Padasalai's Telegram Groups!

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SURA'S

Science

Term - II

VII - Standard

Based on the New Syllabus and New Textbook for 2019-20

Salient Features :

- Term-wise Guide for the year 2019-20, for Term-II.
- Complete Solutions to Textbook Exercises.
- Exhaustive Additional Question in all Units.
- Unit Test Question paper for each unit, with answer key.

SURA PUBLICATIONS
Chennai

CONTENTS

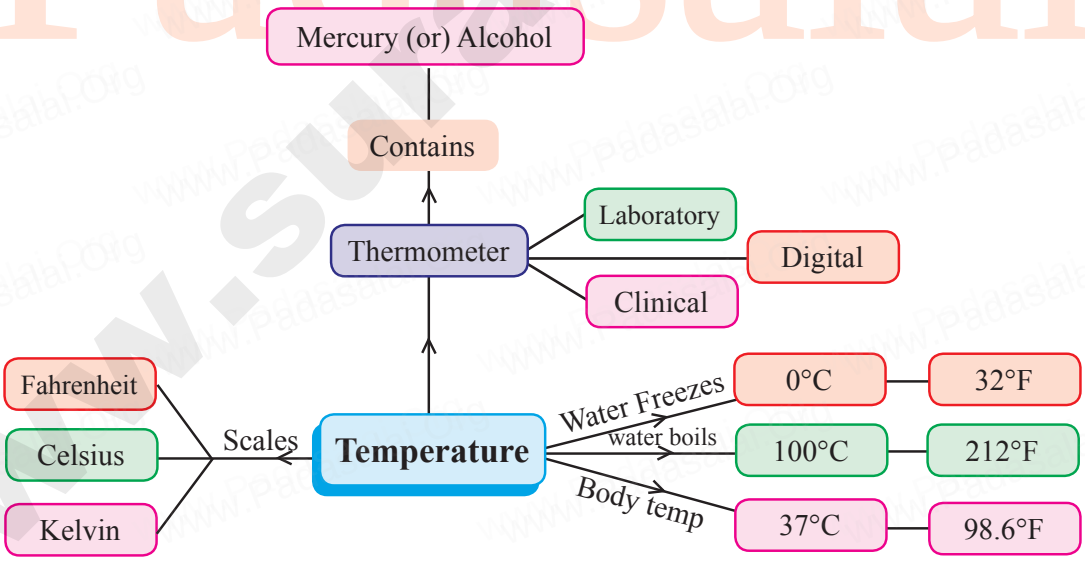
Unit 01

HEAT AND TEMPERATURE

LEARNING OBJECTIVES

- To understand the working principle of thermometer
- To measure temperature using thermometer
- To know about Thermometric Liquids
- To differentiate between Clinical and Laboratory Thermometer
- To know the various units of temperature
- To calculate the density of solids and liquids.
- To convert a temperature from a thermometer scale to others.

Concept Map



Intext Activities

ACTIVITY - 1

What is required?

A small glass bottle, a rubber cork, an empty refill, water, colour, a candle, a fork, a paper.

What to do?

- Take a small glass bottle. Fill it with coloured water.
- Make hole at the centre of the rubber cork.
- Pass empty refill from the hole of the rubber cork.
- Make the bottle air tight and observe the water raised in the refill.
- Make a scale on paper, place it behind the refill and note down the position of the surface of water.
- Hold bottle with fork and supply heat to it with candle. Then observe.

What is the change in the surface of water?

Ans. The level of water increases.

- Stop the supply of heat. When water is cooled, observe the surface of water in the refill,

what change takes place? Why?

Ans. The level of water comes to the original position.

When, a liquid is heated, it expands and when it is cooled down, it contracts.

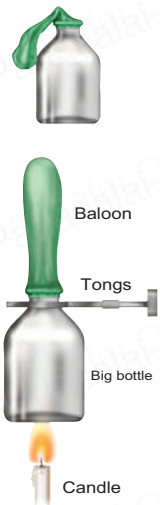
ACTIVITY - 2

What is required?

A big bottle, a balloon, threads, candle, water, fork.

What to do?

- Take one big bottle, and fill some water in it.
- Attach one balloon on the mouth of bottle and fix it with thread.
- Hold bottle with a fork. Heat the bottle with a candle and take observation.
- **What change occurs in the state of balloon after heating the bottle?**



Ans. The balloon expands.

- **What change occurs in the state of balloon after heating the bottle?**
- **Why?**

Ans. The air inside it gets heated and expands. This causes the balloon to stretch and expand.

- Now, let the bottle get cooled down.

5. 0°C = _____K

Solution:

K = C + 273
= 0 + 273
0°C = 273K

6. –20°C = _____K

Solution:

K = C + 273
= –20 + 273
–20°C = 253K

7. 100K = _____°C

Solution:

C = K – 273
= 100 – 273
100K = –173°C

8. 272.15K = _____°C

Solution:

C = K – 273
= 272.15 – 273
272.15K = –0.85°C

Additional Questions

I. Choose the correct answer.

1. Heat energy is the total _____ of the particles that make up a substance.

(a) potential energy (b) kinetic energy
(c) temperature (d) none **[Ans. (b) kinetic energy]**

2. Heat energy is always transferred from _____ to _____ temperatures.

(a) lower, higher (b) higher, lower
(c) conductor, insulator (d) both a and b
[Ans. (b) higher, lower]

3. A clinical thermometer is calibrated from _____ to _____.

(a) 10°C to 100°C (b) 32°C to 110°C
(c) 0°C to 100°C (d) 35°C to 42°C
[Ans. (d) 35°C to 42°C]

4. The thermometer which ranges from –10°C to 110°C is _____.

(a) clinical thermometer (b) digital thermometer
(c) laboratory thermometer (d) All of these
[Ans. (c) laboratory thermometer]

5. Which one of the following scale has lower fixed point as 0°C?

(a) Kelvin scale (b) Fahrenheit scale
(c) Celsius scale (d) All of these **[Ans. (c) Celsius scale]**

6. The lower fixed point on the Celsius scale is _____.

(a) melting point of mercury (b) melting point of ice
(c) boiling point of water (d) none **[Ans. (b) melting point of ice]**

3. **–30°C = _____K**

Solution:

$$K = C + 273$$
$$= -30 + 273$$
$$\textbf{–30°C} = \textbf{243 K}$$

4. **150°F = _____°C**

Solution:

$$C = (F - 32) \times \frac{5}{9}$$
$$= (150 - 32) \times \frac{5}{9}$$
$$= 118 \times \frac{5}{9}$$
$$= \frac{590}{9} = 65.9$$
$$\textbf{150°F} = \textbf{65.9°C}$$

X. Creative questions: HOTS

1. **What is the minimum possible temperature? Is there also a maximum possible temperature?**

Ans. The minimum possible temperature is 0 K. There is no limit to maximum temperature.

2. **Complete the table.**

Temperature	Celsius scale °C	Fahrenheit scale °F	Kelvin scale K
Boiling point of water	100	(i) ?	373.15
(ii) ?	0	32	(iii) ?
Mean temperature of human body	(iv)?	98.6	310.15
Room temperature (average)	72	(v)?	296.15

Ans. **(i)** 212°F **(ii)** Freezing point of water
(iii) 273.15 K **(iv)** 37°C
(v) 23 K

★★★★★

UNIT TEST

Time : 60 min. **Marks : 20**

I. Choose the correct answer: (2×1 = 2)

1. In thermometer when bulb comes in contact with hot object, liquid inside it ____.

(a) contracts (b) expands
(c) remains same (d) none of above

2. Digital thermometer is widely used for the measurement of the temperature due to _____.

(a) mercury (b) analog display
(c) high accuracy (d) low accuracy

II. Fill in the blanks. (2 × 1 = 2)

3. At room temperature mercury is in _____ state.
4. The SI unit of temperature is _____.

III. Write true or false: (1 × 1 = 1)

5. Fahrenheit scale is more sensitive than the Celsius scale.

IV. Give very short answer: (3 × 1 = 3)

6. What is the use of kink in clinical thermometer?
7. Name the principle which is used in thermometer.
8. What is the freezing point of water in Fahrenheit scale?

V. Give short answer: (2 × 2=4)

9. Why do we use mercury in thermometers? Can water be used instead of mercury? What are the problems in using it?
10. Write any two properties of alcohol?

VI. Answer the following in detail: (2 × 4 = 8)

11. Write the similarities and differences between the laboratory and the clinical thermometer.
12. Write the precautions to be followed while using clinical thermometer.

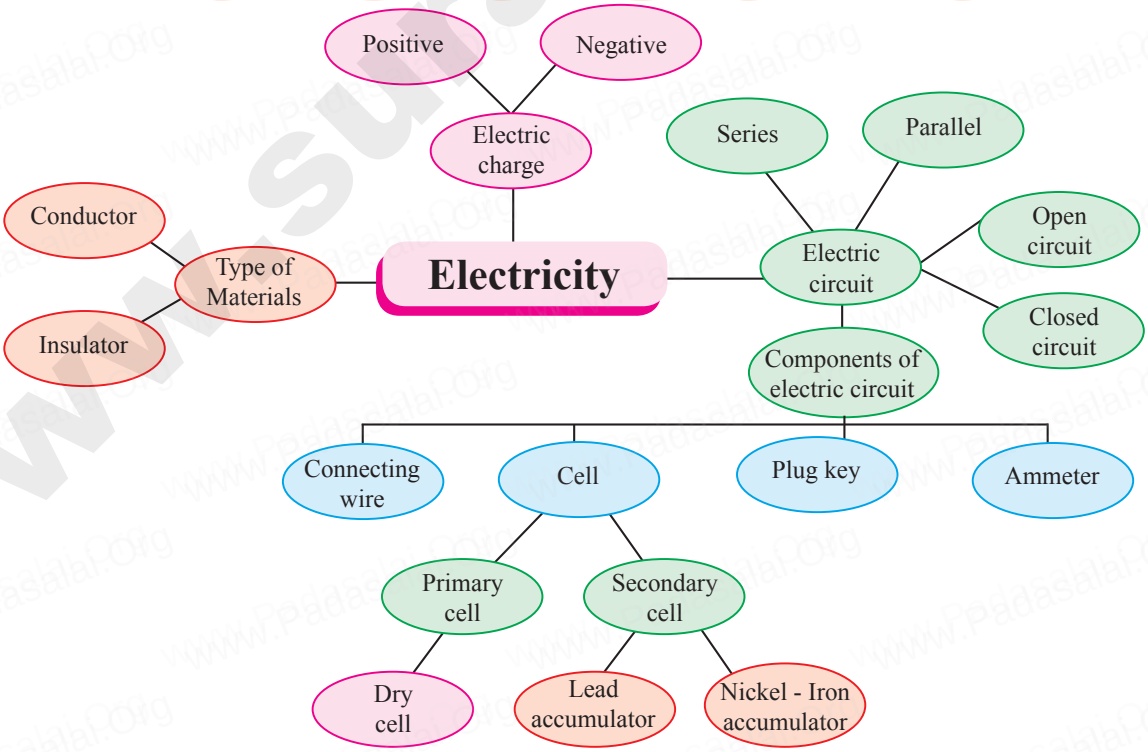
Unit 2

ELECTRICITY

LEARNING OBJECTIVES

- Understanding the flow of electric current and learning to draw the circuit diagram
- Understanding the difference between conventional current and electron flow.
- Understanding the different types of circuit based on flow of electricity and the connection of bulbs in a circuit
- Distinguishing a cell and a battery
- Understanding the effects of electric current and factors affecting the effect of electric current
- Applying their knowledge in identifying the components of electrical circuits.
- Understanding the discrimination between different type of circuits.
- Doing numerical problems and drawing the circuit diagram of their own.

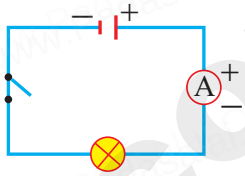
Concept Map



EVALUATION

I. Choose the correct answer :

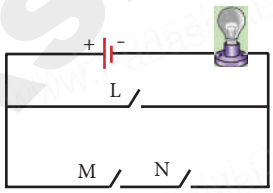
1. **In the circuit diagram below, 10 units of electric charge move past point x every second What is the current in the circuit** _____.



(a) 10 A (b) 1 A
(c) 10 V (d) 1 V

[Ans. (a) 10 A]

2. **In the circuit shown, which switches (L, M or N) must be closed to light up the bulb?**



(a) switch L only
(b) switch M only
(c) Switch M and N only
(d) either switch L or switches M and N

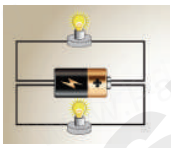
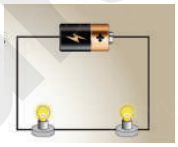
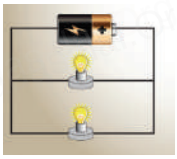
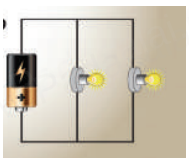
[Ans. (d) either switch L or switches M and N]

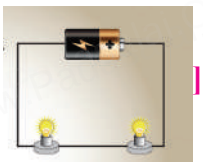
3. **Small amounts of electrical current are measured in milliampere (mA). How many milliampere are there in 0.25 A ?**

(a) 2.5 mA (b) 25 mA (c) 250 mA (d) 2500 mA

[Ans. (c) 250 mA]

4. **In which of the following circuits are the bulb connected in series?**

(a)  (b)  (c)  (d) 

[Ans. (b)  **]**

II. Fill in the blanks :

1. The direction of conventional current is _____ to electron flow.

[Ans. Opposite]

2. One unit of coulomb is charge of approximately _____ protons or electrons..

[Ans. 6.242×10^{18}]

3. _____ is used to measure the electric current. **[Ans. Ammeter]**

4. In conducting materials electrons are _____ bounded with atoms.

[Ans. loosely]

5. S.I. unit of Electrical conductivity of a conductor is _____.

[Ans. siemens/metre(s/m)]

Intext Activities

ACTIVITY - 3

I am so exhausted. I am going to faint. What first aid will you give me to wake up?

Ans. I will recharge immediately.

Additional Questions

I. Choose the correct answer.

1. An electric component used as a safety device in electric circuit is _____.

(a) cell (b) electric wires (c) switch (d) fuse

[Ans. (d) fuse]

2. In an electric circuit, the current starts from

(a) the positive terminal of the battery
(b) the negative terminal of the battery
(c) either of the terminals of the battery
(d) none

[Ans. (a) the positive terminal of the battery]

3. _____ was developed is 1887 by Yei Sakizo of Japan

(a) Alkaline cell (b) Button cell
(c) Lead accumulator (d) Dry cell

[Ans. (d) dry cell]

4. _____ is used to operate devices such as mobile phones, computers and emergency lights.

(a) Primary cell (b) Secondary cell
(c) Lithium cell (d) None

[Ans. (b) Secondary cell]

5. A battery is a group of _____.

(a) only two cells (b) only single cell
(c) two or more cells (d) all of these

[Ans. (c) two or more cells]

6. Which of the following is an electrical conductor?

(a) cork (b) wood (c) plastic (d) silver

[Ans. (d) silver]

7. Which one of the following phenomenon occurs when two naked wires of electricity supply line touch other?

(a) Lightning (b) Short circuiting
(c) Overloading (d) none

[Ans. (b) Short circuiting]

2. **If 5A current flows through a circuit, then convert the current in terms of micro ampere?**

Solution:

$I = 5A$

$1A = 10^6\ \mu A$

$5A = 5 \times 10^6\ \mu A$

$5A = 50,00,000\ \mu A$

3. **If 3A current flows through a circuit, then convert the current in terms of milliampere.**

Solution:

$I = 3A$

$1A = 10^3\ mA$

$3A = 3 \times 1000\ mA$

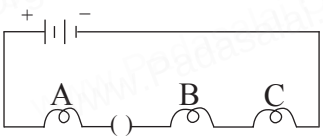
$3A = \mathbf{3000\ mA}$

X. Creative questions: HOTS

1. **What is the difference between fuse wire and a heating wire?**

Ans. The fuse wire has low melting point, whereas the heating wire has a high melting point. Fuse wire is made up of tin-lead alloy, whereas heating wire is made of constantan. (Copper and nickel alloy)

2. **Observe the circuit given:**



(i) Would any of the bulb glow when the switch is in the 'OFF' position?

(ii) What will be the order in which the bulbs A, B and C will glow when the switch is moved to the 'ON' postion?

Ans. (i) No bulb will glow

(ii) All bulbs will glow simultaneously.

★★★★★

UNIT TEST

Time : 60 min. **Marks : 20**

I. Choose the correct answer: (2×1 = 2)

1. **_____ cell is used to operate devices such as mobile phones, computers and emergency lights.**

(a) Primary cell (b) Secondary cell

(c) Lithium cell (d) none

2. **Electricians wear rubber gloves because it is _____.**

(a) soft (b) an insulator

(c) conductor (d) water proof

II. Fill in the blanks. (2 × 1 = 2)

3. _____ are used to remove splinters of steel or iron in hospitals dealing with eye injuries.

4. The direction of conventional current is _____ to electron flow.

III. Write true or false: (1 × 1 = 1)

5. An MCB can be used instead of a fuse in an electrical circuit.

IV. Give very short answer: (3 × 1 = 3)

6. Name some devices that run using heating effect of electric current.

7. What are the effects of electricity?

8. What is the SI unit of electrical conductivity?

V. Give short answer: (2 × 2=4)

9. Define an electric current.

10. What do you mean by an open circuit?

VI. Answer the following in detail: (2 × 4 = 8)

11. Explain the construction and working of a dry cell.

12. Write the difference between primary cell and secondary cell.

★★★★★

Answer Key

I. 1. (b) Secondary cell 2. (b) an insulator

II. 3. Electromagnets 4. Opposite

III. 5. True

IV. 6. Electric bulb, geyser, iron box, fuse.

7. Heating effect, magnetic effect and chemical effect.

8. Siemens / metre

V. 9. An electric current is a flow of electric charge or the amount of charge flowing through a given cross section of a material in unit time.

10. Refer Sura's Guide Q. No. VII - 8 (Additional)

VI. 11. Refer Sura's Guide Q. No. IX - 3

12. Refer Sura's Guide Q. No. VIII - 1 (Additional)

★★★★★

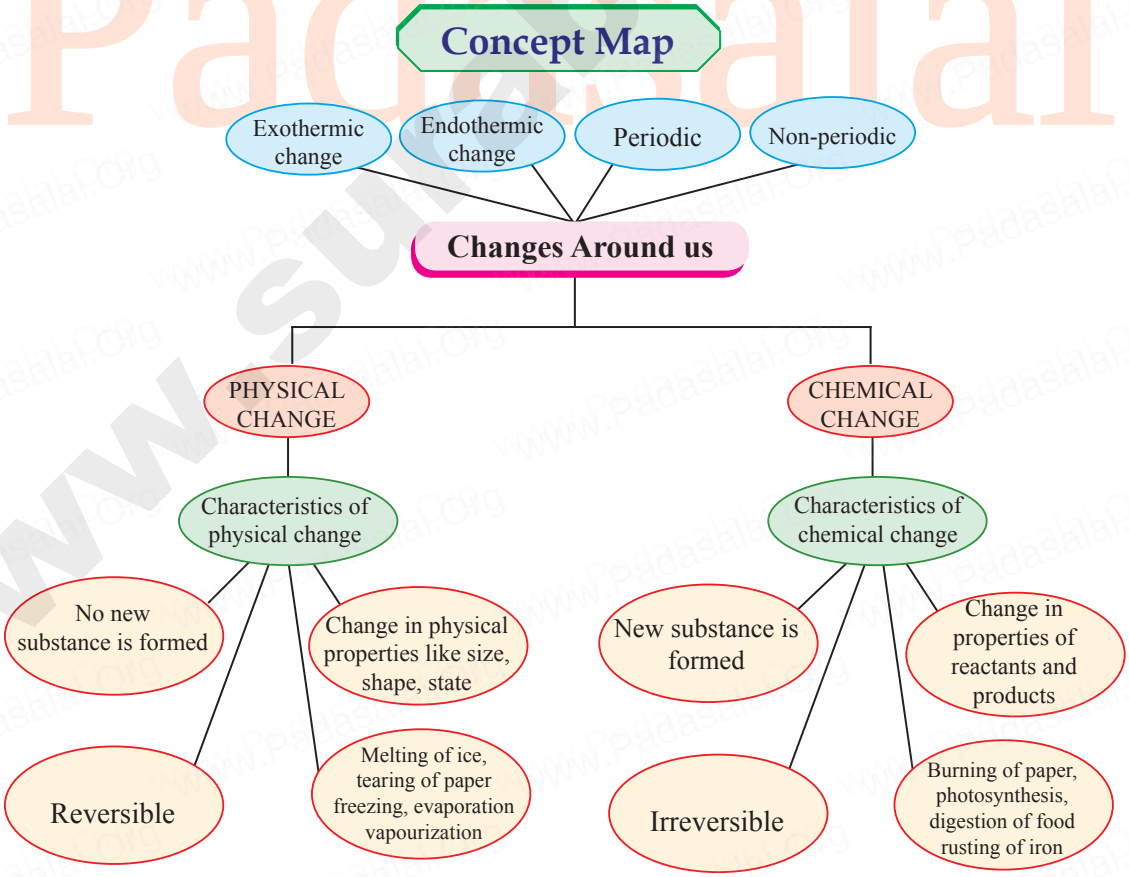
Unit 3

CHANGES AROUND US

LEARNING OBJECTIVES

- To state the effect of heat on solid, liquid and gas and the associated changes in the arrangement of particles upon heating
- To differentiate physical change and chemical change on the basis of particle theory.
- To involve in experiments crystallizing copper sulphate, melting ice, freezing water, sublimating camphor.
- To identify the process as a physical change or chemical change based on its characteristics
- To clarify the process of rusting, burning of paper, curdling of milk, reaction of baking soda with lemon juice
- To distinguish periodic and non-periodic changes.
- To experience the endothermic and exothermic changes through simple activities.

Concept Map



2. **Assertion (A)** : The process of conversion of liquid water to its vapours by heating the liquid is called boiling.

Reason (R) : The process of conversion of water vapours to liquid by cooling the vapours is called condensation.

a. Both A and R are true and R is the correct explanation of A.
b. Both A and R are true but R is not the correct explanation of A.
c. A is true but R is false.
d. A is false but R is true.

[Ans. (b) Both A and R are true but R is not the correct explanation of A.]

3. **Assertion (A)** : Burning of wood log to charcoal is a physical change.

Reason (R) : The products formed of burning a piece of wood can be easily converted back to wood log.

a. Both A and R are true and R is the correct explanation of A.
b. Both A and R are true but R is not the correct explanation of A.
c. A is true but R is false.
d. A is false but R is true. **[Ans. ★ Both A and R are false]**

[The above mentioned options are wrong.
The correct answer is ★ **Both A and R are false**]

4. **Assertion (A)** : The formation of iron oxide from iron is a chemical change.

Reason (R) : For the rust to form from iron, it must be exposed to air and water.

a. Both A and R are true and R is the correct explanation of A.
b. Both A and R are true but R is not the correct explanation of A.
c. A is true but R is false.
d. A is false but R is true.

[Ans. (a) Both A and R are true and R is the correct explanation of A.]

5. **Assertion (A)** : A drop of petrol when touched with finger gives a chill feeling.

Reason (R) : The above phenomenon is an endothermic one.

a. Both A and R are true and R is the explanation of A.
b. Both A and R are true but R is not the correct explanation of A.
c. A is true but R is false.
d. A is false but R is true.

[Ans. (a) Both A and R are true and R is the correct explanation of A.]

7. **Magnesium + oxygen ⟶ magnesium oxide.**
$2Mg + O_2 \longrightarrow 2Mg\,O$

Ans. True.

8. **Evaporation is a fast process and occurs only at the surface of the liquid.**

Ans. False. Evaporation is a **slow** process and occurs only at the surface of the liquid.

9. **The rate of evaporation is more when the surface area is greater.**

Ans. True.

10. **When lemon juice is mixed with soda water, they produce brisk effervescences.**

Ans. True.

IV. Match the following :

1.

	Column I		Column II
1.	Folding of paper	(a)	Crystallization
2.	Oxidation	(b)	Can be reversed
3.	Zinc coating	(c)	Cut apples
4.	Solid in pure form	(d)	Galvanisation

[Ans. (1-b, 2-c, 3-d, 4- a)]

2.

	Column I		Column II
1.	Burning of coal	(a)	Rusting
2.	Painting of a surface	(b)	Evaporation
3.	Dipping iron in water	(c)	Chemical change
4.	Salt from sea water	(d)	Prevention of rusting

[Ans. (1-c, 2-d, 3-a, 4- b)]

3.

	Column I		Column II
1.	Alloying	(a)	Exothermic change
2.	Crystallization	(b)	Periodic change
3.	Soap powder + water	(c)	Mixing of molten solids
4.	Seasonal changes	(d)	Pure solid

[Ans. (1-c, 2-d, 3-a, 4- b)]

V. Very short Answers:

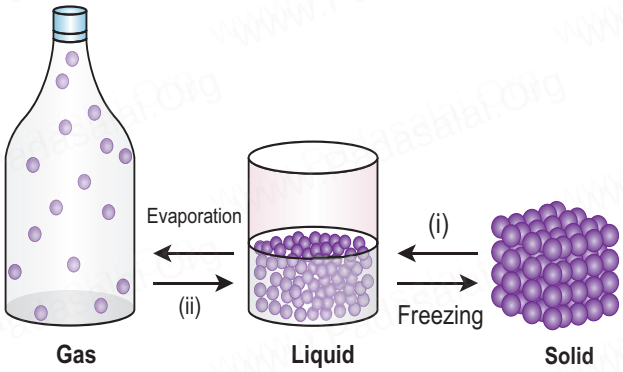
1. **Mention few physical properties of a substance.**

Ans. Lustre, malleability, ductility, density, viscosity, solubility, mass and volume.

2. **What are crystals?**

Ans. Crystals are solids in their purest form that have definite geometrical shapes.

2.



Ans. (i) Melting

(ii) Condensation

X. Higher order Thinking questions (HOTS):

1. Give an example to justify the statement that physical changes can be reversible as well as irreversible.

Ans. (i) When water is frozen into ice, it is a physical change. It is reversible since ice can be converted to water again.

(ii) When a piece of wood is cut into very small pieces, it is a physical change. It is reversible since small pieces of wood cannot be converted back to the bigger piece of wood.

(iii) It shows that physical changes can be reversible as well as irreversible.

2. Photosynthesis is a chemical change. Justify your answer.

Ans. (i) Photosynthesis is the process through which plants convert light energy into chemical energy. Here is the chemical reaction involved.

(ii) As we can see, water and carbon di oxide combine to form glucose and oxygen.

(iii) Since new chemical species are formed, photosynthesis is clearly a chemical change.

3. Why is spoiling of food a chemical change?

Ans. (i) Spoiling of food is a chemical change as it involves the breakdown the food particles by the microbes.

(ii) When the food gets spoiled certain properties of that food is loosed and some are gained, as there is a new change happening it is a chemical change.

(iii) Spoilage of food is indicated by the foul-smell. So change of odour is an indicator of a chemical change.

★★★★★

UNIT TEST

Time : 60 min. **Marks : 25**

I. Choose the correct answer: (2×1 = 2)

1. **The chemical change is _____ .**

(a) water to clouds (b) growth of a tree
(c) cow dung to bio-gas (d) ice-cream to molten ice-cream.

2. **_____is an example of a periodic change.**

(a) Earthquake (b) Formation of rainbow in sky
(c) Occurrence of tides in seas (d) Showering of rain

II. Fill in the blanks. (2 × 1 = 2)

3. Respiration is a _____ change.

4. Stretching a gold coin into a ring is a _____ change.

III. Write true or false If false, give the correct answer: (1 × 1 = 1)

5. Taking a glass of water and freezing it by placing it in the freezer is a chemical change.

IV. Answer any six of the following. (6 × 2 = 12)

6. Mention any two endothermic reactions.

7. Is solar eclipse a periodic change? Give your reason.

8. What is the difference between dissolution of sugar and burning of sugar?

9. **Analogy:**

Wood to saw dust:_____ :: Wood to Ash: Chemical change

Forest fire: _____ change::Change in period in a school: periodic change

10. A very hot glass on putting in cold water cracks. What does this change indicate?

11. Assertion - Reason type question:

Assertion (A) : The explosion of fire cracker is a physical change.

Reason (R) : A physical change is a reversible change.

Option:

a. Both A and R are true and R is the correct explanation of A.
b. Both A and R are true but R is not the correct explanation of A.
c. A is true but R is false.
d. A is false but R is true.

V. Answer the following in detail. **(2 × 4 = 12)**

12. Distinguish between the characteristics of solid, liquid and gas.

13. What are the characteristics of physical change. Give example.

Answer Key

II. 1. (c) cow dung to bio-gas 2. (c) Occurrence of tides in seas

II. 3. exothermic chemical 4. physical

III. 5. False. Taking a glass of water and freezing it by placing it in the freezer is a physical change.

IV. 6. (i) Melting of ice. (ii) Dissolution of glucose in water.

7. Refer Sura's Guide Q. No. VIII - 4

8. Refer Sura's Guide Q. No. VIII - 5

9. (i) Physical change (ii) Non-periodic

10. Refer Sura's Guide Q. No. X - 8

11. (d) A is false but R is true

VI. 12. Refer Sura's Guide Q. No. VII - 1 (Additional)

13. Refer Sura's Guide Q. No. VII - 4 (Additional)

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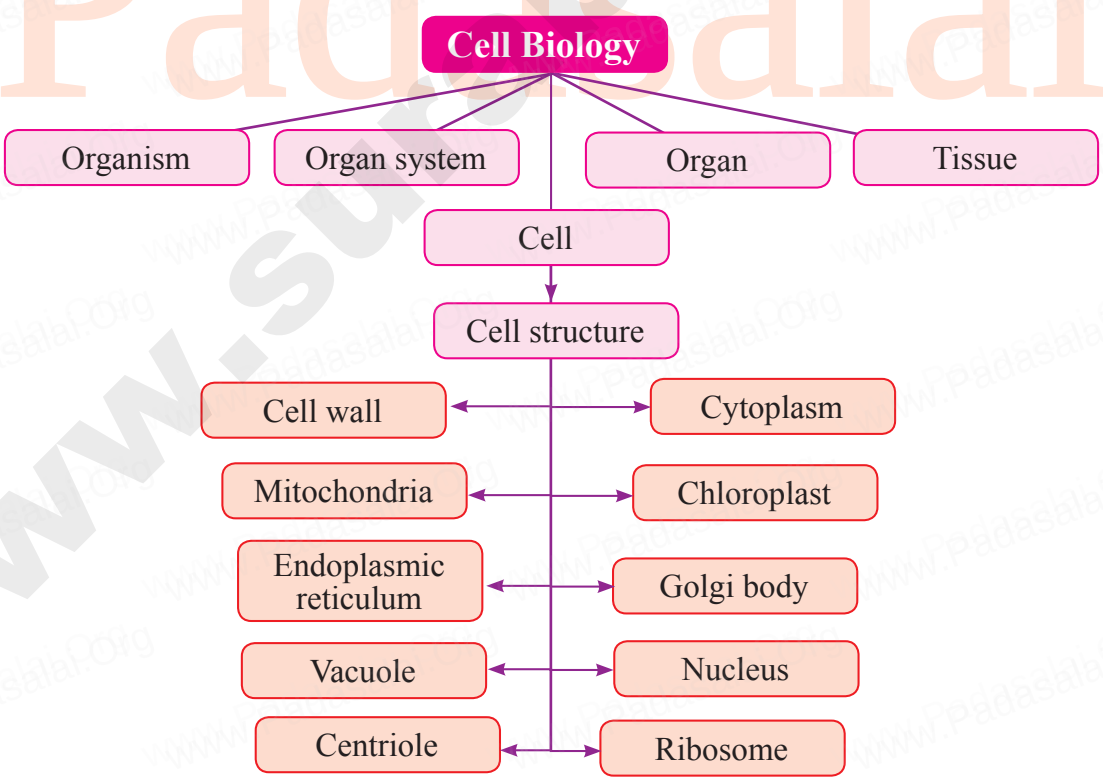
Unit 4

CELL BIOLOGY

LEARNING OBJECTIVES

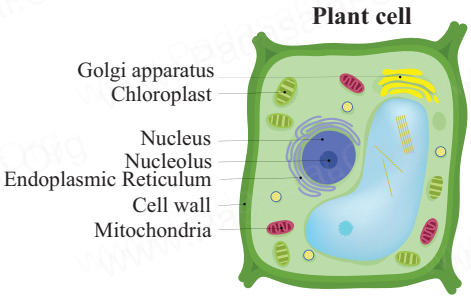
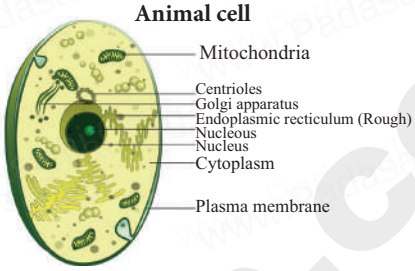
- To compare the plant cell with the animal cell and understand their similarities and dissimilarities.
- To understand the cell as a fundamental unit of life.
- To know and understand the different types of Human cells and their related functions.
- To know the functions of different cell organelles.
- To compare different cell organelles, their functions and know their similarities and specialties.

Concept Map



➞ ACTIVITY - 3

Study the pictures given and write the differences between cells that you observe in the given table.

Plant cell	Animal cell
	
1. Nucleus is present, lies on one side. 2. Centriole is absent. 3. Large vacuole is present. 4. Cell wall is present. 5. Chloroplast is present	1. Nucleus is present in the centre. 2. Centriole is present. 3. Small vacuole is present. 4. Cell wall is absent. 5. Chloroplast in absent.

➞ ACTIVITY - 4

Summarise what you have learnt Now you've studied the internal structure of a cell. Let us summerise what we have learnt so far Complete this table by filling the main function of each of the cell structures.

S.No	Cell Structure	Function(s)
1.	Cell membrane	Boundary of an animal cell.
2.	Cell wall	Supporter and protector.
3.	Cytoplasm	Giving a cell its shape.
4.	Mitochondria	Energy releaser.
5.	Vacuole	Stores cell sap
6.	Chloroplast	Food producers.
7.	Endoplasmic reticulum	Synthesis protein lipids, steroids and transport them

Additional Questions

I. Choose the correct answer.

1. _____ is the largest organelle.

(a) Chloroplast (b) Mitochondria
(c) Nucleus (d) Golgi apparatus **[Ans. (c) Nucleus]**

2. The _____ cells are spindle shaped.

(a) muscle (b) nervous
(c) RBC (d) epithelial **[Ans. (a) muscle]**

3. List the differences between Plant cell and Animal cell.

Ans.

S.No	Plant cell	Animal Cell
1.	It has cell wall.	Cell wall is absent.
2.	It has plastids such as chloroplasts, chromoplasts etc.	Plastids are absent.
3.	Centrioles are not seen.	It has centrioles which help in cell division.
4.	It has a large vacuole.	Vacuoles are small or absent.
5.	It is larger in size.	It is smaller in size.

IX. Hots:

1. Bacterial cells can prepare food. Do you agree?

Ans. Yes, some bacterial cells have chlorophyll pigments and can prepare food.

2. Stem cells are used by doctors to treat diseases. Do you agree with this statement?

Ans. Yes. Stem cells can divide and form any other cell type and hence can be used to cure several diseases like spinal cord injury.

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UNIT TEST

Time : 60 min. **Marks : 25**

I. Choose the correct answer: (4×1 = 4)

1. _____ is the outer most layer of an animal cell.

(a) Cell wall (b) Cell membrane
(c) Nucleus (d) Nuclear membrane

2. _____ helps in protein synthesis

(a) Ribosome (b) Centriole (c) Golgi (d) Lysosome

3. _____ lacks a nucleus.

(a) RBC (b) WBC (c) Nerve cell (d) Muscle cell

4. _____ is a food producer.

(a) Mitochondria (b) Chloroplast
(c) Leucoplast (d) Endoplasmic reticulum

II. Fill in the blanks. (3 × 1 = 3)

5. Cytoplasm plus nucleoplasm is equal to _____.

6. _____ is called as sucidal bag of the cell.

7. _____ contain coloured pigments in a plant cell.

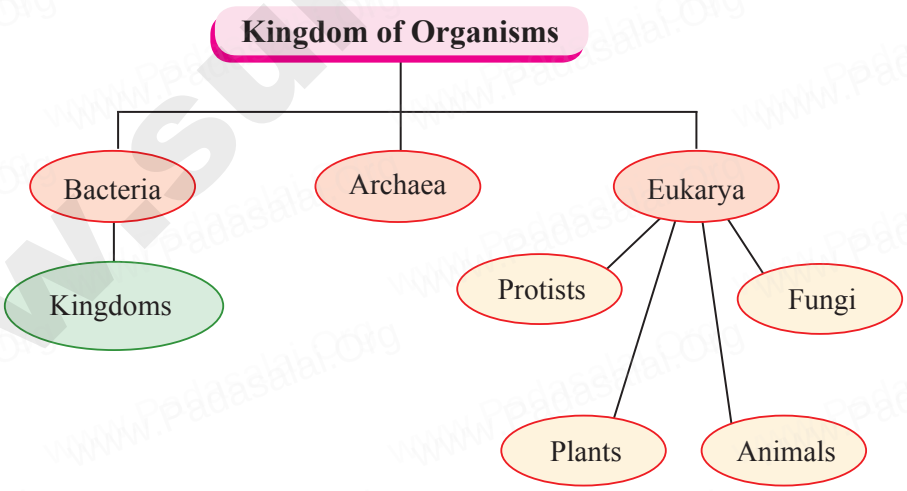
Unit 5

BASIS OF CLASSIFICATION

LEARNING OBJECTIVES

- To understand the need for dichotomous classification
- To classify animals according to their characteristic features
- To know the classification of animals and get the knowledge about invertebrates and vertebrates
- To acquire knowledge about the classification of plants
- To know the importance of five kingdom classification
- To understand the Binomial Nomenclature

Concept Map



2. Differentiate plantae and animalia.

Ans.

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.

Ans. (i) This system of classification is more scientific and natural.

(ii) 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.

Ans. (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, Prokaryotic.	Unicellular, Eukaryotic.	Multicellular, Non-green and Eukaryotic.	Multicellular, Eukaryotic.	Multicellular, Eukaryotic.
2.	Nucleus	Absent.	Present.	Present.	Present.	Present.
3.	Body Organisation	Cellular level	Cellular level	Multi cellular with loose tissue.	Tissue level and organ level.	Tissue, organ and organ system.
4.	Mode of Nutrition	Auto (or) Heterotrophic.	Auto (or) Heterotrophic.	Saprophytic, parasitic sometime symbiotic	Autotrophic.	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.

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

IX. HOTS :

Which kingdom has saprophytic, parasitic and symbiotic nutrition. Why?

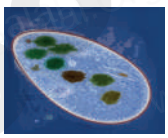
Ans. Kingdom Fungi comprises of unicellular to multicellular organisms which are heterotrophic in their mode of nutrition. They do not contain chlorophyll and cannot photosynthesize. Hence they show modes of Nutrition such as:

Saprophytic	-	Obtaining nutrition from dead matter	Eg. Mucor
Parasitic	-	Obtaining nutrition from living organisms (host).	Eg. Cercospora
Symbiotic	-	Obtaining nutrition through a mutually beneficial relationship with another organism.	Eg. Lichens

X. See the Diagram and write the kingdom :

Pictures of some living organisms are given below. Identify the kingdom to which each of these belong and write the kingdom name in the blanks provided.

(a) _____



(b) _____

(c) _____

(d) _____

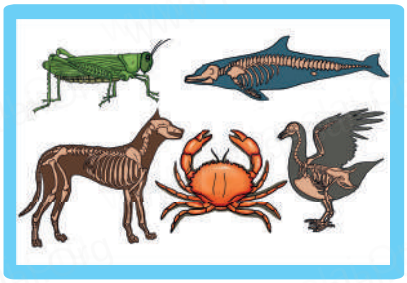
(e) _____

Ans. **(a)** Kingdom plantae **(b)** Kingdom protista **(c)** Kingdom protista
(d) Kingdom Animalia **(e)** Kingdom Fungi

Intext Activities

→ ACTIVITY - 2

Fill up the blanks with the suitable organisms



IX. Creative questions: HOTS

1. Blue green algae are not placed under kingdom protista whereas other algae are placed under it.

Ans. Blue green algae has prokaryotic cells like bacteria. They lack lake a proper nucleus. Therefore they are placed with bacteria in kingdom monera.

2. How can you differentiate a Prokaryotes cell from Eukaryotes cell.

Ans.

S.No	Prokaryotes	Eukaryotes
1.	Nuclear material is not bound by nuclear membrane.	Nucleus has a nuclear membrane
2.	Cell organelles are absent. Eg. bacteria.	Cell organ cells are present. Eg. higher plants.

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UNIT TEST

Time : 60 min. **Marks : 25**

I. Choose the correct answer: (4×1 = 4)

1. The largest division of the living world is _____
(a) Order (b) Kingdom (c) Phylum (d) Family

2. The binomial name of pigeon is _____.
(a) *Homo sapiens* (b) *Rattus rattus*
(c) *Mangifera indica* (d) *Columbo livia*

3. _____ is not oviparous.
(a) Snake (b) Crow (c) Frog (d) Human being

4. _____ belongs to Phylum Platyhelminthes.
(a) Ascaris (b) Liver fluke (c) *Leucosolenia* (d) *Euglena*

II. Fill in the blanks. (3 × 1 = 3)

5. _____ is an example for monocot.

6. _____ introduced binomial nomenclature.

7. _____ are called Amphibious plants.

III. True or false. (3 × 1 = 3)

8. True nucleus is seen in prokaryotic cell.

9. Fishes are aquatic vertebrates.

10. The angiosperms are evergreen trees.

IV. Answer any five of the following. (5 × 2 = 10)

11. What is a dichotomous key?

12. Match the following:

1.	Protozoa	(a)	Spongy bones
2.	Annelida	(b)	Hermaphrodite
3.	Coelenterata	(c)	Soft body
4.	Aves	(d)	Colonial forms
5.	Mollusca	(e)	Conjugation

13. Assertion and Reason:

Assertion (A) : Blue green algae are prokaryotes.

Reason (R) : They do not have a true nucleus.

(a) Assertion is correct, Reasoning is correct

(b) Assertion is correct, Reasoning is incorrect

(c) Assertion is incorrect, Reasoning is correct

(d) Assertion & Reasoning are incorrect

14. List two differentiate Angiosperms and Gymnosperms

15. Name the following:

(i) A phylum with diploblastic animals _____.

(ii) A phylum which has hermaphrodite animal _____.

V. Long Answer. (5 × 1 = 5)

16. Write short notes on – Binomial Nomenclature.

Answer Key

I. 1. (b) Kingdom 2. (d) *Columbo livia* 3. (d) Human being
4. (b) Liver fluke

II. 5. Paddy 6. Gaspard Bauhin 7. Mosses

III. 8. False. True nucleus is seen in eukaryotic cell.
9. True
10. False. The gymnosperms are evergreen trees.

IV. 11. It is a tool used to classify organisms based on their similarities and differences.
12. 1-e. 2-b, 3-d, 4- a, 5 -c
13. (a) Assertion is correct, Reasoning is correct
14. Refer Sura's Guide Q. No. VII - 3 (Additional)
15. Refer Sura's Guide Q. No. VI - 1 (Additional)

V. 16. Refer Sura's Guide Q. No. VIII - 2

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Unit 6

DIGITAL PAINTING

LEARNING OBJECTIVES

- know how to draw a picture through the software Tux Paint
- explore their creative thinking
- learn arithmetic calculations through the software Tux Math

EVALUATION

I. Choose the correct answer. :

1. Tux paint software is used to _____

(a) Paint (b) Program (c) Scan (d) PDF **[Ans. (a) Paint]**

2. Which toolbar is used for drawing and editing controls in tux paint software?

(a) Left Side: Toolbar (b) Right side : Toolbar
(c) Middle : Tool bar (d) Bottom : Tool bar

[Ans. (a) Left Side: Toolbar]

3. What is the shortcut key for undo option?

(a) Ctrl + Z (b) Ctrl + R
(c) Ctrl + Y (d) Ctrl +N **[Ans. (a) Ctrl + Z]**

4. Tux Math software helps in learning the _____

(a) Painting (b) Arithmetic
(c) Programming (d) Graphics **[Ans. (b) Arithmetic]**

5. In Tux Math, Space cadet option is used for _____.

(a) Simple addition (b) Division
(c) Drawing (d) Multiplication

[Ans. (a) Simple addition]

II. Answer the following Questions:

1. What is Tux Paint ?

Ans. Tux Paint is a free drawing program designed for young children.

2. What is the use of Text Tool ?

Ans. Text tool is used to type texts.