SHIKSHA CLASSES

Sub. : Science | **Question Paper** | **Marks : 20**

Std. : VIIIth - S.B. | **10. Cell and Cell Organells** | **Time : 45 min.**

Q.1(A) : Choose the correct alternative **2**

1) During starvation --------digest stored protein,fats

Ans : b) Lysosomes

2) -------is the packing department.

Ans : d) Golgi Complex

Q.1(B) : Solve any one of the following question 1

1) Find the odd one out

DNA,Ribosomes,Chlorophyll

Ans : Chlorophyll

2) Who I am?

I am a chemical factory of the cell

Ans : Chloroplasts

3) Write true or false

Homeostasis is maintained in the cell by plasma membrane.

Ans : True

Q.2(A) : Give reason (Any One) 2

1) Raisins swell after keeping in plain water.

Ans : When raisins are placed in plain water, there is action of endosmosis. The outer skin of raisins acts like selectively permeable membrane. Since the concentration of water inside the raisin is lesser than the concentration of water in the outer medium, water enters in the raisin. This causes raisins to swell after keeping them in plain water.

2) Vacuoles do not have any typical size or shape.

Ans : Vacuoles change their shape and size as per the need of the cell. Thus they do not have any fixed shape or size.

Q.2(B): Solve any two of the following question. 4

1) Write the function of Cytoplasm and Nucleus.

Ans : Functions of cytoplasm:

i)It is the medium for all cellular chemical reactions.

ii)It is a medium in which the organelles remain suspended.

iii)It helps in the movement of the different cellular elements.

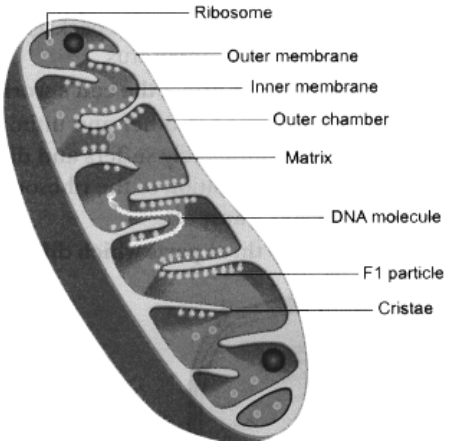
Functions of nucleus:

i)It is the control centre of a cell as it controls all the activities of the cell.

ii)It also contains gene-containing chromosomes which are the units of inheritance in an organism.

2) Draw neat and labelled diagram of mitochondria.

Ans :



3) Who gives the colour to a) Red tomato b) carrot c) Green leaf d) violet

Ans : a) Red tomato - Lycopene

b) carrot - Carotene

c) Green leaf - Chlorophyll

d) violet - Anthcyanin

4) What happened when plasma membrane had not been selectively permeable.

Ans : Plasma membrane is selectively permeable which means it allows the entry or exit of selective materials inside and outside the cell. In its absence, the regulated movement of substances in and out of the cell will be affected.

Q.3 : Solve any two of the following question. 6

1) Describe the structure of the nucleus in the cell

Ans : Nucleus is the most important part of the eukaryotic cell.

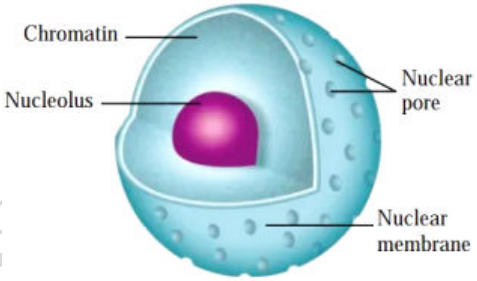
i) Inside the nucleus there is round darkly stained nucleolus.

ii) The nucleus is covered over by double membrane which is porous.

iii) The nuclear pores allow the transport of different substances in and out of the nucleus to cytoplasm.

iv) Inside the nucleus is the chromatin network which contains chromosomes. Chromatin fibres are thin which condense to form chromosomes. The chromosomes become clear and distinct at the time of cell division.

v) In every cell there are specific number of chromosomes. Chromosomes contain genes which are bearers of hereditary characters.



Nucleus

2) Write the difference between plant cell and animal cell.

Ans :

Component	Animal cell	Plant cell
Cell membrane	Present	Present
Cell wall	Absent	Present
Lysosomes	Present	Absent
Plastids	Absent	Present
Endoplasmic reticulum	Present	Present
Vocuole	Present	Present
Golgi complex	Present	Present
Mitochondria	Present	Present

3) What are the three type of solution according to concentration?

Ans : i) **Isotonic solution:** When the concentration of the cell and that of the medium in which the cell is kept is same, then such solution is called isotonic solution.

ii) **Hypotonic solution:** When the concentration of the water in the cell is less than that of the concentration of the water in the surrounding medium in which the cell is kept, then such solution is called hypotonic solution.

iii)**Hypertonic solution:** When the concentration of the water in the cell is more than that of the concentration of water in the surrounding medium then such solution is called hypertonic solution.

4) Define :

a)Diffusion b) Osmosis c)prokaryotic cell

Ans : **a)Diffusion :** The movement of the molecules from region of higher concentration to the region of lower concentration is called diffusion.

b) Osmosis : The movement of solute from low concentration to high concentration and the movement of solvent from high concentration to the region of low concentration across semipermeable membrane is called osmosis.

c)prokaryotic cell : A prokaryotic cell is a type of cell that does not have a true nucleus or membrane-bound organelles.

Q.4 : Solve any One of the following question. **5**

1) Explain Golgi Complex.What are the functions of Golgi Complex?

Ans : i) Golgi complex is made up of 5-8 hollow and flat sacs called cisternae.

ii) These are placed parallel to each other and are filled with different enzymes.

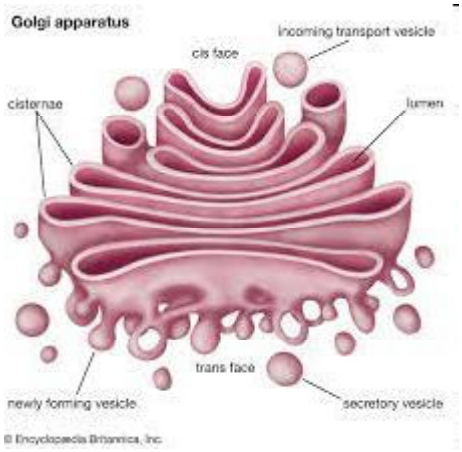
iii) Golgi complex has two faces called forming face and maturation face.

iv) The proteins packed in vesicles and coming from ER reach Golgi complex through cytoplasm.

v) They fuse with the formation face of the Golgi membranes for emptying their contents in the cisternae.

vi) When these contents pass through the cisternae, they are chemically modified with the help of enzymes and are again packed in the vesicles.

viii) These vesicles come out of Golgi ' complex at the maturation face.



functions of Golgi Complex:

i) Different secretions are prepared in the Golgi complex. Hence it is called the secretory organ of the cell.

ii) The secretions are modified and sorted out as per their functions. They are further packed.

iii) The enzymes, mucus, proteins, pigments, etc. are sorted and then dispatched to various target regions like plasma membrane, lysosome, etc.

iv) Golgi complex also produces vacuoles and secretory vesicles.

v) Formation of cell wall, plasma membrane and lysosomes is aided by Golgi complex.

2) How does endosmosis and exosmosis occur in the cell?

Ans : When the water concentration inside the cell is less as compared to the medium in which it is present, then the endosmosis takes place. This makes the water to enter inside the cell.

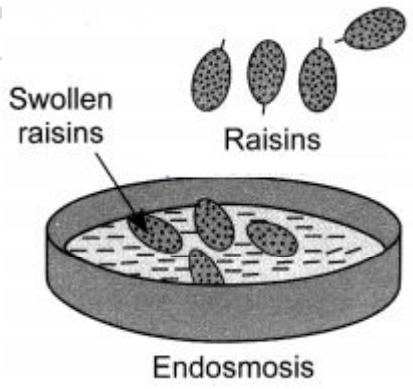
When water concentration inside the cell is more than the water concentration in the medium in which it is present, then the water comes out of the cell. This is called exosmosis.

Since the cell membrane acts as a semipermeable membrane, the processes of endosmosis and exosmosis takes place in the cell.

Put dried raisins or apricots in plain water and leave them for some time. Then place them into a concentrated solution of sugar or salt. You will observe the following:

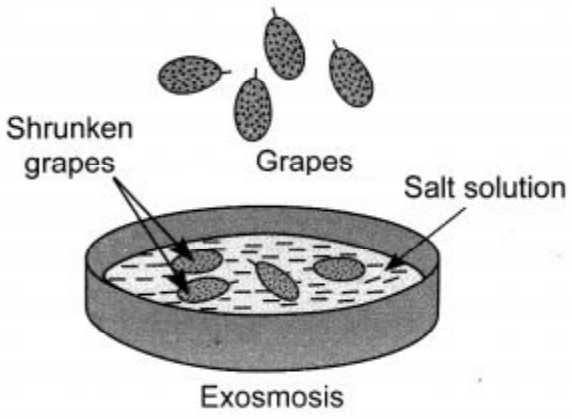
a) Each of the raisins or apricots gains water and swells when placed in water.

Reason: The raisins or apricots swell up as water moves inside them from outside because the water concentration is less inside the cell as compared to the solution outside. Hence, water moves inside the cell by endosmosis.



b) However, when placed in the concentrated solution they lose water, and consequently shrink.

Reason: The raisins or apricots shrink as water moves outside from them because the water concentration is more inside the cell as compared to the solution outside. Hence, water moves out of the cell by exosmosis.



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