9/3/21
11:11

Ch-6

Structure of Living Organism

Part-I (Qs + Ans)

Q1) What is cell?

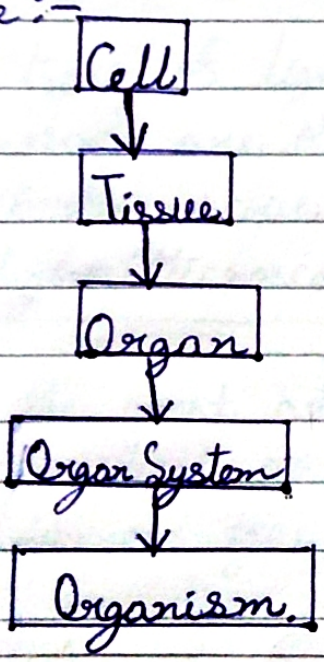
Ans:- The smallest structural and functional unit of organism (body) is called cell.

Q2) Who discovered cell?

Ans:- Robert Hooke discovered cell.

Q3) Name the different levels of organisation in a living body.

Ans:- The different levels of organisation in a living body are:-



Q4) Who was Anton von Leeuwenhoek?

Ans:- In 1674 Anton von Leeuwenhoek made an improved and observed living cells. (Human sperm cells, blood cells, protozoans, etc. are few examples)

Q5) What is a microscope?

Ans:- The tool through which we can see the cell and its parts by magnifying is called microscope.

Q6) What are the two common types of microscope?

Ans:- The two common types of microscope are:-

(i) Light Microscope
(ii) Electron Microscope.

Q7) Name the types of light microscope.

Ans:- Light Microscope are of two types. They are:-

(i) Simple light Microscope
(ii) Compound light Microscope.

Q8) Which is the most advanced type of microscope? Why it is considered as most advanced?

Ans:- The most advanced type of microscope is 'Electron Microscope'.

This microscope is considered as most advanced because electron microscope have a higher

resolving power than light microscope and can reveal the structure of very small objects. ~~of objects instead of light and electro-magnets are used in place of glass lenses. It's magnification power is 50,000 to 3,00,000 times. The image of the object is obtained on a photographic plate or in screen.~~

Q9) How does a electron microscope work?

Ans:- Electron microscope is a large and complex instument of very high magnification. In this Microscope beams of electron are used as a source of illumination of objects. instead of light and electro-magnets are used in place of glass lenses. The image of the object is obtained on a photographic plate or in screen.

Q10) Differentiate between →

a) Simple light microscope and compound light microscope.

Ans-

Simple light microscope	Compound light microscope
i) It is simple in structure and easy to use.	i) It is not easy to use.
ii) It has only one occular lens, binocular eye pieces.	ii) It has two or more lenses — occular lens, objective lens and sometimes with condenser lens.

iii)	It's magnification power is 15 to 20 times.	iii) It's magnification power is 300 to 4,000 times.

b) Compound light microscope and electron microscope.

Ans:-

Compound light microscope	Electron microscope
i) It's magnification power is 300 to 4,000 times.	i) Its magnification power is 50,000 to 3,00,000.
ii) It is smaller than electron microscope and occupies less space than electron microscope.	ii) It is very big in size and occupies a large space.
iii) It has less magnification power than electron microscope.	iii) It has high magnification power.
iv) Lens are combined together.	iv) Lens are not combined together.
v) The image of object is obtained on a lens.	v) The image of object is obtained on a photographic plate.

PTO.

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H.W

Part-II) Qs + Ans)

Q11) Name the unit for measurement of cell.

Ans:- The unit for measurement of cell is micrometre or micron.

Q12) Name the following:—

a) Smallest cell → Mycoplasma.

b) Largest plant cell → Acetabularia

c) Largest animal cell → egg of Ostrich.

d) Longest animal cell → Neurone (Nerve cell)

Q13) Name the different organs of gaseous exchange in human body.

Ans:- The different organs for gaseous exchange in human body are:—

i) Lung
ii) Trachea
iii) Bronchai

Q14) What is the main organ of excretion in human body?

Ans:- The main organ of excretion in human body is kidney.

PTO

Q15) Name the two main types of plant tissue. Define each type.

Ans:- The two main types of plant tissue are:-

i) Meristematic tissue

ii) Permanent tissue

i) Meristematic tissue → Thin walled living group of cells having active cell division capacity.

ii) Permanent tissue → Mature cells with thin to hard cell-wall which are not capable of cell division.

Q16) Name the conducting tissues of plant. How do they help in conduction?

Ans:- The conducting tissue of plant is Xylem and Phloem. Xylem help in upward lateral conduction of water or sap. Phloem helps to transport food from leaves to different parts of plant body.

Q17) Differentiate between:—

a) Simple permanent and complex permanent tissue.

Ans:-

Simple permanent tissue	Complex permanent tissue.
i) These tissues are made up of same type of cells.	i) These tissues are made up of different type of cells which combined to perform a single

			function.
ii)	Present in all parts of plant.	ii)	Present in some parts of plant.
iii)	Performs a variety of functions.	iii)	Transports water, minerals and food throughout the plant body.
iv)	Includes parenchyma, collenchyma, sclerenchyma.	iv)	Includes Xylem and Phloem.

b) Meristematic and permanent tissue.

Ans:-

	Meristematic tissue		Permanent tissue
i)	Continuously dividing cell.	i)	Cells lost the capacity to divide.
ii)	Cells are small and isodiametric.	ii)	Variable in size and shape.
iii)	Cell wall is thin.	iii)	Cell wall is thick.
iv)	Nuclei are large.	iv)	Nuclei are small.
v)	Vacuoles are absent.	v)	Vacuoles are present.

c) Xylem and Phloem.

Ans:-

	Xylem		Phloem
i)	It consists of mainly dead elements.	i)	It consists of mainly living elements.
ii)	It conducts water and minerals.	ii)	It conducts food.
iii)	It provides mechanical strength of the plant.	iii)	It doesnot provide mechanical strength to the plant.

P.T.O.

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11:11

Part - III > Qs + Ans >

Q1> Why mitochondria is called power house of the cell?

Ans:- Mitochondria is called powerhouse of the cell because mitochondria provide energy for the vital activities of living cells by oxydation of food.

Q2> Why chloroplast is called kitchen of the cell?

Ans:- Chloroplast is called kitchen of the cell because chloroplast help in food production and contains chlorophyll pigment which help in trapping solar energy and initiate photosynth

Q3> Why lysosome is called Suicidal bag of cell?

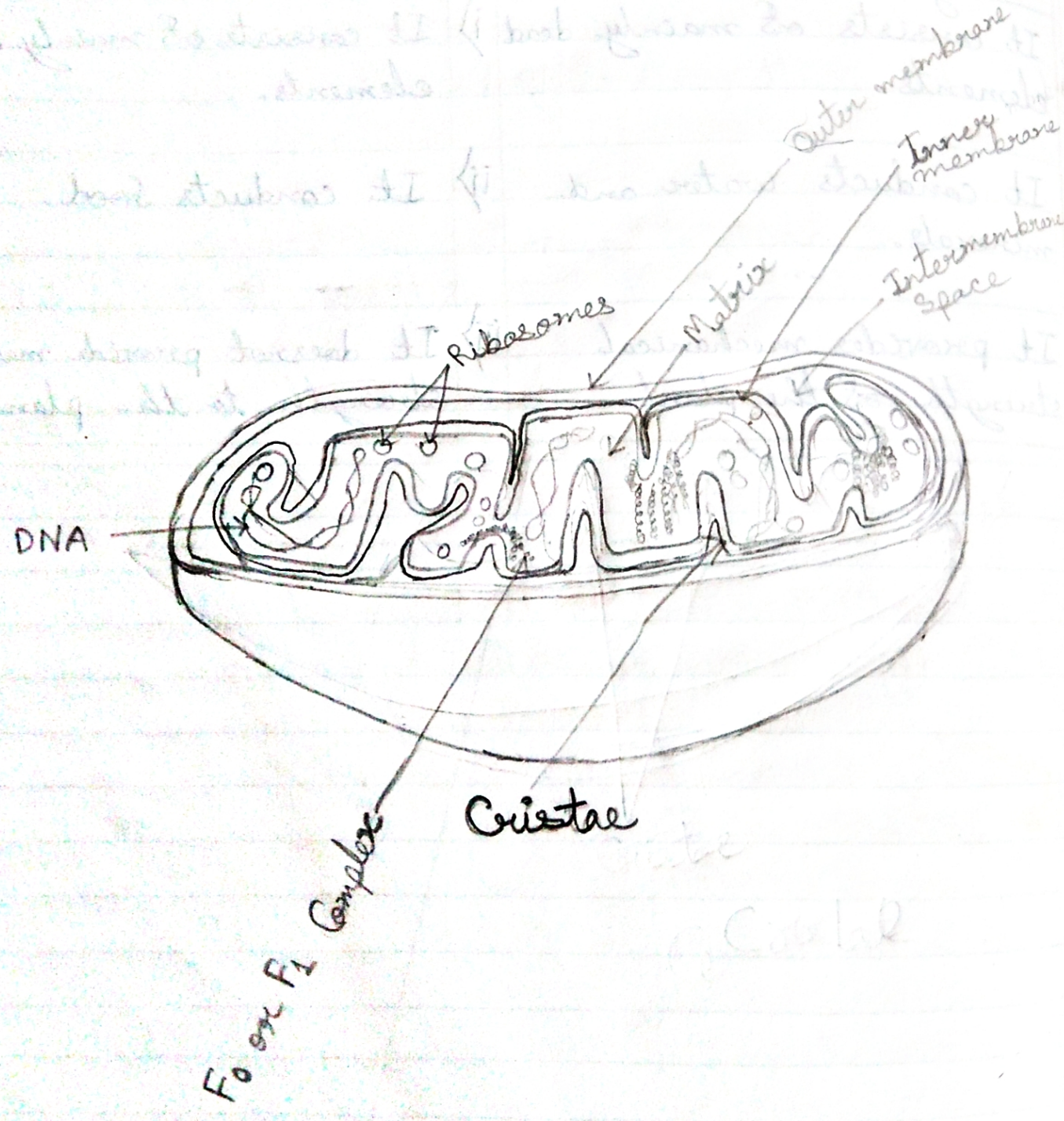
Ans:- Lysosome is called Suicidal bag of cell because lysosome sometimes digestite own Organelles and destroy own cell with the help of enzime called lysozyme.

Q4> Draw and describe the structure of mitochondria?

Ans:- Mitochondria are small usually rod shaped may be rounded or oval scatteredly distributed through out the cytoplasm. Each mitochondrion is bounded by two membranes — outer and inner. Many finger like

4.A)

Mitochondria



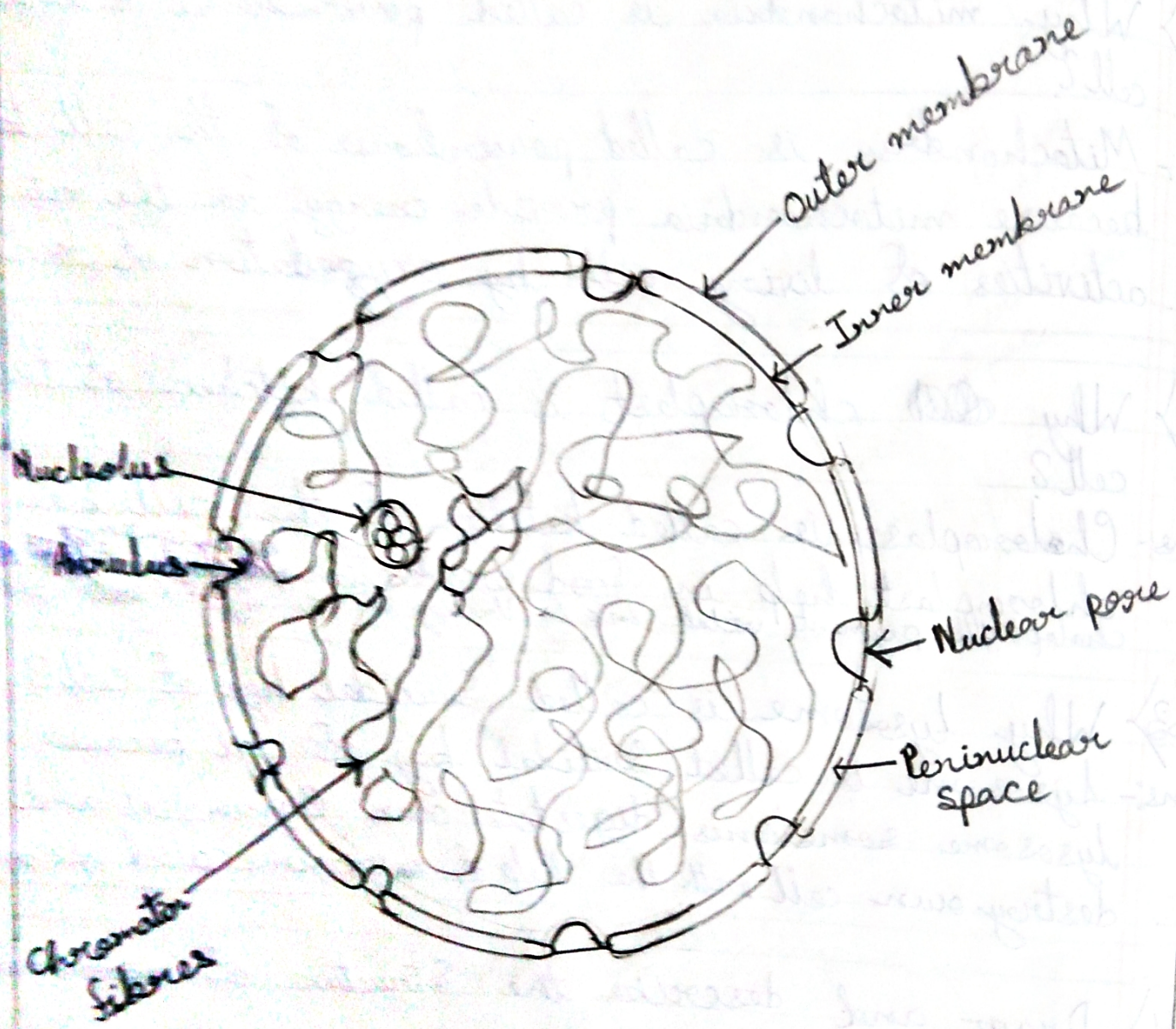
projection (out-growth) come out from inner membrane, these finger-like projections are called cristae. Within the cristae present some tennis bat like structure, known as oxysome.

The ground substance present inside the mitochondria is called matrix, the matrix possess different enzymes, DNA, RNA, ribosome, proteins. Different enzymes also present in Inner membrane. They are involved in energy production.

Q5) Draw and describe the structure of nucleus.

Ans:- The dense rounded or oval structure usually person in the middle at the Cytoplasm is called Nucleus. Nucleus is surrounded by a porous membrane called nuclear membrane which Seprate the nucleus from the surrounding Cytoplasm. The dense Sap present inside the nuclear membrane is known as nuclear Sap or nucleoplasm. Fine thread like structure present inside the nucleus present a dense rounded

Nucleus


Outer membrane
Inner membrane
Nucleolus
Nucleus
Nuclear pore
Perinuclear space
Chromatin fibres

Structure where ribosome are Synthesiced is Known as nucleolus.

Q6) Why nucleus is called the brain of the cell?

Ans:- Nucleus is called the brain of the cell because nucleus is controlling all the centre of the activities.

Q7) Differentiate between prokaryotic and eukaryotic cell.

Q7) Differentiate between prokaryotic and eukaryotic cell

Prokaryotic cell	Eukaryotic cell
i) The simple cell without typical nucleus and membrane covered organelles.	i) Cells with typical nucleus and membrane covered animal cells.
ii) Nuclear and mitochondria is absent.	ii) All four components are present.
iii) Ribosomes are smaller in shape.	iii) Ribosomes are larger in Shape.
iv) It contains a covalently closed circular DNA.	iv) It contains linear DNA with two ends.
v) Prokaryotic means primitive nucleus. Ex:- Bacteria.	v) Eukaryotic means advance nucleus. Ex:- plant and animal cell.

Q8) What are the parts of golgi complex? What are dictiosomes?

Ans:- The parts of golgi complex are :-

i) Cisternae
ii) Vacuoles
iii) Vesicles

Dictiosomes: Dictiosomes are abundant in animal cells and are less frequently found in plant cells. In plant cells golgi bodies are known as dictiosomes (distributed scatteredly).

8/3/21
C.W

Ch-6

Qs+Ans

Q1) What are the advantage of the shape of the following cells → i) RBC, ii) WBC and iii) Guard cell.

Ans:-

	Type	Shape	Function
i)	RBC (Red Blood corpuscles) of human.	Biconcave, Circular and without nucles and many other cell organelles	Carries more oxygen, easy passing through the blood vessels.
ii)	WBC (White Blood Corpuscles) of human.	Irregular shaped (pseudopodia formed occur).	Easy passing through the blood capillaries and engulf pathogens or foreign body.
iii)	Guard cell	Kidney shaped	Regulate opening and closing of stomata.

Q2) What is antifreeze protein?

Ans:- Cells posses antifreeze protein to prevent ice crystals formation inside the cell is cold condition. These animals also possess fat rich cells to conserve heat.

Q3) State the adaptation found in animals living

in marine (saline) water?

Ans:- Animals having chloride cells in their gills and expell excess sodium (Na^+) and chloride (Cl^-) ions from body.

Q4) How the bacteria adapt themselves in the soil rich in decaying organic matter?

Ans:- The bacteria adapt themselves in the soil rich in decaying organic matter because organisms growing in soil have the power to tolerate high level acidity.

Q5) Differentiate between cell wall and cell membrane.

Ans:-

Cell wall	Cell membrane
i) It lies outside wall of plant cell.	i) It lies outside membrane of animal cell.
ii) It present in only plant cell.	ii) It present in both plant and animal cell.
iii) It is permeable.	iii) It is selectively permeable.
iv) It is made up of cellulose (a type of carbohydrate).	iv) It is made up of protein and lipid (mainly).

PTO.

Q6) Write the ~~aerial~~ areal adaption of birds and insects.

Ans:- The ~~aaaa~~ areal adaption of birds and insects are:-

- Cells of flying animals possess more ~~haa~~ haemoglobin (pigment ~~of~~ caries O_2 in blood.) in their RBC.
- In the muscle cells of these animals also have abundant number of mitochondria which is needed for more ~~energy~~ energy production during flight. (flapping of wings)

Q7) ~~Q7~~ Which cell organil is polymorphic?

Ans:- ~~A~~ lysosome is polymorphic.

Q8) ~~What is the~~ State two main function of ~~Epethelial~~ tissue.

Ans:- The ~~function~~ of ~~Epethelial~~ tissue are omit.

Q8) State 2 main functions of epethelial tissue, connective tissue, muscular tissue and nervous tissue.

Ans:- • The 2 main function of epethelial tissue are:-

i) Protection → From protective covering over the free surface of body both inside and outside.

ii) Absorption → Some epithelial cells of intestine absorb digested food.

- The 2 main functions of connective tissue are:-

i) Attachment → Attaches different structures such as muscles with skin or bones.

ii) Fluid connective tissue like blood and lymph transport gases, food, waste minerals, etc.

- The 2 main functions of muscular tissue are:-

i) Helps in movement of limbs (hands and legs) and different parts of the body which help in locomotion.

ii) Helps in peristaltic movement of alimentary canal.

- The 2 main functions of nervous tissue are:-

i) Receive stimuli.

ii) Conduct nerve impulses, co-ordinate internal and external environment.

Q9) Which tissue is required for locomation?

Ans:- Muscular tissue is required for locomotion.

Q10) Write the difference between ligaments and tendons.

Ans:-

	Ligaments	Tendon
i)	It is elastic and flexible.	It is strong but not-flexible.
ii)	It joins muscles to bones.	It joins bones to bones.
iii)	Ligaments can be found in joints.	Tendon can be found in ends of a skeletal muscles.
iv)	It has great strength but limited flexibility.	It has considerable strength but high elasticity.