

M A T H E M A T I C S

TERM - II

CHAPTER 01

NUMBERS



- ★ A number which cannot be divided equally into groups of two are called odd numbers. All odd numbers end with anyone of the digits 1, 3, 5, 7 or 9.
- ★ A number which can be divided equally into groups of two are called even number. All even numbers end with any one of the digits 0, 2, 4, 6 or 8.
- ★ Odd and even numbers come alternatively.
- ★ The sum of any two odd numbers is always an even number.
- ★ The sum of an odd number and an even number is always an odd number.
- ★ The product of any two odd numbers is always an odd number.
- ★ The product of an odd end an even number is always an even number.
- ★ The product of three odd numbers is always an odd number.
- ★ 1 is the first odd natural number and 0 is the first even whole number.
- ★ 1 is odd and its successor 2 is even and so the predecessor of 1, 0 is even
- ★ A factor is a number that divides the given number exactly (gives remainder zero).
- ★ Every factor of a number is less than or equal to that number.
- ★ Every multiple of a number is greater than or equal to that number.
- ★ Multiples of a number are endless.

1.2. PRIME AND COMPOSITE NUMBERS

- ★ A natural number greater than 1, having only two factors namely 1 and the number itself is called a prime number.
- ★ A natural number having more than 2 factors is called a composite number.
- ★ A number is a **perfect number** if the sum of its factors except that number gives the number. Eg : 6. Since sum of its factors other than 6 is $1 + 2 + 3 = 6$.
- ★ Total number of primes upto 100 is 25.
- ★ The only prime number which ends with 5 is 5.

UNIT TEST**Time : 45 mins.****Marks : 40****I. Fill in the blanks.** **$5 \times 1 = 5$**

1. The only prime triplet that exists is _____.
2. The _____ of the factors in the product will not affect the value of the number.
3. HCF of x and $y =$ _____ if y is a multiple of x .
4. LCM is always greater than or equal to the _____ of the given number.
5. Every composite number can be expressed as a product of prime numbers in a _____ way.

II. Say True or False **$5 \times 1 = 5$**

1. 2 is the only even prime number.
2. Two consecutive even prime numbers are known as twin primes.
3. Two co-prime numbers are always prime numbers.
4. The LCM of two co-prime numbers is equal to the product of the numbers.
5. For co-prime numbers LCM is 1.

III. Choose the best answer **$5 \times 1 = 5$**

1. Which of the following is not co-primes?
(a) 8,10 (b) 11,12 (c) 1,3 (d) 31,33
2. The number of distinct prime factors of the largest 4-digit number is
(a) 2 (b) 3 (c) 5 (d) 11
3. The largest number which always divides the sum of any pair of consecutive odd number is
(a) 2 (b) 4 (c) 6 (d) 8
4. Which of the following number is divisible by 8?
(a) 293 (b) 1205 (c) 1648 (d) 2063
5. If the number $7254 * 41$ is divisible by 3 then $*$ is
(a) 9 (b) 4 (c) 6 (d) 2

IV. Answer any three of the following questions. **$3 \times 2 = 6$**

1. Write all the factors of 24.
2. What is the smallest prime number?
3. Which of the following is a composite number? 7,13,16
4. Write the common factors of 6 and 10

CHAPTER

02

MEASUREMENTS



- ★ Yard is the distance between tip of the nose to the tip of the thumb.
- ★ The metric measures were defined in 1971 by the General Conference of Weights and Measures.
- ★ Metric units are based on the decimal system (10), which is easier to convert from one unit to another.
- ★ Universally accepted basic metric units are
 - ⇒ Length in metre
 - ⇒ Weight in gram
 - ⇒ Capacity in litre

We use

Size	Metric units used
Large	Length - Kilometre Weight - Kilogram Volume - Kilolitre
Medium	Length - Metre Weight - Gram Volume - Litre
Small	Length - Centimetre Weight - Centigram Volume - Centilitre
Very Small	Length - Millimetre Weight - Milligram Volume - Millilitre

Objective Type Questions

14. 9 m 4 cm is equal to

- (a) 94 cm (b) 904 cm (c) 9.4 cm (d) 0.94 cm

[Ans: (b) 904 cm]

15. 1006 g is equal to

- (a) 1 kg 6 g (b) 10 kg 6 g (c) 100 kg 6g (d) 1 kg 600 g

[Ans: (a) 1 kg 6 g]

16. Every day 150 l of water is sprayed in the garden, water sprayed in a week is

- (a) 700 l (b) 1000 l (c) 950 l (d) 1050 l

[Ans: (d) 1050 l]

17. Which is the greatest? 0.007 g, 70 mg, 0.07 cg

- (a) 0.07 cg (b) 0.007 g (c) 70 mg (d) all are equal

[Ans: (d) 70 mg]

18. 7 km – 4200 m is equal to _____

- (a) 3 km 800 m (b) 2 km 800 m
(c) 3 km 200 m (d) 2 km 200 m

[Ans: (c) 2 km 800 m]

Additional Questions

1. (a) What are the universally accepted basic metric units?

Ans: Universally accepted basic metric units are:

Length in metre

Weight in gram and

Capacity (Volume) in litre.

(b) A cow gives 10 litres of milk in the morning and 8 litres in the evening. Find the total milk it gives for a week in ml?

Ans: Litres of milk the cow gives in the morning = 10 l.
Litres of milk the cow gives in the evening = 8 l.
Total milk per day = 10 + 8 = 18 l.
∴ Total milk for a week = 18 × 7 l
= 126 l.
= 126 × 1000 ml
= 126000 ml.

CHAPTER 03 BILLS, PROFIT & LOSS



BILLS

A bill has the following details

1. Name of the shop
2. Serial number of the bill
3. Date on which the bill is produced
4. The list of the items purchased
5. Cost of each item
6. Total number of items purchased
7. Amount paid for the purchase
8. Tax details

PROFIT & LOSS

- ★ Cost Price (C.P) is the price at which an item is purchased.
- ★ Selling price (S.P) is the price at which an item is sold.
- ★ Profit is the difference between S.P and C.P. ie when $S.P. > C.P.$, $\text{Profit} = S.P - C.P$
- ★ Loss is the difference between C.P and S.P, ie when $C.P > S.P.$, $\text{Loss} = C.P - S.P$
- ★ $\text{Discount} = M.P - S.P$
- ★ $\text{Selling Price } S.P = M.P - \text{Discount}$
- ★ No commodity can be sold beyond the Maximum Retail price (M.R.P)
- ★ Charges such as transportation cost, labour cost, installation charge, painting charge, repairing charge etc... has to be added to the C.P to get actual profit or loss.

UNIT TEST

Time : 30 mins.

Marks : 25

I. Fill in the blanks.

 $5 \times 1 = 5$

1. If a cost price of a pencil box is ₹67 and selling price is ₹70, then the profit is ____
2. The profit or loss if C.P = ₹870 and S.P = ₹770 is ____
3. If $S.P > C.P$ then there will be ____
4. If $S.P < C.P$ then there will be ____
5. A Shopkeeper sold a pencil box for ₹88 at a loss of ₹12, then the cost price of the box is ____

II. Choose the best answer.

 $5 \times 1 = 5$

1. If 50 bills are produced on a day, then which information is same on all the bills?
 - (a) List of items
 - (b) Serial Number of the bill
 - (c) Date
 - (d) Tax details
2. In a bill if rate and quantity columns are inter changed then the following is correct.
 - (a) Total amount differs
 - (b) There will not be any change
 - (c) Items will get changed
 - (d) Amount column values differ
3. $S.P = \text{____} - \text{Discount}$
 - (a) Cost Price
 - (b) Selling Price
 - (c) Marked Price
 - (d) Profit
4. If $S.P > C.P$ then $S.P - C.P = \text{____}$
 - (a) Profit
 - (b) Loss
 - (c) Discount
 - (d) None of the above
5. To get correct profit or loss installation charges, repair charges etc to be added to ---
 - (a) C.P
 - (b) S.P
 - (c) M.P
 - (d) Profit

III. Answer any three of the following questions.

 $3 \times 2 = 6$

1. C.P. of 10 mangoes is ₹50, S.P is ₹62, find the profit.
2. M.P of 10 oranges of a box is ₹100. If it is sold for ₹86. Find the discount?
3. For a loss sale arrange the following C.P, S.P in ascending order.
4. A T.V was bought for ₹7500 and sold at a loss of 750. Find the selling price.
5. Smith buys pencils for ₹250 per hundred and sells each at ₹2. Find his profit or loss.

IV. Answer any three of the following questions.

 $3 \times 3 = 9$

1. Deva bought a second hand cycle for ₹500. He spent ₹80 in repairs and ₹175 in repainting. He then sold it to Vimala for ₹900. How did he gain or loss?
2. A fruit vendor bought 600 apples for ₹4800. He spent ₹400 on transportation. How much should he sell to get a profit of ₹1000?
3. Dhara bought 2 dozens of eggs for ₹56. since 6 of them broke, he incurred a loss of ₹20 on selling them. What was the selling price of one egg?
4. Amuthan purchased a house for ₹5,00,000. He spend ₹60,000 for repairs ₹50,000 for air conditioning. If he sold the house for ₹5,80,000. Find the gain or loss?
5. A Shopkeeper buys gift boxes contains sweet items and make up items for ₹200 and ₹300 respectively. He packed them separately with decorative worth ₹25 and ₹30 respectively. He fixes up M.P of sweet pack as ₹300 and make up box ₹400 respectively. If he gives ₹50 discount on each item find his profit or loss,

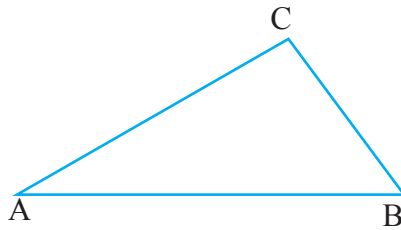
CHAPTER

04

GEOMETRY



- ★ To form a closed figure we need atleast 3 sides.
- ★ A three sided closed plane figure is called a triangle.
- ★ It can be represented as $\triangle ABC$ if the vertices are A, B and C.
- ★ The point of intersection of two sides of the triangle is called vertex .



- ★ Here $\triangle ABC$ has angles $\angle ABC$, $\angle BCA$ and $\angle CAB$.
- ★ $\overline{AB}$, $\overline{BC}$ and $\overline{CA}$ are the sides of the triangles.
- ★ A triangle has 3 sides, 3 angles and 3 vertices.

PROPERTIES OF TRIANGLES

- ★ If the measure of all angles are different then all sides are also different .
- ★ If the measure of two angles are equal, then two sides are also equal.
- ★ If the measure of three angles are equal, then three sides are also equal and each angle measures 60° .
- ★ Sum of the three angles of a triangle is 180° .
- ★ Based on the sides of a triangle it can be classified into three kinds. They are Equilateral triangle, Isosceles triangle and Scalene triangle.
- ★ If three sides of a triangle are equal in length then it is called an Equilateral triangle.
- ★ If two sides of a triangle are in equal length then it is called Isosceles Triangle.
- ★ If three sides of triangle are different in lengths, then it is called a scalene triangle.
- ★ Based on the angles of a triangle it can be classified into 3 kinds as acute angled triangle, obtuse angled triangle and right angled triangle.

16. An equilateral triangle is

- (a) an obtuse angled triangle (b) a right angled triangle
(c) an acute angled triangle (d) scalene triangle

[Ans: (c) an acute angled triangle]

Additional Questions

1. Name the type of the following triangles.

- (a) $\triangle PQR$ with $m\angle Q = 90^\circ$ (b) $\triangle ABC$ with $m\angle B = 90^\circ$ and $AB = BC$

Sol: (a) One of the angles is 90°

$\therefore$ It is a right angled triangle

- (b) Since two sides are equal. It is an isosceles triangle. Also $m\angle B = 90^\circ$

$\therefore$ It is an Isosceles right angled triangle

2. Classify the triangles (scalene, isosceles, equilateral) given below.

- (a) $\triangle ABC$, $AB = BC$
(b) $\triangle PQR$, $PQ = QR = RP$
(c) $\triangle ABC$, $\angle B = 90^\circ$
(d) $\triangle EFG$, $EF = 3$ cm, $FG = 4$ cm and $GE = 3$ cm

Sol: (a) Isosceles triangle

(b) Equilateral triangle

(c) Right angled triangle

(d) Isosceles triangle

3. In triangle $\triangle ABC$ $AB = BC = CA = 5$ cm. Then what is the value of $\angle A$, $\angle B$ and $\angle C$?

Sol: Since $AB = BC = CA$

$$\angle A = \angle B = \angle C$$

We know that $\angle A + \angle B + \angle C = 180^\circ$

$$\therefore \angle A = \angle B = \angle C = 60^\circ$$

4. In $\triangle PQR$ $\angle P = \angle Q = \angle R = 60^\circ$, then what can you say about the length of sides of $\triangle PQR$? Also write the name of the triangle?

Sol: $\angle P = \angle Q = \angle R = 60^\circ$

So $PQ = QR = RP$

$\triangle PQR$ is equilateral triangle

CHAPTER 05 INFORMATION PROCESSING



- ★ A tree diagram is a way of representing a sequence of events and help to process the information logically and sequentially. These tree diagrams are particularly useful in probability.
- ★ Computers use tree diagrams to represent arithmetical expressions or algebraic expressions in their memory.

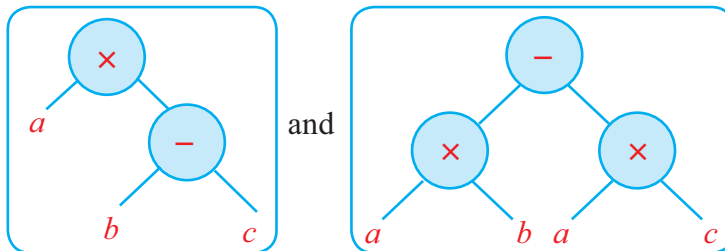


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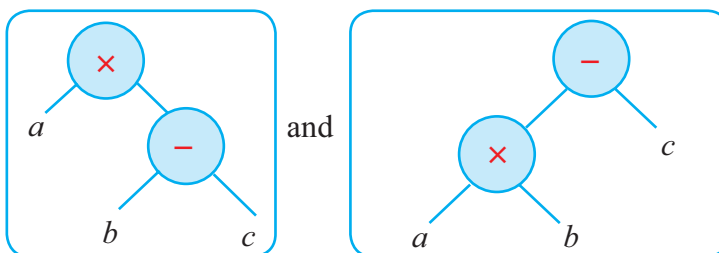
1. Check whether the Tree diagrams are equal or not.

(i)



Ans: Their algebraic expressions are $a \times (b - c)$ and $(a \times b) - (a \times c)$
 $[\therefore \text{distributive property of multiplication over subtraction}] \therefore$ They are equal

(ii)



Ans: Their algebraic expressions are $a \times (b - c)$ and $(a \times b) - c$
 Both are **not** equal [By BODMAS rule]

Science

TERM - II



HEAT

Unit

01

LEARNING OBJECTIVES

- ☐ To list out the sources of heat
- ☐ To define heat
- ☐ To distinguish hot and cold objects
- ☐ To define temperature
- ☐ To differentiate heat and temperature
- ☐ To understand the conditions for thermal equilibrium
- ☐ To understand why thermal expansion take place in solids
- ☐ To list out the practical applications of thermal expansion in day - to - day life



Evaluation

I. Choose the appropriate answer:

1. When an object is heated, the molecules that make up the object

- | | |
|--------------------------|--------------------|
| (a) begin to move faster | (b) lose energy |
| (c) become heavier | (d) become lighter |

[Ans : (a) begin to move faster]

2. The unit of heat is

- | | |
|------------|-------------|
| (a) newton | (b) joule |
| (c) volt | (d) celsius |

[Ans : (b) joule]

3. One litre of water at 30°C is mixed with one litre of water at 50°C. The temperature of the mixture will be

- | | |
|----------|---------------------------------------|
| (a) 80°C | (b) More than 50°C but less than 80°C |
| (c) 20°C | (d) around 40°C |

[Ans : (d) around 40°C]

4. An iron ball at 50°C is dropped in a mug containing water at 50°C. The heat will

- | |
|--|
| (a) flow from iron ball to water. |
| (b) not flow from iron ball to water or from water to iron ball. |
| (c) flow from water to iron ball. |
| (d) increase the temperature of both. |

[Ans : (b) not flow from iron ball to water or from water to iron ball.]

Additional Questions

I. Choose the appropriate answer:

1. We reduce the heat by adding _____ while preparing fruit juice.
 (a) sugar (b) lime (c) ice cubes (d) salt [Ans : (c) ice cubes]
2. One day in 1922, the air temperature was measured at 59°C in the shade in Libya _____.
 (a) America (b) Africa (c) Antarctica (d) Europe [Ans : (b) Africa]
3. Our normal body temperature is _____.
 (a) 34°C (b) 36°C (c) 35°C (d) 37°C [Ans : (d) 37°C]
4. The temperature determines the direction flow of _____.
 (a) heat energy (b) kinetic energy (c) potential energy (d) light energy [Ans : (a) heat energy]
5. _____ exists when two objects in thermal contact no longer affect each other's temperature.
 (a) Thermal expansion (b) Thermal equilibrium (c) average temperature (d) coolness [Ans : (b) Thermal equilibrium]

II. Fill in the blanks:

1. We feel heat on our body when the _____ shines. [Ans : Sun]
2. _____ energy can be generated by the burning of fuels like coal, wood, charcoal, gasoline etc. [Ans : Heat]
3. When _____ flows through a conductor, heat energy is produced. [Ans : Electric current]
4. _____ is a form of energy. [Ans : Heat]
5. _____ determines the direction of flow of heat. [Ans : Temperature]
6. The coldest temperature in the world was measured in the _____ continent. [Ans : Antarctic]
7. Temperature measures the _____ kinetic energy of molecules. [Ans : average]

III. True or False. If False, give the correct statement:

1. The sun give us light and heat.
 Ans : True
2. We can absorb heat by rubbing two surfaces of some substances .
 Ans : False. We can **generate** heat by rubbing two surfaces of some substances.
3. In the past people used to rub two wooden pieces together to light fire.
 Ans : False. In the past people used to rub two **stones** together to light fire.



ELECTRICITY

Unit

02

LEARNING OBJECTIVES

- ❑ To know the sources of electricity
- ❑ To be aware of the equipments working on electricity
- ❑ To know the different kinds of electric cells and understand their applications
- ❑ To be able to use different types of cells in different applications
- ❑ To understand the symbols of circuits and apply them in different circuits
- ❑ To identify conductors and insulators
- ❑ To be able to make their own batteries



Evaluation

I. Choose the appropriate answer.

1. The device which converts chemical energy into electrical energy is

(a) fan	(b) solar cell	
(c) cell	(d) television	[Ans : (c) cell]
2. Electricity is produced in

(a) transformer	(b) power station	
(c) electric wire	(d) television	[Ans : (b) power station]
3. Choose the symbol for battery

(a)	(b)	
(c)	(d)	[Ans : (a)
4. In which among the following circuits does the bulb glow?

(a)	(b)	
(c)	(d)	[Ans : (d)
5. _____ is a good conductor

(a) silver	(b) wood	
(c) rubber	(d) plastic	[Ans : (a) silver]

Additional Questions

I. Choose the correct answer:

1. One of the atomic power station is located in _____.
 (a) Mettur (b) Papanasam
 (c) Neyveli (d) Kalpakkam [Ans : (d) Kalpakkam]
2. In atomic power station _____ is used to rotate the turbine.
 (a) water (b) steam
 (c) Air (d) diesel [Ans : (b) Steam]
3. Secondary cells are used in _____.
 (a) Mobile phone (b) wall clocks
 (c) watches (d) toys [Ans : (a) Mobile phone]
4. If two or more _____ are connected in series in a circuit, then it is called series circuit.
 (a) keys (b) cells
 (c) connecting wires (d) bulbs [Ans : (d) bulbs]
5. _____ is an instrument used in electric circuits to find the quantity of current flowing through the circuit.
 (a) Volt meter (b) Ammeter
 (c) Cell (d) Key [Ans : (b) Ammeter]
6. Thomas Alva Edison invented more than _____ useful inventions which are used in homes.
 (a) 100 (b) 10
 (c) 500 (d) 1000 [Ans : (d) 1000]

II. Fill in the blanks.

1. Hydel electricity is produced in _____ in Tirunelveli district. [Ans : Papanasam]
2. In Thermal power station _____ is used as fuel. [Ans : Coal or diesel]
3. _____ Cells used in automobiles like cars and buses are large and very heavy.
 [Ans : Secondary]
4. The rate of flow of electric charges in a circuit is called _____.
 [Ans : Electric current]
5. _____ is a kind of fish which is able to produce electric current.
 [Ans : Electric Eel]
6. _____ are used to connect devices. [Ans : Connecting wires]
7. _____ was an American inventor, who invented electric bulb.
 [Ans : Thomas Alva Edison]



CHANGES AROUND US

LEARNING OBJECTIVES

- ☐ To recognize and enlist a few changes that happen in our day-to-day life
- ☐ To classify the observed changes as,
 - ◆ slow / fast, reversible / irreversible
 - ◆ physical and chemical changes
 - ◆ desirable / undesirable, natural / human made
- ☐ To explain the process of dissolution
- ☐ To distinguish between a solvent and a solute



Evaluation

I. Choose the appropriate answer:

1. When ice melts to form water, change occurs in its

(a) position	(b) colour	
(c) state	(d) composition	[Ans : (a) state]
2. Drying of wet clothes in air is an example of

(a) Chemical change	(b) Undesirable change	
(c) irreversible change	(d) physical change	[Ans : (d) physical change]
3. Formation of curd from milk is

(a) a reversible change	(b) a fast change	
(c) an irreversible change	(d) an undesirable change	[Ans : (c) an irreversible change]
4. Out of the following an example of a desirable change is

(a) rusting	(b) change of seasons	
(c) earthquake	(d) flooding	[Ans : (b) change of seasons]
5. Air pollution leading to Acid rain is a

(a) reversible change	(b) fast change	
(c) natural change	(d) human made change	[Ans : (d) human made change]

Additional Questions

I. Choose the correct answer:

1. Growth of seed into sapling is _____ change.
 (a) slow (b) chemical (c) reversible (d) undesirable [Ans : (a) slow]
2. _____ is the process in which something becomes different from what it was earlier.
 (a) Classification (b) Composition (c) Position (d) Change [Ans : (d) Change]
3. Which of the following is not a man-made change?
 (a) Burning of fuels (b) Drying of clothes (c) Tearing of paper (d) Change of day and night [Ans : (d) Change of day and night]
4. _____ change is a temporary change
 (a) Physical (b) Chemical (c) Undesirable (d) Slow [Ans : (a) Physical]
5. Raining is a _____ change.
 (a) human made (b) undesirable (c) slow (d) natural [Ans : (d) natural]

II. Fill in the blanks:

1. _____ changes which take place within a short period of time. (Fast/Slow) [Ans : Fast]
2. When 'Touch me not' plant is touched by us, _____ changes occur. (reversible/irreversible) [Ans : reversible]
3. Tearing of sheet of paper into pieces is _____ change. (physical / chemical). [Ans : physical]
4. By the process of Heating of water, _____ is obtained. (ice/steam) [Ans : steam]
5. _____ is the substance that is dissolved in a solvent. (Solute/Solvent) [Ans : Solute]
6. The changes in which new substance with new chemical properties are formed are _____ changes. (physical / chemical). [Ans : chemical]
7. Deforestation is _____ change. (Natural/human made) [Ans : human made]

III. Find whether the following sentences are true or false. If false Correct the statement:

1. The difference between initial state and the final state is called change.

Ans : True.



AIR

Unit

04

LEARNING OBJECTIVES

- ❑ To identify the components and uses of air
- ❑ To develop skills in performing experiments and arriving at conclusions
- ❑ To clarify the role of oxygen in the process of burning
- ❑ To realize the significance of air for the survival of plants and animals on earth
- ❑ To appreciate the need of air in protecting our atmosphere



Evaluation

I. Choose the appropriate answer:

1. _____ is the percentage of nitrogen in air
 (a) 78% (b) 21%
 (c) 0.03% (d) 1% [Ans : (a) 78%]
2. Gas exchange takes place in plants using _____.
 (a) Stomata (b) Chlorophyll
 (c) Leaves (d) Flowers [Ans : (a) Stomata]
3. The constituent of air that supports combustion is _____.
 (a) Nitrogen (b) carbon-di-oxide
 (c) Oxygen (d) water vapour [Ans : (c) Oxygen]
4. Nitrogen is used in the food packaging industry because it _____.
 (a) provides colour to the food
 (b) provides oxygen to the food
 (c) adds proteins and minerals to the food
 (d) keeps the food fresh [Ans : (d) keeps the food fresh]
5. _____ and _____ are the two gases, which when taken together, make up about 99 percentage of air.
 I. Nitrogen II. carbon-di-oxide
 III. Noble gases IV. Oxygen
 (a) I and II (b) I and III
 (c) II and IV (d) I and IV [Ans : (d) I and IV]

II. Fill in the blanks:

1. _____ is the active component of air. [Ans : Oxygen]
2. The gas given out during photosynthesis is _____. [Ans : Oxygen]

XI. Question based on Higher Order Thinking Skills:

1. Can you guess why fire extinguishers throw a stream of carbon-di-oxide while putting - off fire?

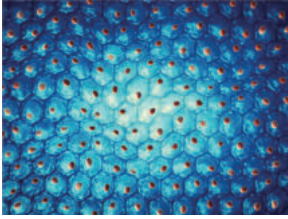
Ans : The reasons behind fire extinguishers throw a stream of CO_2 while putting-off fire:-

1. CO_2 is a colourless and in normal concentrations, odourless gas. It doesn't react with burning materials, so it doesn't create any toxic or other by-products while putting-off fire.
2. Carbon dioxide doesn't conduct electricity, making it an ideal fire suppressant for use in the places where a large amount of electricity may be present.
3. CO_2 acts on fires in two ways: The release of the gas under pressure has a cooling effect, as can be seen by the resulting mist cloud and ice particles; the gas also displaces the oxygen that's necessary to maintain combustion.

Additional Questions

I. Choose the correct answer:

1. Movement of wind takes place in _____ layer.
 (a) Troposphere (b) ozone
 (c) stratosphere (d) ionosphere [Ans : (a) Troposphere]
2. _____ is responsible for making clouds.
 (a) Hydrogen (b) Oxygen
 (c) Water vapour (d) Carbon-di-oxide [Ans : (c) Water vapour]
3. _____ layer contain ozone layer.
 (a) Troposphere (b) Stratosphere
 (c) Mesosphere (d) Exosphere [Ans : (b) Stratosphere]
4. _____ was able to identify highly reactive gas called oxygen.
 (a) Lavoisier (b) Ingenhousz
 (c) Rutherford (d) Joseph Priestley [Ans : (d) Joseph Priestley]
5. During respiration carbon-di-oxide is exhaled out of the body through the _____.
 (a) Lungs (b) Heart
 (c) Kidney (d) Skin [Ans : (a) Lungs]
6. _____ respire using their skin.
 (a) Fish (b) Frogs
 (c) Rats (d) Human beings [Ans : (b) Frogs]
7. _____ gas cylinders are used for breathing purpose for a diver going deep into the sea.
 (a) Hydrogen (b) Carbon-di-oxide
 (c) Oxygen (d) Nitrogen [Ans : (c) Oxygen]



THE CELL

Unit

05

LEARNING OBJECTIVES

- ☐ To know that all living things are made up of cells
- ☐ To observe the cell structure using microscope
- ☐ To understand the structure of cell
- ☐ To explain the components of a cell
- ☐ To understand the structural difference between animal and plant cell



Evaluation

I. Choose the appropriate answer:

1. The unit of measurement used for expressing dimension (size) of cell is ____
 (a) centimeter (b) millimeter
 (c) micrometer (d) meter [Ans : (c) micrometer]
2. Under the microscope Priya observes a cell that has a cell wall and distinct nucleus. The cell that she observed is
 (a) a plant cell (b) an animal cell
 (c) a nerve cell (d) a bacteria cell [Ans : (d) a bacteria cell]
3. A 'control centre' of the eukaryotic cell is
 (a) Cell wall (b) Nucleus
 (c) Vacuoles (d) Chloroplast [Ans : (b) Nucleus]
4. Which one of the following is not an unicellular organism?
 (a) Yeast (b) Amoeba
 (c) Spirogyra (d) Bacteria [Ans : (c) Spirogyra]
5. Most organelles in a eukaryotic cell are found in the
 (a) Cell wall (b) cytoplasm
 (c) nucleus (d) Vacuole [Ans : (b) cytoplasm]

II. Fill in the Blanks:

1. The instrument used to observe the cell is _____. [Ans : microscope]
2. I control the food production of a cell. Who am I? ____ [Ans : chloroplast]
3. I am like a policeman. Who am I ____? [Ans : cell wall]
4. The Term "cell" was coined by _____. [Ans : Robert hooke]

14. Match the following.

i.	Control center	a)	Amoeba
ii.	Energy producer	b)	Nucleus
iii.	Longest cell	c)	Mitochondria
iv.	Unicellular cell	d)	Nerve cell

15. Arrange in correct sequence.

Hen Egg, Ostrich egg, Insect egg.

16. Define - Prokaryotic cell.**17. What are the functions of nucleus.****V. Write in detail. (any one only)****(1 × 5 = 5)****18. Tabulate any five cell organelles and their functions.****19. Write the characteristics of animal cell with diagram.****Answer Key**

- I. 1. (a), 2. (b), 3. (c), 4. (d).
- II. 5) Chloroplast 6) microscope 7) Robert Hooke
- III. 8) Refer Sura's Guide Page No. 298; Q. No. III - 3.
9) Refer Sura's Guide Page No. 303; Q. No. III - 3.
10) Refer Sura's Guide Page No. 303; Q. No. III - 4.
- IV. 11) Refer Sura's Guide Page No. 300; Q. No. VIII - 3.
12) Refer Sura's Guide Page No. 299; Q. No. VIII - 1.
13) Refer Sura's Guide Page No. 298, 303; Q. No. VI - 2, V - 1,
14) (i). b, (ii). c, (iii). d, (iv). a
15) Refer Sura's Guide Page No. 298; Q. No. V - 2.
16) Refer Sura's Guide Page No. 304; Q. No. VI - 3.
17) Refer Sura's Guide Page No. 304; Q. No. VI - 5.
- V. 18) Refer Sura's Guide Page No. 301; Q. No. IX - 1.
19) Refer Sura's Guide Page No. 305; Q. No. VII - 2.





HUMAN ORGAN SYSTEMS

LEARNING OBJECTIVES

- ❑ To understand the structure and function of organs and organ systems of human body
- ❑ To gain knowledge of various human body systems and their coordination
- ❑ To understand the importance of the life processes such as Digestion, Absorption, Respiration, Excretion



Evaluation

I. Choose the appropriate answer:

1. Circulatory system transports these throughout the body

(a) Oxygen	(b) Nutrient	
(c) Hormones	(d) All of these	[Ans : (d) All of these]
2. Main organ of respiration in human body is

(a) Stomach	(b) Spleen	
(c) Heart	(d) Lungs	[Ans : (d) Lungs]
3. Breakdown of food into smaller molecules in our body is known as

(a) Muscle contraction	(b) Respiration	
(c) Digestion	(d) Excretion	[Ans : (c) Digestion]

II. Fill in the blanks:

1. A group of organs together make up an _____ system. [Ans : organ]
2. The part of the skeleton that protects the brain is _____. [Ans : skull]
3. The process by which the body removes waste is _____. [Ans : Excretion]
4. The _____ is the largest sense organ in our body. [Ans : skin]
5. The endocrine glands produce chemical substances called _____. [Ans : hormones]

III. True or False. If False, give the correct statement:

1. Blood is produced in the bone marrow.

Ans : False, **Red Blood Corpuscles** are produced in the bone marrow.

(ii) Renal vein :

Brings filtered blood from the kidneys to the inferior vena cave.

(iii) Kidneys :

Regulate the chemical composition of fluids in the body.

(iv) Ureter :

Carries urine from the kidneys to the urinary bladder.

(v) Urinary bladder :

An expandable, muscular sac that retains urine until it is discharged from the body.

(vi) Urethra :

The tube through which urine is discharged from the body, it is surrounded by muscles that allow us to control urination.

Intext Activities

ACTIVITY - 1

Sit absolutely still. Observe the movements taking place in your body. You must be blinking your eyes time to time. Observe the movements in your body as you breathe. Write down the movements in your note book.

We are able to move a few parts of our body easily in various directions and some, only in one direction. Why we are not able to move some parts at all directions?

Ans : We are able to bend or rotate our body in places where two parts of our body seem to be joined together - like elbow, shoulder or neck. These places are called joints. If our body has no joints, it would not be possible for us to move in any way at all.

Bones cannot be bent. But we can bend our elbow. It is not one long bone from the upper arm to our wrist. It is different bones joined together at the elbow. Similarly, there are many bones present in each part of the body.

We can bend or move our body only at those points where bones meet. There are different types of joints in our body to help us carry out different movements and activities. Let us see the function / movements of some of the joints in our body.

Fixed joints which do not allow movement are called fixed joint.

Gliding joints allow only a limited amount of movement of sliding nature of cartilage. For example, the joints of back bone.

Hinge joint allows movement only in one plane. For example, fingers, knees. Elbow joint is composed of hinge joint. These joints allow movement in one plane and up to 180° only. Hence, we cannot move our elbows backwards.

Pivotal joint allows movement in all planes, i.e. up and down, side and other planes. For example, head.

Ball and socket joint allows movement in all directions. The rounded end of one bone fits into the cavity (hollow space) of other bone. Such a joint only allows movements in all directions. For example, joint between upper arm.





PARTS OF COMPUTER

LEARNING OBJECTIVES

- ☐ To know the Input unit, CPU and the Output unit.
- ☐ To understand the memory unit.
- ☐ To differentiate the input and output devices.
- ☐ To link the connections in Computer.



Evaluation

I. Choose the correct answer:

1. Which one of the following is an output device?

- | | |
|-------------|--------------|
| (a) Mouse | (b) Keyboard |
| (c) Speaker | (d) Pendrive |

[Ans : (c) Speaker]

2. Name the cable that connects CPU to the Monitor

- | | |
|--------------|----------------|
| (a) Ethernet | (b) Power Cord |
| (c) HDMI | (d) USB |

[Ans : (*)]

*correct answer is "VGA lable"

3. Which one of the following is an input device?

- | | |
|-------------|--------------|
| (a) Speaker | (b) Keyboard |
| (c) Monitor | (d) Printer |

[Ans : (b) Keyboard]

4. Which one of the following is an example for wireless connections?

- | | |
|-----------|--------------------|
| (a) Wi-Fi | (b) Electric wires |
| (c) VGA | (d) USB |

[Ans : (a) Wi-Fi]

5. Pen drive is _____ device

- | | |
|-------------|----------------------|
| (a) Output | (b) Input |
| (c) Storage | (d) Connecting cable |

[Ans : (c) Storage]

Additional Questions

I. Choose the correct answer:

1. The _____ is used to move the pointer on a computer screen.
 (a) Pendrive (b) Microphone
 (c) Mouse (d) Scanner [Ans : (c) Mouse]
2. The page on the monitor can be moved up and down using the _____.
 (a) Right button (b) Scroll ball
 (c) Left button (d) Number key [Ans : (b) Scroll ball]
3. Memory can be expanded externally with the help of _____.
 (a) Compact Disc (b) Mouse
 (c) Keyboard (d) Light pen [Ans : (a) compact disc]
4. The data is measured in units which is called as _____.
 (a) micron (b) meter
 (c) millimeter (d) Bit [Ans : (d) Bit]
5. To connect the speaker to the computer, _____ is used.
 (a) mic cable (b) Audio jack
 (c) power cord (d) Data cable [Ans : (b) Audio jack]

II. Fill in the blanks.

1. The data is processed in the _____. [Ans : CPU]
2. The output unit converts, command received by the computer in the form of _____. [Ans : binary signals]
3. The Computer system which has _____ monitor, emits less heat. [Ans : TFT]
4. _____ computer comes under the micro computer. [Ans : personal]
5. As the computer is connected with one another, it is also called as _____. [Ans : system]
6. To connect the Mic to the CPU _____ is used. [Ans : mic wire/cord]

III. Give short answer:

1. Give some examples of input devices.

Ans : Keyboard, Mouse, Scanner, Barcode Reader, Microphone, Web camera, Light pen are some input devices.

2. What are the two types of keys in key board?

Ans : Keyboard has two types of keys namely number keys and alphabet keys.

3. Give the uses of right and left button of mouse.

Ans : Right button is used to select files and to open folder. Left button is used to carryout corrections in the file.