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7th Science – Term 2 – Study Materials

UNIT 4 CELL BIOLOGY.

VII. Very short answer :

1.What are the functions of cell wall in plant cell?

Ans. Protection, maintains shape of cell and acts as protective framework

2.Which organelle uses energy from sunlight to make starch?

Ans. Chloroplast uses energy from sunlight to make starch.

3.What are the main things in a nucleus? Ans. Nuclear envelope, Nucleolus, chromatin body.

4.What does cell membrane do? Ans.It acts as boundary of cell and protects it

5.Why lysosomes are known as scavengers of the cell?

Ans.The lysosomes are the main digestive compartments of a cell and digest damaged cell parts. Hence they are called scavengers of the cell.

6.Teacher said-"A virus is not an organism" Do you agree with this statement or not?

Explain Why?

Ans. True. I agree with the statement.

A virus acts as a living organism within the body of a host and behaves like a non-living thing outside. It lacks cell wall, cell membrane, cytoplasm and organelles. Hence it is not a organism

VIII.Give short answer :

1.Why the cell is very important for us?

i.Cell is the basic structural and functions unit of life.

ii.It is the building unit of living organism.

iii.A group of cells form a tissue which forms the organ and organ systems. This helps a living organism to do its functions. Hence cell is very important for us

2.Distinguish between the following pairs

a) Smooth ER and Rough ER

b) Cell wall and cell membrane

c) Chloroplast and mitochondria

S.No	Smooth ER (Endoplasmic Reticulum)	Rough ER (Endoplasmic Reticulum)
1.	It is smooth due to absence of Ribosomes.	It is rough due to presence of Ribosomes.
2.	It helps in transport of steroids and lipids.	It helps in protein synthesis

S.No	Cell wall	Cell membrane
1.	It is seen only in plant cells	It is seen in plant and animal cells.
2.	It is made of cellulose.	It is made of proteins and lipids.
S.No	Chloroplast	Mitochondria
1.	It is a organelle seen only in plant cells	It is a organelle seen in plant and animal cells.
2.	It helps in synthesis and storage of starch.	It is the centre of respiration in a cell and produces energy.

3. Write correct sequence from cell to organism?

Ans: Cell → Tissue → Organ → Organ system → Organism.

4. Write a short note on nucleus

*Nucleus is seen in the cytoplasm of plant and Animal cells.

*It is surrounded by nuclear envelope.

*It has one or two nucleoli and chromatin body.

*The chromatin body stores genetic information.

Functions of Nucleus:

*It controls all the processes and chemical reactions that take place inside the cell.

*Inheritance of character from one generation to another.

5. Classify the following terms into cells, tissues, organs and write in the tab column given below: Neuron, Lungs, Xylem, brain, adipose, Leaf, RBC, WBC, hand, muscle, heart, ovum, squamous, phloem, cartilage.

Cell	Tissue	Organ
Neuron ,RBC ,WBC, Ovum	Xylem, Adipose, Muscle,Squamous, Phloem, Cartilage	Lungs Brain Leaf Hand Heart

6. On the lines given below, write about what you have learned from the activities done in this lesson.

1. Cell is the basic unit of an organism.

2. Based on number of cells organisms can be classified as unicellular multicellular organisms.

3. The cells form tissues, Tissues form organs, Organ system help an organism to function.

4. The cell wall is seen only in plant cells.

5. Cell membrane is seen only in plant cells.

6. Cell membrane is seen in all cells.
7. The organelles of the cell like chloroplast, Mitochondria, Ribosomes Endoplasmic Reticulum, Golgi bodies etc, help to perform cell functions.
8. Nucleus is the controlling centre of a cell.

IX. /GIVE LONG ANSWER :

1. Write about any three organelles in detail.

Ans. The three organelles are as follows:

Chloroplast:

- *They are green organelles seen in plant cells only.
- *They can prepare food using sun is energy and photosynthesize since they contain the pigment chlorophyll.
- *They absorb the radiant energy of the sun and convert into chemical energy to be used by plants and animals.

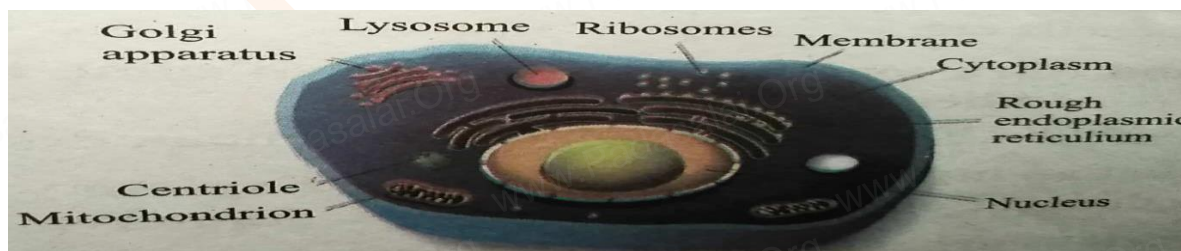
Golgi Complex:

- *They are cell organelles which consist of membrane bound sacs stacked on top of one another and have associated secretory vesicles.
- *Golgi complex helps in production of secretory substances, packaging and secretion.

Mitochondria:

- *It is a oval double membrane bounded organelle.
- *Aerobic respiration occurs in mitochondria and energy is released. Hence mitochondria is called as power house of the cell.
- *The energy produced is used for metabolic activities of the cell.

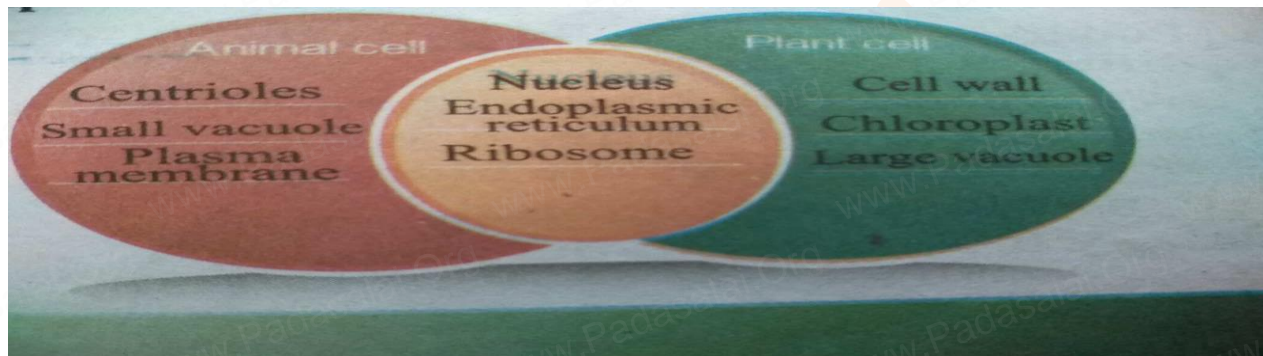
2. In a situation, how to explain, while your friend ask what is this, never seen before?



- *This is a animal cell.
- *It is the basic unit of an animal body.

- *Animal cell is covered by a cell membrane and lacks cell wall
- *It has organelles like mitochondria, Golgi apparatus, Ribosome, etc..
- *It differs from plant cells since it lacks chloroplast.
- *It has centrioles which are not seen in plant cells.
- *Nucleus is the controlling centre of the cell.

3. Compare the plant cell and the animal cell and complete the illustration given below.



X. Higher order Thinking question:

1. Virus is called Acellular. Why?

- *Virus is made up of a outer protein coat and a nucleic acid.
- *It lacks cell wall, cell membrane, organelles and cytoplasm.
- *Therefore a virus is described as a cellular.

UNIT 5 BASIS OF CLASSIFICATION

VI. Give very short answer

1.What is classification?

Ans. The method of arranging the organisms into groups is called classification

2.List out the five kingdoms classification.

Ans. (i) Monera (ii) Protista (iii) Fungi (iv) Plantae (v) Animalia

3.Define- dichotomous key.

Ans. It is a tool used to classify organisms based on their similarities and differences

4.Write two examples of Monera. **Ans. Bacteria and Blue green algae.**

5.What is binomial nomenclature?

Ans. Binomial nomenclature is an universal system of naming organisms. As per the system, each organism has two names - the first is the Genus name and the second is the Species name.

6.Write the binomial name of a) Human being b) Paddy

Binomial name

a) Human being- **Oryza sativa**

b) Paddy - **Homo sapiens**

7. Write two features of protista.

- (i). It includes unicellular and few simple multicellular eukaryotes.
- (ii). It includes plant like protists (Algae) and animal like protists (protozoans)

VII. Give short Answer:

1. Write the levels of classification.

Ans. The classification of living things include seven levels. they are **, Kingdom, Phylum, Class, Order, Family, Genus and Species.**

2. Differentiate plantae and animalia.

s.no	Kingdom plantae	Kingdom Animalia
1.	They are multicellular eukaryotes that can photosynthesize	They are multicellular, eukaryotic and heterotrophic animals.
2.	The cells have cell wall,	The cells lack cell wall.
3	The cells can perform specialised functions like photosynthesis	They cannot photosynthesize but animals move from place to place unlike plants.
4.	Eg. Ferns, cone bearing plants and flowering plants	Eg. Invertebrates and Vertebrates

3. Write any two merits of Five Kingdom classification.

This system of classification is more scientific and natural.

This system of classification clearly indicates the cellular organization, mode of nutrition, and characters for early evolution of life.

VIII. Give answer in Detail:

1. Explain about five kingdom classification.

- (i) The five kingdom classification was proposed by R.H. Whittaker in 1969.
- (ii) He classified the organisms into five kingdoms on the basis of characteristics like cell structure, mode of Nutrition, Source of Nutrition and body organization.

IMPORTANT CHARACTERISTICS OF FIVE KINGDOMS

	Characteristics	Monera	Protista	Fungi	Plantae	Animalia
1	Cell Type	Unicellular,	Unicellular,	Multicellular, Non-green and	Multicellular	Multicellular,

		Prokaryotic	Eukaryotic.	Eukaryotic	Eukaryotic.	Eukaryotic
2	Nucleus	Absent	Present	Present	Present	Present
3	Body organisation	Cellular level	Cellular level	Multi cellular with loose	Tissue level and organ level	Tissue ,organ and organ system
4	Mode of Nutrition	Auto (or) Heterotrophic	Auto (or) Heterotrophic	Saprophyti, parasitic Sometime symbiotic	Autotrophc	Heterotrophic
5	Example	Bacteria and Blue green algae.	Spirogyra and Chlamydomonas.	Rhizopus and Agaricus.	Herb, Shrub and Trees.	Fish,frog,crocodile,Birds and human being

2. Write short notes on- Binomial Nomenclature.

(i). **Gaspard Bauhin** in 1623, introduced naming of organisms with two names which is known as Binomial nomenclature, and it was implemented by **Carolus Linnaeus** in 1753

(ii). Binomial nomenclature is an universal system of naming organisms. As this system, each organism has two names - the first is the Genus name and the second is the Species name.

(iii). Genus name begins with a capital letter and Species name begins with a small letter. Example: The nomenclature for onion is *Allium sativum*. Genus name is *Allium*, species name is *sativum*.

(iv). Vernacular name is a local name that is familiar for a particular place. Binomial name is an universal name which never changes.

(v) Binomial nomenclature and classification helps scientists to identify organisms and to place them at a particular hierarchy.

UNIT 6 DIGITAL PAINTING

III. Short answer

1. What is the use of shape tool?

Shape tool is used to draw some simple filled and unfilled shapes

2. What is play Arcade Game?

This option is used to select and play one of the four open ended "arcade style"

3. Which tool is used to close Tux Paint window?

Quit tool is used to close Tux Paint window.

4. What is the use of selector?

Selector displays the options associated with the specific tool.

5.What is help area?

Help area is in the bottom of the screen. It provides tips and other information while you draw.

6.What is magic tool?

Magic tool is a set of special tools, selecting one of the 'magic' effects from the selector situated in the right side. This tool provides countless number of special visual effects if it is used in various combination with other tools.

IV.Give Long answers:

What are the short keys in computers?

Tool Name	New	Open	Save	Print	Undo	Redo	Quit
Shortcut Key	Ctrl+N	Ctrl + O	Ctrl + S	Ctrl + P	Ctrl + Z	Ctrl+ Y	Esc