plastid

B. W-Dictyosome , X-Vacuole , Y-Ribosome ,  
Z-Lysosome

C. W-Dictyosome , X-Nucleus , Y-Lysosome ,

Z-Ribosome

D. W-Endoplasmic reticulum , X-Nucleus , Y-

Lysosome , Z-Ribosome

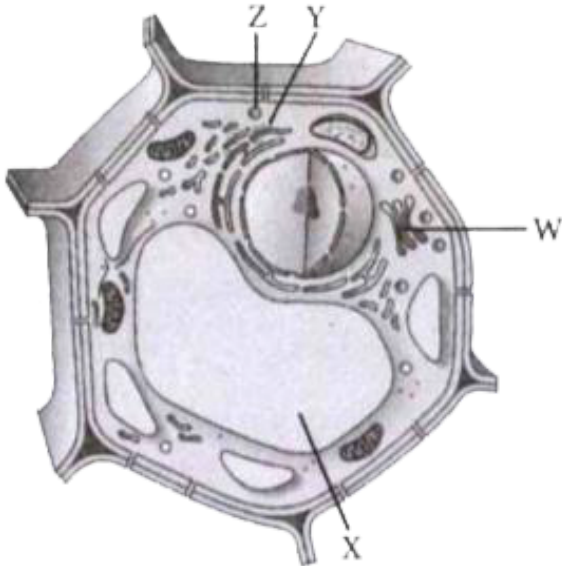
**Answer: B**



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**32.** An eukaryotic cell possesses true nucleus bounded by nuclear membrane. Other membrane bound organelles are also present

in an eukaryotic cell.



The covering membrane of X is known as

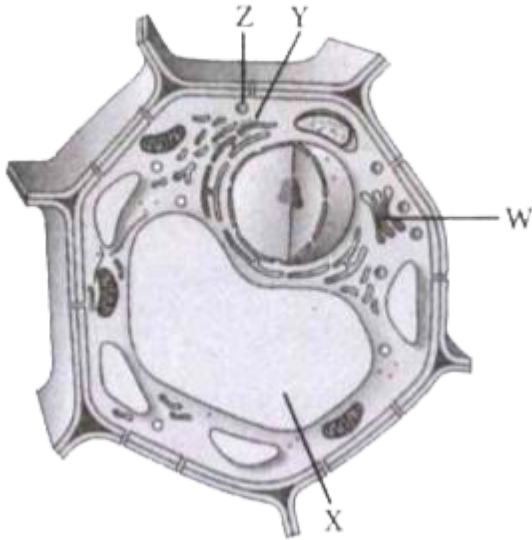
- A. nuclear membrane
- B. plasma membrane
- C. tonoplast
- D. cytoplasm

**Answer: C**



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**33.** An eukaryotic cell possesses true nucleus bounded by nuclear membrane. Other membrane bound organelles are also present in an eukaryotic cell.



Which of the following organelles contains hydrolytic enzymes?

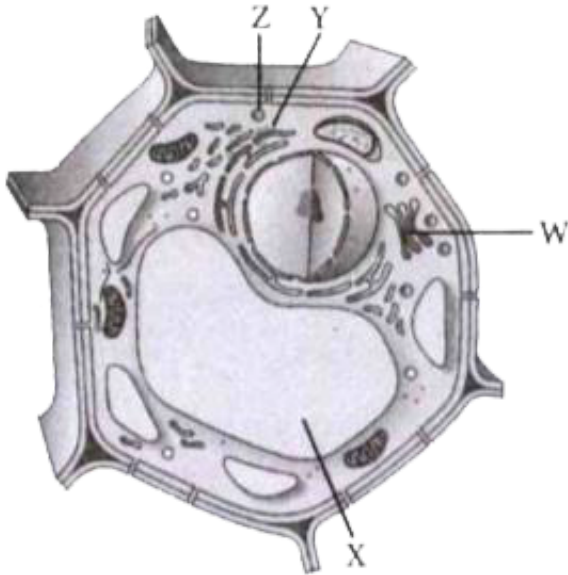
- A. W
- B. X
- C. Y
- D. Z

**Answer: D**



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**34.** An eukaryotic cell possesses true nucleus bounded by nuclear membrane. Other membrane bound organelles are also present in an eukaryotic cell.



Among the organelles W, X, Y and Z which one takes part in storage, modification and packaging of various materials?

A. X

B. W

C. Z

D. Y

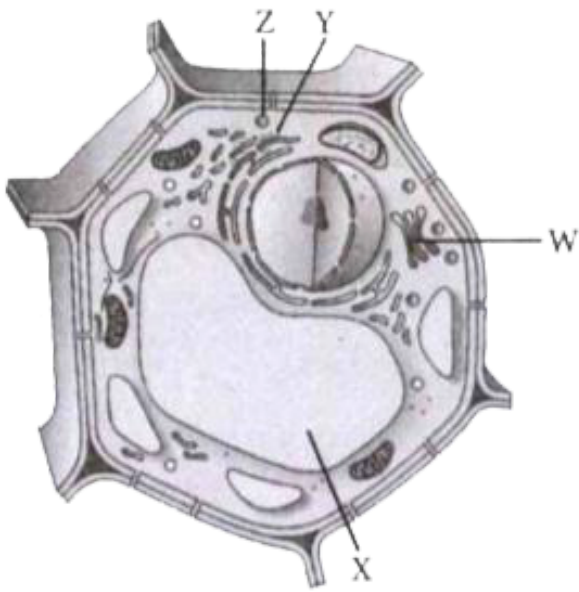
**Answer: B**



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**35.** An eukaryotic cell possesses true nucleus bounded by nuclear membrane. Other membrane bound organelles are also present in an eukaryotic cell.





Organelle Y is

- A. membrane-less
- B. smallest known particle
- C. ribonucleoprotein
- D. all of these

**Answer: D**



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**36.** A tissue is a group of similar cells held together by a cementing substance produced by them, for performing a specific function. There are two types of tissue in plants i.e., meristematic tissue and permanent tissue. Meristematic tissue are found in all growing parts of plants such as root and shoot tips. These are called apical meristem. The tissue

occurs right from the birth of plant, are called primary meristems. Permanent tissue arise from meristematic tissue and constitute major portion of the plant body. These includes simple and complex tissues. Simple tissues are parenchyma, sclerenchyma and collenchyma, complex tissue are xylem and phloem.

Parenchyma arises from

- A. meristematic tissue
- B. complex tissue
- C. permanent tissue

D. none of these

**Answer: A**



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**37.** A tissue is a group of similar cells held together by a cementing substance produced by them, for performing a specific function. There are two types of tissue in plants i.e., meristematic tissue and permanent tissue. Meristematic tissue are found in all growing

parts of plants such as root and shoot tips. These are called apical meristem. The tissue occurs right from the birth of plant, are called primary meristems. Permanent tissue arise from meristematic tissue and constitute major portion of the plant body. These includes simple and complex tissues. Simple tissues are parenchyma, sclerenchyma and collenchyma, complex tissue are xylem and phloem.

Which cells have the ability to divide?

A. Meristem

B. Xylem

C. Phloem

D. None of these

**Answer: A**



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**38.** A tissue is a group of similar cells held together by a cementing substance produced by them, for performing a specific function. There are two types of tissue in plants i.e., meristematic tissue and permanent tissue.

Meristematic tissue are found in all growing parts of plants such as root and shoot tips. These are called apical meristem. The tissue occurs right from the birth of plant, are called primary meristems. Permanent tissue arise from meristematic tissue and constitute major portion of the plant body. These includes simple and complex tissues. Simple tissues are parenchyma, sclerenchyma and collenchyma, complex tissue are xylem and phloem.

The xylem in plants are responsible for

A. transport of water

B. transport of food

C. transport of amino acid

D. transport of oxygen

**Answer: A**



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**39.** A tissue is a group of similar cells held together by a cementing substance produced by them, for performing a specific function. There are two types of tissue in plants i.e.,



meristematic tissue and permanent tissue. Meristematic tissue are found in all growing parts of plants such as root and shoot tips. These are called apical meristem. The tissue occurs right from the birth of plant, are called primary meristems. Permanent tissue arise from meristematic tissue and constitute major portion of the plant body. These includes simple and complex tissues. Simple tissues are parenchyma, sclerenchyma and collenchyma, complex tissue are xylem and phloem.

Four students observed parenchyma tissue and drew following diagrams. Which one is

correct?



A



B



C



D

A. A

B. B

C. C

D. D

**Answer: A**



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**40.** A tissue is a group of similar cells held together by a cementing substance produced by them, for performing a specific function. There are two types of tissue in plants i.e., meristematic tissue and permanent tissue. Meristematic tissue are found in all growing parts of plants such as root and shoot tips. These are called apical meristem. The tissue occurs right from the birth of plant, are called primary meristems. Permanent tissue arise from meristematic tissue and constitute major

portion of the plant body. These includes simple and complex tissues. Simple tissues are parenchyma, sclerenchyma and collenchyma, complex tissue are xylem and phloem.

\_\_\_\_\_ transports product of photosynthesis from the leaves where they are synthesised, to other parts of the plant.

A. Xylem

B. Sclerenchyma

C. Vacuoles

D. Phloem

**Answer: D**



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**41.** X and Y are type of diseases. X can spread from an infected person to a healthy person by actual contact between them and can spread from an infected person to healthy person with food, air or water. Y remains confined to the person who develops them and do not spread to others.

Identify X and Y.

	X	Y
(a)	Communicable	Non-communicable
(b)	Non-contagious	Contagious
(c)	Acute	Chronic
(d)	Congenital	Chronic



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**42.** X and Y are type of diseases. X can spread from an infected person to a healthy person by actual contact between them and can spread from an infected person to healthy person with food, air or water. Y remains confined to the person who develops them

and do not spread to others.

Some examples of X are

A. typhoid and goitre

B. small pox and marasmus

C. measles and small pox

D. typhoid and epilepsy

**Answer: C**



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**43.** X and Y are type of diseases. X can spread from an infected person to a healthy person by actual contact between them and can spread from an infected person to healthy person with food, air or water. Y remains confined to the person who develops them and do not spread to others.

Which of the following is protozoan pathogen?

A. *Streptococcus pneumoniae*

B. Variola virus



C. Varicella zoster virus

D. Plasmodium vivax

**Answer: D**



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**44.** X and Y are type of diseases. X can spread from an infected person to a healthy person by actual contact between them and can spread from an infected person to healthy person with food, air or water. Y remains

confined to the person who develops them and do not spread to others.

All the given are examples of X except

A. AIDS

B. Malaria

C. Haemophilia

D. Ebola

**Answer: D**



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**45.** X and Y are type of diseases. X can spread from an infected person to a healthy person by actual contact between them and can spread from an infected person to healthy person with food, air or water. Y remains confined to the person who develops them and do not spread to others.

Suman is having low blood pressure, frequent stools with blood and dehydration. She might be suffering from a

A. protozoan disease, i.e., diphtheria

B. bacterial disease, i.e., diarrhoea

C. fungal disease, i.e., diphtheria

D. viral disease, i.e., ascariasis.

**Answer: B**



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## Section B

1. Why is the plasma membrane called a selectively permeable membrane



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2. Animals of colder regions and fishes of cold water have thicker layer of subcutaneous fat.

Describe why?



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3. State the roles of ligaments and tendons in our skeletal system.



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4. Do you agree that 'A cell is a building unit of an organism'. If yes, explain why?



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5. Why does the skin of your finger shrink when you keep your hand in water (soap solution) for a long time?



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6. Voluntary muscles are also known as skeletal muscles. Justify.



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7. Give two structural characteristics of these voluntary muscles.



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8. What are immediate and contributory causes of diseases? Give one example of each.



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9. List any four causes of diseases.



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## Section C

1. State three differences between striated and unstriated muscles.



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2. Name the tissue that forms the inner lining of our mouth.



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3. Name the tissue that forms the hard covering of seeds and nuts.



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4. Write two functions of adipose tissues.



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5. Mention the possible causes that you can think of when a baby is suffering from diarrhoea, while other babies in the same locality do not .



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6. What is an antibiotic? Describe the mechanism of action of antibiotics with the help of an example.



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7. Which cell organelle is called the powerhouses of the cell? Explain why it is called so? How is this organelle able to make its own proteins?



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**8.** List any three ways of preventing the spread of air borne and water borne diseases.



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**9.** Write down the differences between plant cell and animal cell.



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**10.** Name the plant tissue found in the husk of a coconut and also identify the substance which is responsible for its stiffness.



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**11.** What types of cells-dead or living -are found in sclerenchyma and parenchyma? Write their functions also.



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12. What are the various types of animal tissues? Mention briefly the location and one main function of each type of tissues.



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## Section D

1. Draw a neat labelled diagram of nucleus.



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2. Draw a neat labelled diagram of ultrastructure of chloroplast



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3. Different between xylem and phloem



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4. Different between simple tissue and complex tissue



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5. Highlight the ways through which infectious diseases generally spread in human communities.



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6. Give reasons : Balanced diet is necessary for maintaining healthy body.



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7. Give reasons : Health of an organism depends upon the surrounding environmental conditions.



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8. Give reasons : Our surrounding area should be free of stagnant water.



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**9.** Give reasons : Social harmony and good economic conditions are necessary for good health.



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**10.** Give short answers : During HIV infection, it is the other diseases which kill the patient rather than the HIV infection. Can you justify this statement?



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**11.** Give short answers : How does the immune system work against the microbes?



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**12.** Give short answers : What do signs and symptoms indicate if a person is suffering from any disease?



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