



SELECTION

SEVENTH STANDARD

7

TERM - II

SCIENCE

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SELECTION 7 SCIENCE**2****TERM -II**

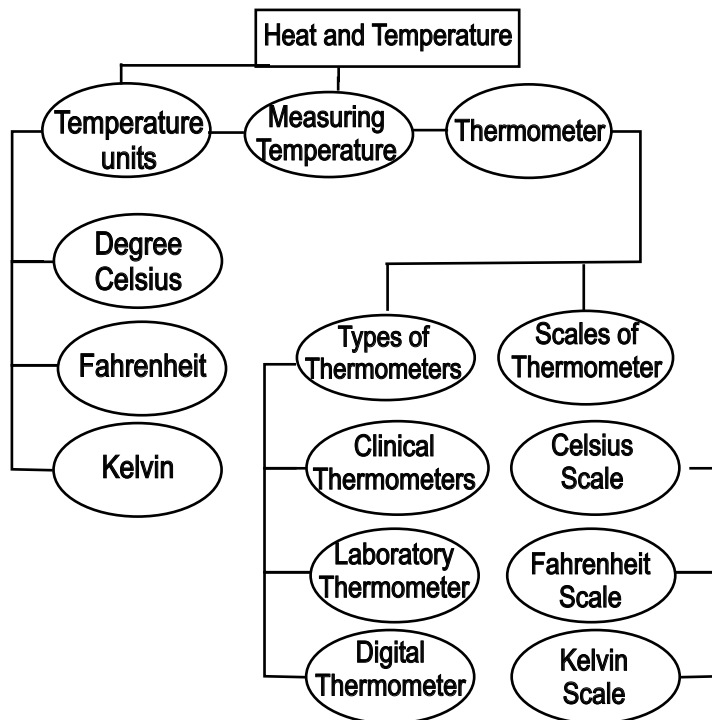
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SELECTION 7 SCIENCE SEVENTH STANDARD TERM - II

Unit - 1. Heat and Temperature

Mindmap



Evaluation**I. Choose the correct answer :****1. International unit of measuring temperature is**

- a) Kelvin b) Fahrenheit
c) Celsius d) Joule

Ans : a) Kelvin**2. In thermometer when bulb comes in contact with hot object, liquid inside it**

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

Ans : a) expands**3. The body temperature of a healthy man is;**

- a) 0°C b) 37°C c) 98°C d) 100°C

Ans : b) 37°C**4. Mercury is often used in laboratory thermometers because it _____**

- a) is a harmless liquid
b) is silvery in colour and is attractive in appearance
c) Expands uniformly
d) is a low cost liquid

Ans : c) Expands uniformly**5. Which of the following temperature**

conversions is incorrect

$$K (\text{Kelvin}) = ^\circ\text{C} (\text{Celsius}) + 273.15$$

- | | $^\circ\text{C}$ | K | | $^\circ\text{C}$ | K |
|----|------------------|---------|--|------------------|---|
| a) | -273.15 | 0 | | | |
| b) | -123. | +150.15 | | | |
| c) | +127. | +400.15 | | | |
| d) | +450 | +733.15 | | | |

Ans : d) +450 +733.15**II. Fill in the blanks :**

1. Doctor uses _____ thermometer to measure the human body temperature.

Ans : clinical

2. At room temperature Mercury is in _____ state.

Ans : liquid

3. Heat energy transfer from _____ to _____

Ans : hot substance, cold substance

4. -7°C temperature is _____ than 0°C temperature.

Ans : lower

5. The common laboratory thermometer is a _____ thermometer

Ans : mercury

III. Match the following

i) Clinical thermometer	A form of energy
ii) Normal temperature of human body	100°C
iii) Heat	37°C
iv) Boiling point of water	0°C
v) Melting point of water	Kink

Ans :

i) Clinical thermometer	Kink
ii) Normal temperature of human body	37°C
iii) Heat	A form of energy
iv) Boiling point of water	100°C
v) Melting point of water	0°C

IV. Give very short answer

1. Temperature of Srinagar (J&K) is -4°C and in Kodaikanal is 3°C which of them has greater temperature ? What is the difference between the temperatures of these two places?

Ans : Kodaikanal has greater temperature.

Temperature difference = -4°C - 3°C

Temperature difference = -7°C

2. Jyothi was prepared to measure the temperature of hot water with a clinical thermometer. Is it right or wrong? Why?

Ans : No. It is wrong. Because the mercury used in a clinical thermometer expands at high temperature. The glass will burst due to excessive pressure created by expansion of mercury.

3. A clinical thermometer not used to measure the temperature of air?

Ans : ★ Clinical thermometer is made up of mercury is used to measure the temperature of our body.

★ It measures temperature only when it is in contact with our body. So, it cannot be used to measure the temperature of air.

4. What is the use of kink in clinical thermometer?

Ans : All clinical thermometers have a kink that prevents the mercury from flowing back into the bulb when the thermometer is taken out of the patient's mouth. So that the temperature can be noted conveniently.

5. Why do we jerk a clinical thermometer before we measure body temperature?

Ans : We jerk the thermometer a few times to bring the level of the mercury down.

V. Give Short Answer

1. Why do we use Mercury in the thermometer? Can water be used instead of mercury? What are the problems in using it?

Ans : ★ Mercury is used in thermometers as it remains in liquid form.

- ★ Mercury has high coefficient of expansion.
- ★ Water can be used instead of mercury.
- ★ But below 0°C and above 100°C can't be measured by using the water.

2. Swathi kept a laboratory thermometer in hot water for some time and took it out to read the temperature. Ramani said it was a wrong way of measuring temperature. Do you agree with Ramani? Explain your answer.

Ans : ★ Yes, I agree with Ramani.

- ★ Temperature is read while keeping the Laboratory thermometer in the hot water.
- ★ Temperature should not be measured after removing the thermometer from hot water.

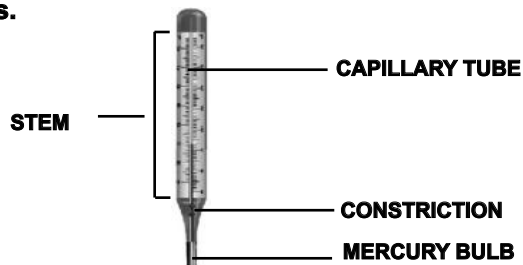
3. The body temperature of Srinath is 99°F . Is he suffering from fever? If so, why?

Ans : ★ Yes, he is suffering from fever.

- ★ Because the normal body temperature is 98.6°F
- ★ The body temperature of Srinath is 99°F which is higher than normal body temperature.

VI. Give Long answer

1. Draw the diagram of a clinical thermometer and label its parts.



2. State similarities and differences between the laboratory thermometer and the clinical thermometer.

Ans :

Similarities : ★ In both laboratory thermometer and the clinical thermometer mercury is used to measure the temperature.

Differences :

Difference between clinical and laboratory thermometer

Clinical Thermometer	Laboratory Thermometer
Clinical thermometer is scaled from 35°C to 42°C or from 94°F to 108°F.	Laboratory thermometer is generally scaled from -10°C to 110°C.
Mercury level does not fall on its own, as there is a kink near the bulb to prevent the fall of mercury level.	Mercury level falls on its own as no kink is present.
Temperature can be read after removing the thermometer from armpit or mouth.	Temperature is read while keeping the thermometer in the source of temperature, e.g. a liquid or any other thing.
To lower the mercury level jerks are given.	No need to give jerk to lower the mercury level.
It is used for taking the body temperature.	It is used to take temperature in laboratory.

VII. Higher Order Thinking Questions

1. What must be the temperature in Fahrenheit, so that it will be twice its value in Celsius?

Ans : Relation between Fahrenheit scale and Celsius scales.

$$\frac{F - 32}{9} = \frac{C}{5}$$

$$F = C \frac{9}{5} + 32$$

Given $F = 2C$

$$2C = C \frac{9}{5} + 32$$

$$= \frac{10C - 9C}{5} = 32$$

$$= \frac{C}{5} = 32$$

$$C = 32 \times 5 = 160$$

$$C = 160^\circ$$

$$\therefore F = 2C = 2 \times 160^\circ = 320^\circ F$$

The temperature in Fahrenheit = $320^\circ F$

2. Go to a veterinary doctor (a doctor who treats animals). Discuss and find out the normal temperature of domestic animals and birds.

Ans : Normal temperature of domestic animals
= 38.3° to $39.2^\circ C$

Normal temperature of a bird = $40^\circ C$

Numerical Problems

Solved examples

1. How much will the temperature of $68^\circ F$ be in Celsius and Kelvin?

Given :

Temperature in Fahrenheit = $F = 68^\circ F$

Temperature in Celsius = $C = ?$

Temperature in Kelvin = $K = ?$

$$\frac{(F-32)}{9} = \frac{C}{5}$$

$$\frac{(68-32)}{9} = \frac{C}{5}$$

$$C = 5 \times \frac{36}{9} = 20^\circ C$$

$$K = C + 273.15 = 20 + 273.15 = 293.15$$

Thus, the temperature in Celsius = $20^\circ C$
and in Kelvin = $293.15 K$

2. At what temperature will its value be same in Celsius and in Fahrenheit?

Given : If the temperature in Celsius is C , then the temperature in Fahrenheit (F) will be same,

$$\begin{aligned} \text{i.e. } F &= C & \frac{(F-32)}{9} &= \frac{C}{5} & (or) \\ & & \frac{(C-32)}{9} &= \frac{C}{5} \\ & & (C-32) \times 5 &= C \times 9 \end{aligned}$$

$$5C - 160 = 9C$$

$$4C = -160$$

$$C = F = -40$$

The temperatures in Celsius and in Fahrenheit will be same at -40

3. Convert the given temperature :

1) $45^{\circ}\text{C} = \dots\dots\dots^{\circ}\text{F}$

Ans : $45^{\circ}\text{C} = \dots\dots\dots^{\circ}\text{F}$

$$\frac{(F-32)}{9} = \frac{C}{5}$$

$$F = C \frac{9}{5} + 32 \quad [C = 45]$$

$$F = 45 \times \frac{9}{5} + 32 = 81 + 32 = 113^{\circ}$$

$$\boxed{45^{\circ}\text{C} = 113^{\circ}\text{F}}$$

2) $20^{\circ}\text{C} = \dots\dots\dots^{\circ}\text{F}$

Ans : $20^{\circ}\text{C} = \dots\dots\dots^{\circ}\text{F}$

$$\frac{(F-32)}{9} = \frac{C}{5}$$

$$F = C \frac{9}{5} + 32 \quad [C = 20]$$

$$F = 20 \times \frac{9}{5} + 32 = 36 + 32 = 68^{\circ}$$

$$\boxed{20^{\circ}\text{C} = 68^{\circ}\text{F}}$$

3) $68^{\circ}\text{F} = \dots\dots\dots^{\circ}\text{C}$

Ans : $68^{\circ}\text{F} = \dots\dots\dots^{\circ}\text{C}$

$$\frac{(F-32)}{9} = \frac{C}{5}$$

$$C = (F - 32) \frac{5}{9} \quad [F = 68]$$

$$C = (68 - 32) \times \frac{5}{9} = 36 \times \frac{5}{9} = 20^{\circ}$$

$$\boxed{68^{\circ}\text{F} = 20^{\circ}\text{C}}$$

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4) 185°F = °C

Ans : 185°F = °C

$$\frac{(F-32)}{9} = \frac{C}{5}$$

$$C = (F-32) \frac{5}{9} \quad [F = 185]$$

$$C = (185-32) \times \frac{5}{9} = \cancel{153} \times \frac{5}{9} = 85^\circ$$

$$\boxed{185^\circ\text{F} = 85^\circ\text{C}}$$

5) 0°C = K

Ans : K = 273.15 + C

$$= 273.15 + 0$$

$$= 273.15 \text{ K}$$

$$\boxed{0^\circ\text{C} = 273.15 \text{ K}}$$

6) -20°C = K

Ans : K = 273.15 - 20

$$= 253.15 \text{ K}$$

$$\boxed{-20^\circ\text{C} = 253.15 \text{ K}}$$

7) 100 K = °C

Ans : C = K - 273.15

$$= 100 - 273.15$$

$$C = -173.15^\circ\text{C}$$

$$\boxed{100 \text{ K} = -173.15^\circ\text{C}}$$

8) 272.15 K = °C

Ans : C = K - 273.15

$$= 272.15 - 273.15$$

$$= -1^\circ\text{C}$$

$$\boxed{272.15 \text{ K} = -1^\circ\text{C}}$$

Additional Questions and Answers

I. Choose the best answer.

1. In humans, the average internal temperature is

a) 96.8°F b) 97.8°F

c) 98.6°F d) 95.6°F

Ans : C) 98.6°F

2. A laboratory thermometer has only thescale

a) Celsius b) Fahrenheit

c) Kelvin d) degree

Ans : a) Celsius

3. A laboratory thermometer can measure temperaturesthe clinical thermometer.

- a) equal to b) less than
c) higher than d) as same as

Ans : c) higher than

4. The Fahrenheit scale issensitive than the Celsius scale

- a) more b) less
c) more or less d) equal

Ans : a) more

5.is a common unit of measure human body temperature

- a) Kelvin b) Fahrenheit
c) Celsius d) Centigrade

Ans : b) Fahrenheit

II. Fill in the blanks

1. Temperature is a measure of the of the particles in an object.
Ans : average kinetic energy

2. In a thermometer, when liquid gets heat, it
Ans : expands

3. is the most common instrument to measure temperature
Ans : Thermometer

4. The freezing point of alcohol is less than
Ans : -100°C

5. The commonly used thermometers are and
Ans : clinical thermometers, laboratory thermometers

III. Match the following

a) Kelvin	273.15 K
b) Celsius	$C (9/5) + 32$
c) Fahrenheit	$(F-32) 5/9$
d) 0°C	$273.15 + C$

Ans :

a) Kelvin	$273.15 + C$
b) Celsius	$(F-32) 5/9$
c) Fahrenheit	$C (9/5) + 32$
d) 0°C	273.15 K

IV. Very Short answers :

1. Which thermometer is used to measure weather reports?

★ Weather reports are measured by maximum-minimum thermometer.

2. In digital thermometer which is used instead of mercury?

- ★ In digital thermometer sensor is used instead of mercury.

3. What is relation between Fahrenheit scale and Celsius scale ?

$$\frac{(F-32)}{9} = \frac{C}{5}$$

V. Short answers :**1. What is temperature?**

- ★ The measurement of warmness or coldness of a substance is known as its temperature.

2. What are the units used to measure the temperature?

- ★ Degree celsius
★ Fahrenheit
★ Kelvin

3. Say any two properties of mercury.

- ★ It's expansion is uniform
★ It is a good conductor of heat.

4. State the precautions to be followed while using a clinical thermometer.

- ★ The thermometer should be washed before and after use with an antiseptic solution
★ Jerk the thermometer a few times to bring the level of mercury down.
★ Do not hold the thermometer by its bulb.

5. The human body temperature is 37°C. Convert it into Kelvin.

$$\begin{aligned} K &= C + 273 \\ &= 37 + 273 \\ &= 310 \text{ K} \end{aligned}$$

The human body temperature is 310 K

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 : Water gets heated the refill expands

- Stop the supply of heat. When water is cooled, observe the surface of water in the refill, what change takes place? Why?

Ans : The refill gets contract because the water gets cooled down.

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 : Balloon expands

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

Ans : Because of heat energy the gas molecules expand.

Now, let the bottle get cooled down.

- **What change occurs in the state of balloon after bottle gets cool down? Why?**

Ans : Balloon contracts. Because of cooling of bottle.

When gases substance gets heat, it expands; when it cools it contracts.

Why does a tyre get burst in summer?

Ans : Because of high heat energy the gaseous molecules expands vigorously. So, the tyre burst in summer.

**ACTIVITY 3****Measure your body temperature:**

Wash the thermometer preferably with an antiseptic solution. Hold it firmly by the end and give it a few jerks. These jerks will bring the level of Mercury down. Ensure that it falls below 35°C (95°F). Now place the thermometer under your tongue or arm pit. After one minute, take the thermometer out and note the reading. It tells you your body temperature.

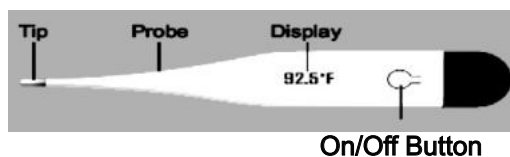
What did you record as your body temperature?

Ans : 99°F

ACTIVITY 4**Use of Laboratory thermometer :**

- Take some water in a beaker.
- Take a laboratory thermometer and immerse its bulb end in water; holding it vertically. Ensure to dip whole portion of bulb end. The bulb end should not touch the bottom or side of the beaker.

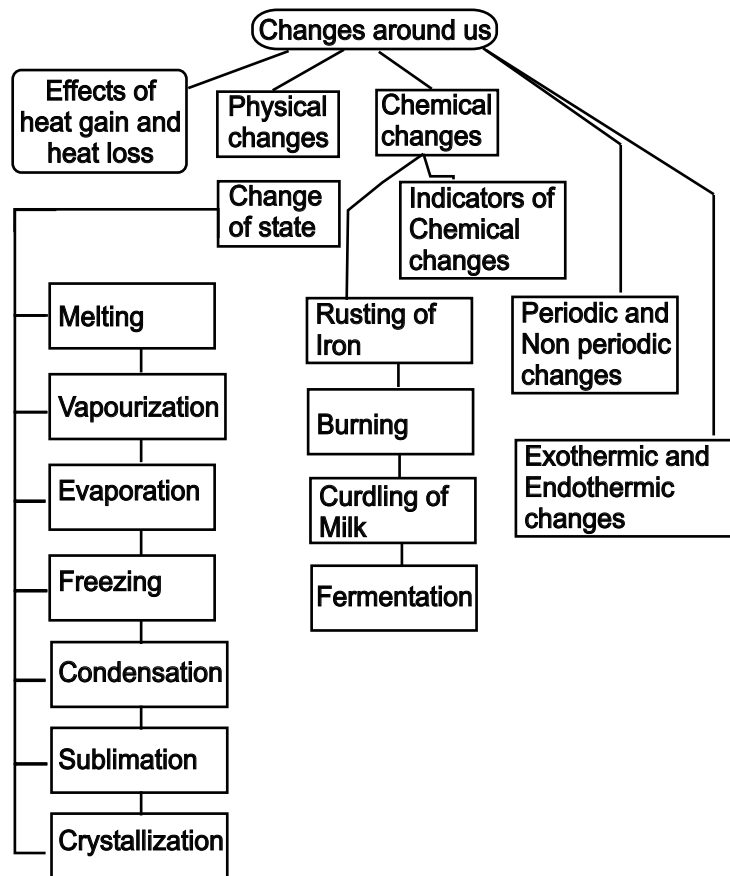
- Observe the movement of rise of mercury. When it becomes stable, take the reading of the thermometer.
- Repeat this with hot water and take the reading.

ACTIVITY 5**Use of Digital thermometer :**

1. Wash the tip with warm (not hot), soapy water.
2. Press the "ON" button.
3. Insert the tip of the thermometer into the mouth, bottom, or under the armpit.
4. Hold the thermometer in place until it beeps (about 30 seconds).
5. Read the display.
6. Turn off the thermometer, rinse under water, and put it away in a safe place.

Unit - 3. Changes Around Us

Mindmap



Evaluation

I. Choose the best answer :

1. When a woollen yarn is knitted to get a sweater, the change can be classified as _____.

- a) physical change b) chemical change
c) endothermic change d) exothermic change

Ans : b) chemical change

2. _____ of the following are endothermic changes.

- a) Condensation and melting
- b) Condensation and freezing
- c) Evaporation and melting
- d) Evaporation and freezing

Ans : c) Evaporation and melting

3. 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.

Ans : b) growth of a tree

4. _____ 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

Ans : c) Occurrence of tides in seas.

5. _____ is not a chemical change.

- a) Dissolution of ammonia in water
- b) Dissolution of carbon-di-oxide in water
- c) Dissolution of oxygen in water
- d) Melting of polar ice caps

Ans : d) Melting of polar ice caps

II. Fill in the blanks :

1. Filling up a balloon with hot air is a _____ change.

Ans : chemical

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

Ans : physical

3. Opening a gas cylinder knob converts _____ fuel into _____ fuel. This is an example of _____ change.

Ans : liquid, gas, chemical

4. Spoiling of food is a _____ change.

Ans : chemical

5. Respiration is a _____ change.

Ans : chemical

III True or False. If False give the correct answer

1. Cutting of cloth is an example of a periodic change.

Ans : False

Correct statement : Cutting of cloth is an example of a **physical** change.

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

Ans : False

Correct statement : Taking a glass of water and freezing it by placing it in the freezer is a **physical** change.

3. A bean plant collecting sunlight and turning it into bean seeds is an example of physical and non-periodic change.

Ans : False

Correct statement : A bean plant collecting sunlight and turning it into bean seeds is an example of **chemical** and **periodic** change.

4. If the chemical properties of a substance remain unchanged and the appearance or shape of a substance changes it is called a periodic change.

Ans : False

Correct statement : If the chemical properties of a substance remain unchanged and the appearance or shape of a substance changes it is called a **physical** change.

5. Tarnishing of silver is an example of endothermic change.

Ans : True

IV. Match the following

A	B	C
1. Melting	Change of state from liquid to solid	Ticking of clock
2. Condensation	Change of state from liquid to gas	Formation of ice cube
3. Evaporation	Change of state from solid to liquid	Collecting flowers
4. Freezing	Change of state from gas to liquid	Ice cube to water
5. Periodic change	Occurs at irregular time intervals	Water to steam
6. Non-periodic change	Occurs at regular time intervals	Steam to water drops

Ans :

A	B	C
1. Melting	Change of state from solid to liquid	Ice cube to water
2. Condensation	Change of state from gas to liquid	Steam to water drops
3. Evaporation	Change of state from liquid to gas	water to steam
4. Freezing	Change of state from liquid to solid	Formation of Ice cube
5. Periodic change	Occurs at regular time intervals	Ticking of clock
6. Non-periodic change	Occurs at irregular time intervals	Collecting flowers

V. Classify the following changes as physical and chemical changes

A rough piece of wood is sanded and polished resulting in change in texture, Rusting of a iron nail, Painting the grill, Bending a paper clip, Pounding silver into thin plate, Rolling the chappathi dough into thin wire, Occurrence of day and night, eruption of volcano, burning of matchstick, dosa from the batter, blinking of eyelids, occurrence of a thunderstorm, rotation of the earth, formation of eclipses.

Physical changes	Chemical changes
A rough piece of wood is sanded and polished resulting in change in texture, Bending a paper clip, Pounding Silver into thin plate, Rolling the chappathi dough into thin wire, blinking of eyelids, rotation of the earth, formation of eclipses.	Rusting of iron, eruption of volcano, Painting the grill, burning of match stick, dosa from the batter, occurrence of a thunderstorm.

VI. Analogy

1. Physical Change: Boiling: : Chemical Change: _____.

Ans : Burning

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

Ans : Physical change

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

Ans : Non periodic change

VII. Very short answer type question**1. State two examples of periodic changes.**

Ans : Rotation and revolution of earth, beating of the heart.

2. Mention any two exothermic reactions.

Ans : Burning of wood, Respiration.

3. Cold milk is heated and it becomes hot. Which type of change it is?

Ans : It is endothermic chemical change

4. What type of change is artificial ripening of fruit?

Ans : Chemical change

5. What type of change is colouring of a paper?

Ans : Chemical change.

6. Growing of nails is a periodic change. Why?

Ans : Because nails grow at regular time intervals. If we cut the nails, it will grow again.

7. What type of energy changes is associated when ice melts?

Ans : ★ When ice melts it absorbs the heat energy from surroundings.

★ The ice changes from solid state to liquid state.

★ It is a physical change.

VIII. Short answer type question**1. Distinguish physical and chemical changes.**

Ans :

Physical changes	Chemical changes
Physical changes are the changes in which only physical properties of a substance undergo a change and there is no change in its chemical composition.	Changes that occur with the formation of new substance with different chemical composition are called chemical changes.
No new substance is formed	New substance is formed
A physical change is temporary and reversible in nature	A chemical change is permanent and irreversible in nature
(ex) Cutting of vegetables	(ex) Burning of wood.

2. How can a change occur in a substance?

Ans : The change occur in a substance involves an alteration in the properties such as colour, texture and the state of the substance since there is formation of new substance.

3. Can you suggest a method to collect water from sea water?

Ans : ★ Evaporation is a method used to collect water from sea water.

★ Evaporation is the technique used to separate dissolved solids from a solid-liquid mixture. This is the technique used to extract salt from sea water in salt pans.

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

Ans : ★ Yes, it is a periodic change.

★ A solar eclipse can only occur during a period.

★ A solar eclipse means in which the sun is close to a node in the moon's orbit.

★ Solar eclipse repeats after a definite interval of time. So, it is a periodic change.

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

Ans :

Dissolution of sugar	Burning of sugar
It is a physical change	It is a chemical change
No new substance is formed	Fire activates a chemical reaction between sugar and oxygen. so new substance is formed

IX. Long answer type question**1. Explain the following statement: Digestion is a chemical change.**

Ans : ★ Digestion is a chemical change. Because enzymes in the stomach and intestines break down large macromolecules into simpler molecules. So that the body can more easily absorb the food.

★ New substance is formed due to the chemical reaction.

★ It is a irreversible reaction.

2. How the iron blade is fixed into a wooden handle in tools used to dig the soil?

Ans : ★ First the ring in the iron blade of spade is heated. Heating of the blade leads to its expansion and thus the ring gets bigger. This happens because, metals always expand on heating.

★ The metal blade is then fitted easily in to the wooden handle.

★ After this, cold water is usually poured on the iron blade which leads to the contraction of the expanded iron blade. The spade can also be left to cool down, undisturbed.

★ So that it is firmly fixed. The blade is attached firmly to the wooden handle of a spade.

X. Higher order Thinking questions

1. Peeled and unpeeled banana does not look the same. Does that mean peeling banana is a chemical change?

Ans : Yes, peeling banana is a chemical change. Reason for this is oxidation. Banana contain an enzyme called polyphenol oxidase which causes a chemical reaction when exposed to oxygen.

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

Ans : ★ By running cold water on hot glass, it cools down unevenly and therefore cause the glass to crack.

★ Because the glass inside contracts while the outside remains expanded.

★ This indicates as a chemical change.

3. Boiling of water is a physical change; but boiling of egg is a chemical change. Why?

Ans : ★ In case of boiling of eggs, the composition of egg changes. New substance is formed and the change is irreversible

★ Boiling of water to form water vapour is a physical change. There is only change in the state of matter and no chemical change has occurred and it is a reversible change.

XI. Assertion – Reason type question

1. Assertion: The explosion of fire cracker is a physical change.

Reason: A physical change is a reversible change.

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 : d) A is false but R is true.

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

Reason: 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 : a) Both A and R are true and R is the correct explanation of A.

3. Assertion: Burning of wood log to charcoal is a physical change.

Reason: 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.

4. Assertion: The formation of iron oxide from iron is a chemical change.

Reason: 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 drop of petrol when touched with finger gives a chill feeling.

Reason: The above phenomenon is an endothermic one.

- 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.

XII. Picture based question

1. Observe the picture and list down the changes that are accompanied in the picture.

a)

b)

c)

Ans :

a) Chemical change

b) Irreversible change

c) Periodic change



2. Observe the picture containing a kettle and note that it has salt water in it and answer the following questions:

a) What is name of the process that is done to the kettle?

Ans : Boiling

b) What will happen to the content of the kettle?

Ans : The content of the kettle will evaporate.

c) What kind of change is occurring on the cold surface of the metal plate?

Ans : Physical change

d) What can you say about the quality of water that is obtained in the beaker?

Ans : It will be pure

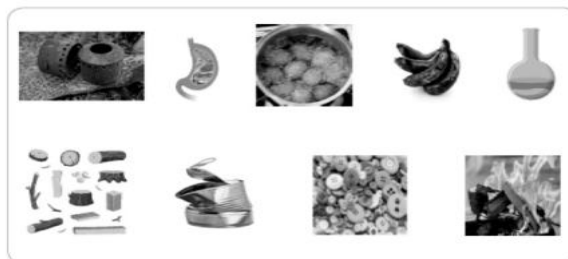


When you mix sugar in water, is it a chemical change or physical change?

Ans : It is a physical change

Look at the following list. Identify the physical and chemical changes and fill in the given table.

(rusting of iron, digestion of food, boiling egg, rotting banana, mixing sand and water, chopping wood, crushing a can, mixtures of different coloured buttons, burning of wood)



Ans :

Physical changes	Chemical changes
rotting banana, mixing sand and water, chopping wood, crushing a can, mixtures of different coloured buttons.	rusting of iron, Digestion of food, boiling egg, burning of wood.

When food gets spoiled, it produces a foul smell. Shall we call this change as a chemical change? Discuss in the class. Give your reflections.

Ans : ★ Yes, we shall call this change as a chemical change

★ Because the food gets spoiled due to the chemical reaction.

★ New product is formed with a foul smell.

★ It is irreversible change.

Try yourself

Cut a fresh slice of potato and brinjal and keep it away for sometime.

Ans :

★ The change of colour indicates new substance is formed.

★ It is a chemical change



Discuss and give your answer

You know that plant produce their food by a process called photosynthesis.

Can we call photosynthesis a chemical change?

Ans : ★ Yes, we can call photosynthesis a chemical change.

★ In the process of photosynthesis, starch is formed as new substance.

★ It is irreversible reaction.

★ It absorbs heat energy.

Additional Questions and Answers**I. Choose the best answers.**

1. is the changing of a solid into its liquid state and it happens by heating.

- a) Freezing b) Melting
c) Boiling d) Condensation **Ans : b) melting**

2. The freezing of water is a change.

- a) Physical b) Chemical
c) Reversible d) Irreversible **Ans : a) Physical**

3. is a method of separation as well as a method of purification.

- a) Evaporation b) Condensation
c) Crystallization d) Distillation **Ans : c) Crystallization**

4. Changes that repeat themselves after a definite interval of time are called.....changes.

- a) Non periodic b) Periodic
c) Reversible d) Irreversible **Ans : b) Periodic**

5. Changing seasons arein nature.

- a) Periodic b) Non periodic
c) Chemical d) Irreversible **Ans : a) Periodic**

II. Fill in the blanks

1. When a glass of water is heated, its volume

Ans : increases

2. There is a change in volume but mass remaining the same are called changes.

Ans : physical

3. When a rubber band is stretched, it elongates. It is a change

Ans : physical

4. is the process of conversion of a liquid into vapours on heating.

Ans : Boiling

5. Evaporation is a slow process and occurs only at the of the liquid

Ans : surface

III. Say True or False. If false give the correct answer.

1. When heated or cooled, the object may expand or contract, but the mass remains the same

Ans : True

2. A chemical change is usually temporary and reversible in nature.

Ans : False

Correct statement : A physical change is usually temporary and reversible in nature.

3. Ice absorbs heat when it melts to form water is an exothermic change.

Ans : False

Correct statement : Ice absorbs heat when it melts to form water is an endothermic change.

4. Movement of legs while dancing is a periodic change.

Ans : False

Correct statement : Movement of legs while dancing is a **non - periodic** change.

5. Changes in which heat is released are known as exothermic changes.

Ans : True

IV. Match the following :

i) Inflating a balloon	Periodic change
ii) Explosion of fire work	Non periodic change
iii) Rotation of earth	Physical change
iv) Eruption of volcano	Chemical change

Ans :

i) Inflating a balloon	Physical change
ii) Explosion of fire work	Chemical change
iii) Rotation of earth	Periodic change
iv) Eruption of volcano	Non periodic change

V. Short Answers.

1. Differentiate solid, liquid and gas.

Solid	Liquid	Gas
In which particles are very close together.	In which particles are close together.	Particles are far apart from each other.
Particles are arranged in a fixed regular pattern.	Particles are not arranged in a fixed regular pattern.	Particles are not arranged in a fixed regular pattern.
Particles can vibrate about their fixed positions.	Particles are able to slide past one another.	Particles move freely over long distances.

2. Define Sublimation

Ans : The process in which a solid is converted directly into gas is called sublimation.

3. How can we prevent rusting?

Ans : Iron articles can be prevented from making contact with oxygen, water/water vapour. A simple way is to apply a coat of paint or grease. These coats should be applied regularly to prevent rusting.

4. Fermentation is a chemical change. Give reason.

Ans : ★ Fermentation is the process in which microorganisms such as yeast and certain bacteria break down sugar solution into alcohol and carbon-di-oxide.

★ It is an irreversible process as the alcohol formed cannot be turned back into sugar. Thus, fermentation is a chemical change.

5. Differentiate exothermic and endothermic changes.

Ans :

Exothermic change	Endothermic change
★ Changes in which heat is released are known as exothermic changes	★ Changes in which heat is absorbed are known as endothermic changes.
(ex) Burning of wood	(ex) Dissolution of glucose in water.

ACTIVITY 1**Melting of ice and freezing of water :**

Though ice and water look different, they are both made of water molecules. This means that no new substance is formed during the melting of ice, only a change of state from solid to liquid takes place during the melting of ice. So, the melting of ice to form water is a physical change.

The change which occurs during the melting of ice to form water can be reversed easily by freezing the water to form ice again by keeping a beaker of water in the freezer zone of a refrigerator.

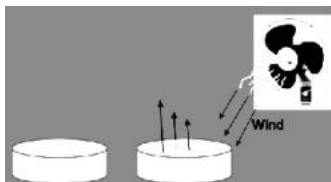
**Activity 2**

You must be remembering an activity done in Class six, in which we have taken two same shaped glasses and fill them with equal amount of water from same tap. We kept one under the hot sun and other under the shadow. After three to four hours, we saw that there is difference in water levels. The one kept in the hot place witness more evaporation compared to the one in shade.

From this we can conclude that higher the temperature, the rate of evaporation will be more. As the temperature increases, more molecules are able to break free from the surface. Thus the rate of evaporation increases with rising temperature.

Activity 3

Take two pans, one wide and another narrow. Fill hot water in both to the same depth. Keep them in open. Observe after one to two hours. The pan that is wide has cooled more than the narrow one. That is more the surface area; the rate of evaporation is more



From this, can you guess

why we unfurl the clothes while putting them to dry, rather than just drape them over the cloth line?

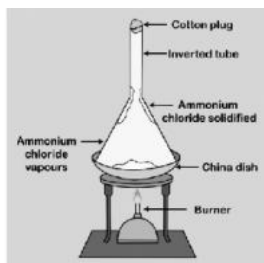
Ans : Greater the surface of conversion of a liquid, more molecules are available for evaporation.

Activity 4

Take sugar solution in a shallow, broad bowl. Place the bowl in hot sun for a few hours. See that the bowl does not get any disturbance for the whole day. You can see that the solvent in the sugar solution evaporates leaving the sugar crystals in the bowl.

ACTIVITY 5**Sublimation**

Take some camphor in a porcelain dish and cover it with a clean glass funnel. Close the mouth of the funnel with small amount of cotton wool. Heat the contents in the dish. can you see that camphor changes into vapour state without becoming liquid.

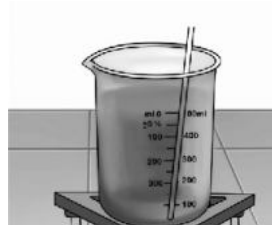


Ans : Yes, I can see that camphor changes into vapour state without becoming liquid. This is called sublimation.

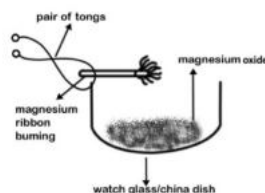
Ammonium chloride is another substance that undergoes sublimation.

ACTIVITY 6**Crystallizing copper sulphate :**

Take about 100ml of water in a beaker. Heat the water over a burner till it boils. Add impure copper sulphate to the hot water with constant stirring. Continue to add copper sulphate till the solution takes up the added copper sulphate, that is, the added copper sulphate will not dissolve anymore. Filter the contents on a glass plate and allow it to cool. You could see crystals of copper sulphate in a few hours.

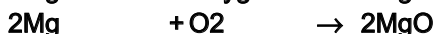
**ACTIVITY 7**

Take a small piece of magnesium ribbon and clean it by rubbing its surface with a sand paper. Hold the magnesium ribbon at one end with a pair of tongs and bring its other end over the flame of a burner.



We can see that the magnesium ribbon starts burning with a dazzling white light. Hold the burning magnesium ribbon over a watch glass so that the powdery ash being formed by the burning of magnesium collects in the watch glass.

When magnesium ribbon burns in air, then the magnesium metal combines with the oxygen of air to form a new substance called magnesium oxide.



Magnesium oxide compound appears as a white powdery ash. The burning of magnesium ribbon is a chemical change, because a new substance, magnesium oxide, is formed during this change.

ACTIVITY 8

When baking soda and lemon juice are mixed together, then bubbles of carbon-di-oxide are formed along with the formation of some salt and water. Take 10 ml of lemon juice and add pinch of baking soda to it. Actually when we mix baking soda with lemon juice, we will hear a hissing sound when bubbles of carbon-di-oxide coming out and rising in the reaction vessel.

ACTIVITY 9

Ask a student to stretch both hands, put a pinch of soap powder in one hand and a pinch of glucose in the other hand. Add a few drops of water to soap powder and ask how the student feels upon adding water. Now add a few drops of water to the glucose at the other hand. Now ask the student how he /she feels on adding water, What is the feeling when water is added to glucose?

Ans : He feels chillness

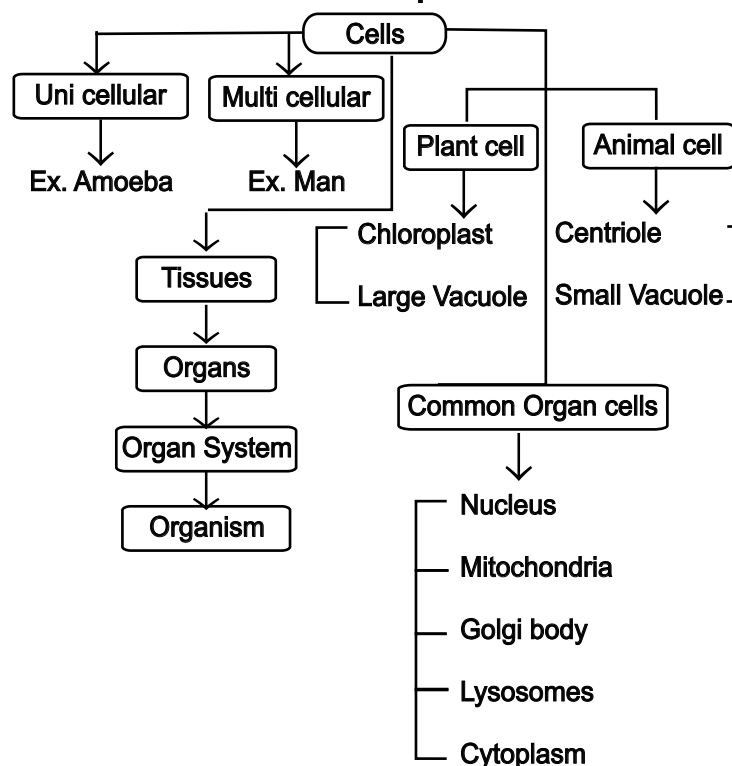
What is the difference when water is added to soap powder and when water is added to glucose?

Ans : ★ When water is added to soap powder he feels hot. Because it is an exothermic reaction. It emits heat energy.

★ When water is added to glucose he feels cool. Because it is an endothermic reaction. It absorbs heat energy.

Unit - 4. Cell Biology

Mindmap



Evaluation

I. Choose the correct answer :

1. Basis unit of life.

- | | | |
|--------------|---------------|----------------------|
| A) Cell | B) Protoplasm | |
| C) Cellulose | D) Nucleus | Ans : A) Cell |

2. I am the outer most layer of an animal cell. Who am I?

- | | |
|------------------|---------------------|
| A) Cell wall | B) Nucleus |
| C) Cell membrane | D) Nuclear membrane |
- Ans : C) Cell membrane**

3. Which part of the cell is called the brain of the cell?

- | | |
|-----------------|-------------|
| A) Lysosome | B) Ribosome |
| C) Mitochondria | D) Nucleus |
- Ans : D) Nucleus**

4. _____ helps in cell division

- A) Endoplasmic reticulum B) Golgi complex
C) Centrioles D) Nucleus

Ans : C) Centrioles**5. Suitable term for the various components of cell is ____**

- A) Tissue B) Nucleus
C) Cell D) Cell organelle

Ans : D) Cell organelle**II. Fill in the blanks :**

1. The jelly like substance present in the cell is called _____

Ans : Cytosol

2. I convert the Sun's energy into food for the plant. Who am I?

Ans : Chlorophyll

3. Mature Red blood cell do not contain a _____.

Ans : Nucleus

4. Unicellular organisms can only be seen under a _____.

Ans : Microscope

5. Cytoplasm plus nucleoplasm is equal to _____.

Ans : Protoplasm**III True or False – If False give the correct answer**1. Animal cells have a cell wall. **Ans : False****Correct statement : Plant cells** have a cell wall. (or) Animal cells have a **cell membrane**.2. Salmonella is a unicellular bacteria. **Ans : True**3. Cell membrane is fully permeable **Ans : False****Correct statement : Cell membrane is selectively permeable**4. Only plant cells have chloroplasts. **Ans : True**5. Human stomach is an organ. **Ans : True**

6. Ribosomes are small organelles with a membrane.

Ans : False**Correct statement : Ribosomes are macro molecules without a membrane.****IV. Match the following**

1. Transporting channel	Nucleus
2. Suicidal bag	Endoplasmic reticulum
3. Control room	Lysosome
4. Power house	Chloroplast
5. Food producer	Mitochondria

Ans :

1. Transporting channel	Endoplasmic reticulum
2. Suicidal bag	Lysosome
3. Control room	Nucleus
4. Power house	Mitochondria
5. Food producer	Chloroplast

V. Analogy

1. Bacteria : microorganism :: mango tree : _____
Ans : Macroorganism
2. Adipose : tissue :: eye : _____
Ans : Organ
3. Cell wall : plant cell :: centriole : _____
Ans : Animal cell
4. Chloroplast : photosynthesis :: mitochondria : _____
Ans : Aerobic Respiration

VI. Choose the correct alternative from the following

1. Assertion (A) : Tissue is a group of dissimilar cells.

Reason (R) : Muscle is made up of Muscle cell.

- a). Both A and R are true
 b). Both A and R are false
 c). A is true but R is false.
 d). A is false but R is true.

Ans : d). A is false but R is true.

2. Assertion (A) : Majority of cells cannot be seen directly with naked eye because.

Reason (R) : Cells are microscopic.

- a). Both A and R are true
 b). Both A and R are false
 c). A is true but R is false.
 d). A is false but R is true.

Ans : a). Both A and R are true

VII. Very short answer.

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

Ans : Functions of cell wall :

- ★ Cell wall provides a frame work for support and stability.
- ★ Cellulose in the cell wall helps to maintain the shape of the plant cell.

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

Ans : ★ Chloroplasts, which contain green pigment chlorophyll, uses energy from sunlight to make starch.

3. What are the main things in a nucleus?

Ans : ★ Nucleus is surrounded by a nuclear envelope.

★ One or two nucleolus and the chromatin body are present inside the nucleus.

★ The fluid inside the nucleus is known as the nuclear fluid or nucleoplasm.

4. What does cell membrane do?

Ans : ★ The boundary of an animal cell is the plasma membrane, which is also called as cell membrane.

★ Cell membranes are selectively Permeable, which allows only certain substances to pass in and out of the cell.

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

Ans : ★ Lysosomes are known as scavengers of the cell because,

★ They are main digestive compartments of the cell.

★ They lyse a cell.

6. Teacher said “A virus is not an organism” Do you agree with this statement or not? Explain Why?

Ans : ★ Yes, I agree with the statement, “A virus is not an organism”

Explanation :

★ Viruses are not living things because they cannot do anything on their own.

★ They can multiply only when they enter a living cell..

VIII. Short Answer**1. Why the cell is very important for us?**

Ans : ★ The basic functional unit of an organism is called a cell.

★ Structure of a cell represent the arrangement of parts or organelles in a cell.

★ Function is the activity of each part or organelle in a cell.

★ Cells are the basic building blocks of an organism.

So, the cell is very important for us.

2. Distinguish between the following pairs Smooth ER and Rough ER Cell wall and cell membrane Chloroplast and mitochondria

Ans : 1)

Smooth ER	Rough ER
Smooth ER is a network of tubular sacs without ribosomes on the membrane.	Rough ER are rough due to the ribosomes attached to the membrane.
Functions : Synthesis of lipids, steroids and transport them within the cell.	Functions : Synthesis of proteins

2)

Cell wall	Cell membrane
Present in plant cell	Present in animal cell
Cell wall is rigid	Cell membrane is thin.
It provides support and protection	They are selectively permeable, which allows only certain substances to pass in and out of the cell.

3)

Chloroplast	Mitochondria
They are food producers	Power house of the cell
Found only in plant cell.	Present in the plant and animal cell
Photosynthesis takes place	Aerobic respiration takes place.

3. Write correct sequence from cell to organism?

Ans : Cells → Tissues → Organ → Organ system → Organism

4. Write a short note on nucleus.

Ans : ★ The nucleus is the control centre of the cell.

- ★ It is the largest organelle.
- ★ Plant and animal cells have a nucleus inside the cytoplasm.
- ★ It is surrounded by a nuclear envelope.
- ★ One or two nucleolus and the chromatin body are present.
- ★ The nuclear fluid or nucleoplasm is present in the nucleus.

Functions :

- ★ Inheritance of character from one generation to another.
- ★ It controls all the processes and chemical reactions that take place inside the cell.

5. Classify the following terms into cells, tissues, organs and write in the tabular column given below.

Neuron, Lungs, Xylem, brain, adipose, Leaf, RBC, WBC, hand, muscle, heart, ovum, squamous, phloem, cartilage.

Ans :

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

6. On the lines given below, write about what have you learned by doing the activities in this lesson Let me tell you about some of the important things I've learned about cells. First, I'll start with...

Ans :

★ **Definition of cell :** The cell is a basic structural and functional unit of life.

★ **Types of cell :** 1. Plant cell, 2. Animal cell.

★ **Classification of organism based on number of cells :**

1. Unicellular organism - Single celled (eg) Bacteria.
2. Multicellular organism - Many celled (eg) Human beings.

★ **Specialised cells - in human :**

1. Epithelial cells - Body covering
2. Muscle cells - Movement
3. Nerve cells - Conduct messages
4. Red blood cells - Carry oxygen.

★ **cell structure :**

1. ★ Cell membrane (in animal cell)
★ Cell wall in (in plant cell)
2. Cytoplasm.
3. Nucleus.

★ **cell organelles :** Tiny structures inside the cell, which has a specific function for the cell. They are,

- ★ Mitochondria
- ★ Ribosome
- ★ Endoplasmic reticulum
- ★ Vacuoles
- ★ Chloroplast is present only in plant cell.
- ★ Centrioles is present only in animal cell.

IX. Long answer**1. Write about any three organelles in detail.****Ans :****1. Mitochondria :**

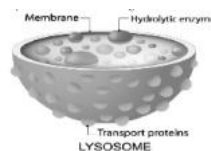
- ★ Mitochondria is the power house of the cell.
- ★ It is an oval or rod shaped double membrane bounded organelle.
- ★ Aerobic respiratory reactions take place to release energy.

**2. Chloroplast :**

- ★ Chloroplast are food producers found in plant cell.
- ★ Photosynthesis takes place with green pigment chlorophyll.
- ★ Chlorophyll can absorb radiant energy from the sun and convert it to chemical energy.
- ★ Energy is used by plants and animals.

**3. Lysosome :**

- ★ Lysosomes are very small.
- ★ They are the main digestive compartments of the cell.
- ★ They lyse a cell, hence they are called "Suicidal bag"

**2. In a situation, how to explain, while your friend ask what is this , never seen before?****Ans : Structure of a Animal cell****Cell Membrane:** ★ Boundary of an animal cell.

★ Also called as plasma membrane.

Small Vacuoles: ★ Filled with Inorganic, organic and water molecules.

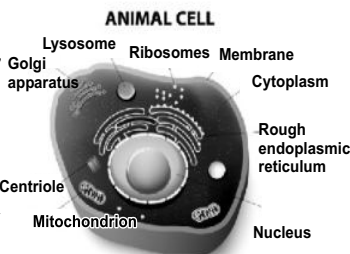
★ Support the organelle.

Nucleus: ★ The nucleus is the control centre of the cell.

★ It is the largest organelle.

Ribosome : ★ Minute particle consisting of RNA.

★ Synthesize polypeptides and proteins.

Cytoplasm: ★ Includes all living parts of cell within the cell membrane but excluding the nucleus.

Endoplasmic reticulum:

- ★ Network of membranous tubules
- ★ Involved in protein and lipid synthesis

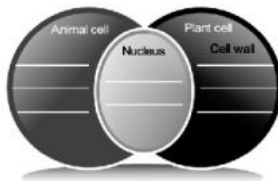
Golgi body:

- ★ Complex of vesicles and folded membranes.
- ★ Involved in secretion and intracellular transport

Mitochondria: ★ Oval or rod shaped double membrane bounded organelle.

- ★ Aerobic respiratory reactions take place with the release of energy.

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



Ans :

Animal cell	Common to both	Plant cell
★ Cell membrane or plasma membrane is the boundary of an animal cell.	★ Nucleus ★ Ribosome ★ Cytoplasm ★ Golgi body ★ Endoplasmic Reticulum. ★ Mitochondria	★ Cell wall is an additional layer on outside of the cell membrane
★ Centrioles or Centrosomes are present only in animal cell and involves in cell division.		★ Chloroplasts are present only in plants, involved in photosynthesis.
★ Small Vacuoles are present		★ Large Vacuoles are present

X. Higher order thinking question**Virus is called Acellular. Why?**

Ans : ★ The organisms which don't possess a cell are termed as a cellular (ex.) Virus.

- ★ A cellular organisms are devoid of cell and cell products.
- ★ They are non-living outside the host and living inside a host.

Additional Questions and Answers**I. Choose the correct answer.**

1. A beehive is composed of numerous units.

- a) Pentagonal b) Hexagonal
c) Diagonal d) Octagonal **Ans : b) Hexagonal**

2. are unicellular organisms.

- a) Bacteria b) Onion
c) Man d) Tree **Ans : a) Bacteria**

3. Roots are of plants.

- a) Tissues b) Cells
c) Organ d) Organ system **Ans : c) Organ**

4. helps to maintain the shape of the plant cell.

- a) Cytosol b) Nucleoplasm
c) Cellulose d) Protoplasm **Ans : c) Cellulose**

5. cells carry oxygen and collect carbondioxide.

- a) Nerve b) Red blood
c) Muscle d) Epithelial **Ans : b) Red blood**

II. Fill in the blanks

1. The is made up of the cytosol and cell organelles.

Ans : cytoplasm

2. Chloroplast is a type of

Ans : plastid

3. Coloured plastids are.....

Ans : chromoplasts

4. is converted to sugar

Ans : Starch

5. During cell division, the chromatin body is organised into a

Ans : chromosome.

III. Say True or False. If false give the correct answer.

1. Leucoplast impart colour to flower and fruits **Ans : False**

Correct statement : Chromoplast impart colour to flower and fruits

2. Centrioles are the brain of the cell.

Ans : False

Correct statement : Nucleus are the brain of the cell.

3. Cells with nucleus is called as eukaryotic cells. **Ans : True**

IV. Match the following :

Column - A	Column - B
i) Plasmodesmata	ATP
ii) Mitochondria	Spindle fibres
iii) Ribosome	Openings
iv) Cell division	Area of movement
v) Cytoplasm	RNA

Ans :

Column - A	Column - B
i) Plasmodesmata	Openings
ii) Mitochondria	ATP
iii) Ribosome	RNA
iv) Cell division	Spindle fibres
v) Cytoplasm	Area of movement

V. Answer the following.

1. What is cytosol?

Ans :

- ★ The cytosol is a watery, jelly - like medium.
- ★ Made up of 70% - 90% water.
- ★ Usually colourless.

2. What are the types of roots in the root system of a plant?

Ans : ★ Primary root

- ★ Secondary root
- ★ Tertiary root

3. What are stem cells?

Ans : ★ Stem cells are cells that have the ability to divide and develop into many different types of the cells.

4. List out the function of an organelle.

Ans : ★ Bring in food supplies.

- ★ Repair of the cell
- ★ Helps to grow and reproduce

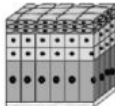
5. Expand - ATP.

Ans : Adenosine Tri Phosphate

6. Differentiate Unicellular and Multicellular organism.

Unicellular organism	Multicellular organism
★ Single - celled organism	★ Many celled organism
★ Microscopic organism	★ Macroscopic organism
★ (eg) Chlamydomonas, Amoeba.	★ (eg) Onion, Man.

VI. Answer in detail.**1. Tabulate the specialised cells, their structure and functions.**

Specialised cell	Structure	Function
Epithelial cells – they are mostly flat and columnar in shape		They cover the surface of the body for protection
Muscle cells – they are long and spindle shaped		They can contract and relax allowing the cell for movement
Nerve cells – the body of nervous cell is branched with an elongated nerve fiber.		Nerve cells are specialized to carry and conduct messages that coordinate the functions of the body.
Red blood cells – Round, biconcave and disc shaped		Red blood cells carry oxygen and collect carbon dioxide from various part of the body.

2. Write a short note on "Stem cells" and their applications.**Ans : Stem Cells**

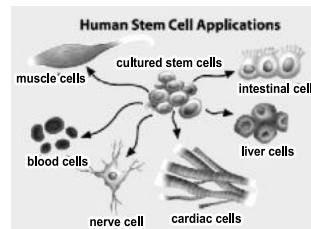
★ Stem cells can divide and multiply while at the same time keeping their ability to develop into any other type of cell.

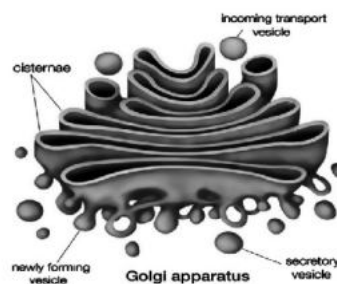
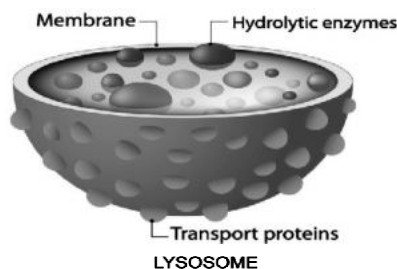
★ Embryonic stem cells are very special as they can become absolutely any cell in the body

Example :

★ Blood cell, nerve cell, muscle cell or gland cell.

★ So they are utilized by the Scientist and Medicos, to cure and prevent some diseases like Spinal cord injury.



3. Draw and label the parts.**a) Golgi apparatus****b) Lysosome.****ACTIVITY 1**

Do you remember the lesson studied in previous class, how will you find whether an object is living or non – living? Write it down. An object is living or non – living?

1. Form a team and work together to write down some of the functions of life, which you can remember.

Ans: Functions of life :

- ★ Respiration
- ★ Digestion
- ★ Excretion
- ★ Circulation

2. Do you think that an individual cell is living? Explain your answer

Ans: Yes, an individual cell is living.

(Eg.) Amoeba, a single cell organism carries out entire functions.

3. Write about various organelles of a cell which you know.

Ans: Organelles :

- ★ Nucleus
- ★ Mitochondria
- ★ Golgi body
- ★ Lysosome
- ★ Centriole
- ★ Chloroplast

ACTIVITY 2

Find out major organs that are part of the circulatory system of a human body and list out their functions

Ans : Major organs of circulatory system and their functions.

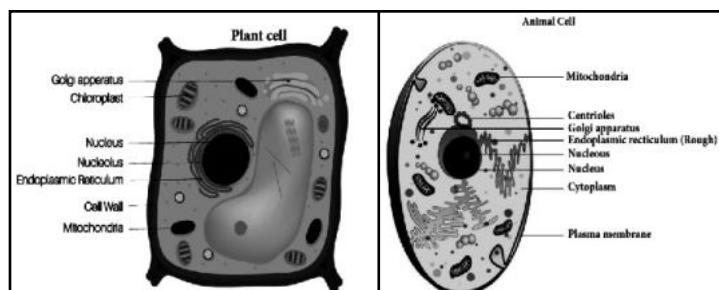
Heart : Pumping organ, circulates blood to all parts of the body.

Blood : Blood carries oxygen.

Blood vessels : Carry the blood.

Activity 3

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



Ans :

Animal cell	Plant cell
★ Cell membrane or plasma membrane is the boundary of an animal cell.	★ Cell wall is an additional layer on outside of the cell membrane
★ Centrioles or Centrosomes are present only in animal cell and involves in cell division.	★ Chloroplasts are present only in plants, involved in photosynthesis.
★ Small Vacuoles are present	★ Large Vacuoles are present

Activity 4**Summarise what you have learnt**

Now you've studied the internal structure of a cell. Let us summarise 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	Selectively Permeable
2	Cell wall	Supporter and Protector
3	Cytoplasm	Area of Movement
4	Mitochondrion	Power house of Cell
5	Vacuole	Storage
6	Chloroplast	Photosynthesis
7	Endoplasmic reticulum	Protein and lipid synthesis

SELECTION

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