

➤ **ANSWERS OF (ASSIGNMENT-II) HW QUESTIONS : CHAPTER 1**

- 1) Give one word for the following.
- a) Substance present in the cell wall of sclerenchyma. - Lignin
 - b) One living component of xylem tissue. - Xylem parenchyma
 - c) Direction of conduction of food by phloem. – Bidirectional

- 2) Differentiate between the following according to their function.

a)

Xylem	Phloem
It transports water and minerals from the root to the apical part of the plant.	It transports food from the leaves to the growing part of the plant.

b)

Parenchyma	Sclerenchyma
They perform functions such as photosynthesis, food storage	It protects the plant from stress and strain and gives mechanical strength

- 3) A diagram is given alongside. Identify it. - Meristematic tissue

a) Mention the parts 1-3.

- 1- Apical meristem
- 2- Intercalary meristem
- 3- Lateral meristem

b) Write down the function of the part marked 1-3.

- 1 - A meristem at the tip of a plant shoot or root that causes the shoot or root to increase in length.
- 2 - The intercalary meristems help in increasing the length of the internode .
- 3 - These meristems help in increasing the girth of the plants.

- 4) Mention the components of xylem and phloem.

Components of Xylem- Tracheids , Xylem vessels , Xylem parenchyma, Xylem fibres

Components of Phloem - Sieve tubes, Companion cells , Phloem fibres, Phloem

Parenchyma.

- 5) A diagram is given alongside.

a) Identify A,B,C.

A- Parenchyma

B- Collenchyma

C- Sclerenchyma

b) Compare the location and shape of the three cells.

	Parenchyma	Collenchyma	Sclerenchyma
Location	Mainly this is packing tissue and located in the soft part of the plant like piths, cortex, medullary rays.	It is located in dicot stem, petiole and beneath the epidermis.	It is located in seed, fruit pulp, bundle sheath etc.
Shape	Oval , spherical or polygonal cells are present	Circular ,oval or polyhedral cells are present.	Cells are Variable in shape.

6) Why sclerenchyma is dead cell?

Mature sclerenchyma cells are dead because there is no cytoplasm and nucleus.

Sclerenchyma, in plants, composed of various kinds of hard woody cells. Mature sclerenchyma cells are usually dead cells that have heavily thickened secondary walls containing lignin. The cells are rigid and nonstretchable and are usually found in nongrowing regions of plant bodies, such as the bark or mature stems.

➤ **SOME MORE SOLVED QUESTIONS OF CHAPTER 1 –
{LEARN AND PRACTISE}**

1. State whether the statements are true or false. Correct the false statements.

- a) A tissue is formed of only one type of cells. - True
- b) Cells form an organ. – False
Correct - Tissue forms an organ.
- c) Permanent tissue is made up of undifferentiated and dividing cells. – False
Correct - Meristematic tissue is made up of undifferentiated and dividing cells.
- d) Meristematic tissue is found at growing tips of plant – True.
- e) Phloem is formed of dead tubular cells. – False.
Correct – Phloem is formed of living tubular cells.

2. Fill in the blanks by selecting suitable words from the list given below.

[thin-walled, collenchymas, vascular, tissues, conducting]

- a) A group of **_ tissues _** working together to perform a function is called an organ.
- b) Xylem and Phloem form the **_ conducting _** tissue.
- c) Conducting tissue is called **_vascular_** tissue.
- d) Cells are elongated and thick at the corners in **_collenchyma_** tissue.
- e) Parenchyma is composed of large **_thin-walled_** cell.

3. Mention the odd term & give reasons.

- a) Apical, Xylem, Intercalary, Lateral
Odd – Xylem
Reason – Xylem is conducting tissue while rest are part of meristematic tissue.
- b) Meristematic, Parenchyma, Sclerenchyma, Collenchyma
Odd – Meristematic
Reason – Meristematic is composed of dividing cells while rest are composed of non dividing cells.
- c) Tracheid, Phloem fibre, vessel element, Sieve tube
Odd – Sieve tube
Reason – Sieve tube is living cell while rest are dead cells.
- d) Companion cell, Phloem fibre, Tracheid, Sieve tube
Odd – Tracheid
Reason – Tracheid is part of xylem while rest are part of phloem.
- e) Collenchyma, Phloem, Sclerenchyma, Parenchyma
Odd – Phloem
Reason – Phloem is vascular tissue while rest are ground tissue.

4. Give reasons in support of your answers for the following statements.

- a) Lignin is present in the cell wall of sclerenchyma.
Lignin provides the mechanical support for stems and leaves and supplies the strength and rigidity of plant walls. Lignin provides the structural strength needed by large trees to reach heights.
- b) Conduction by xylem is unidirectional but conduction by phloem is bidirectional.
Xylem flow is unidirectional and phloem flow is bidirectional because xylem transport water from soil to leaves and phloem transfers the food synthesized in leaves to all the parts of plants wherever it is necessary.

c) Phloem is living tissue but xylem is not.

All the components of xylem except xylem parenchyma are dead, hence Xylem is a non-living tissue. The main function of xylem is conduction of water. For this the xylem elements need to form a narrow tube like structure, so that water can rise in the tube through capillary action. For this the cell walls of the tracheid and vessel components need to be lignified and their inner components lost. This will only be possible in case of dead cells. Also transport of water occurs by physical forces and does not require energy. All components of phloem are living, except phloem fibres. Since the transport of food is done by active transport which needs energy, most of the phloem parts are alive and not dead like xylem.

d) Intercellular space is present in parenchyma.

Parenchyma is the most common living plant tissue. They have more intracellular spaces, and consists of thin cell walls and have large vacuoles. The main function of the parenchyma cells of roots and stem is the storage of food and water. The intercellular air spaces help in gaseous exchange also.

e) Meristematic tissue is responsible for growth of the plant.

A meristematic is a tissue in plants that consists of undifferentiated living cells capable of cell division as they have a prominent nucleus and dense cytoplasm. But since these cells do not store food material or waste materials, they lack vacuole. This might pose a problem for cell division. Due to this reason meristematic cells lack vacuole. As meristematic cells have immense potential to divide, it is responsible for the growth of the plant.

Solutions of ch-8

Ex-8.1

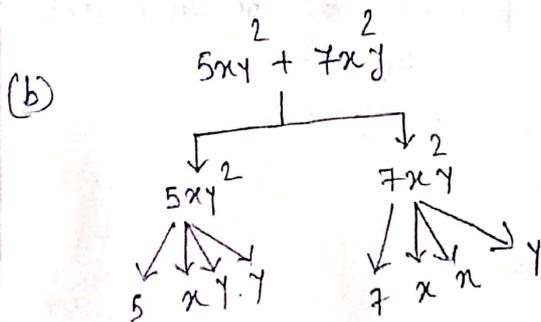
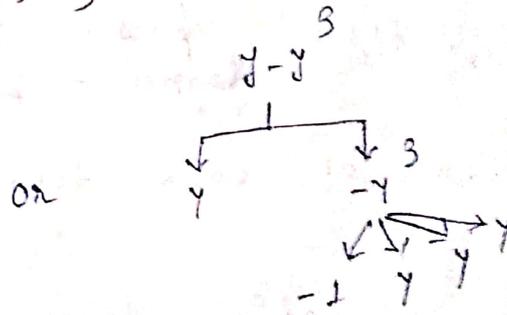
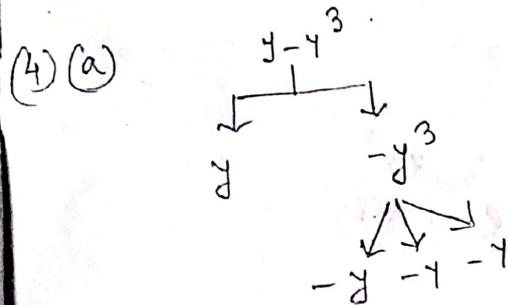
1. (a) ~~5x~~ 5 times of $x = 5x$
 $\therefore 13 - 5x$ (Ans)

(b) Squares of x and $y = x^2$ and y^2
 $\therefore x^2 + y^2$ (Ans)

2. (a) The terms are, $2, -5a, \frac{1}{2}b$
(b) The terms are, $3x^5, 4y^3, -7xy^2, 3$

3. (a) Terms = $(-4x), 5y$
Factors = (-4) and x ; 5 and y

(b) Terms = $1.2ab, -2.4b, 3.6a$
Factors = $1.2, a, b$; $-2.4, b$; $3.6, a$



(5) Terms

Numerical Co-efficients

(a) 1
 $2x$
 $-3x^2$

1
 2
 -3

(b) $1.2a$
 $0.8b$

1.2
 0.8

(6) Terms containing x

$$-8xy$$

$$-7xyz$$

$$4xy^2$$

co-efficient of
 x

$$-8y$$

$$-7yz$$

$$4xy$$

(7) (a) binomial, (b) monomial, (c) trinomial

(8) (a) Like terms $\rightarrow xy^2, -2xy^2$

(b) Like terms $\rightarrow 3ab^2, -6a^2b; 2abc, 4abc$

9. (a) Highest power of $x = 8$

$$\therefore \text{degree} = 8$$

(b) $1-x^2$ can be written as $1 \cdot x^0 - x^2$ [$\because x^0 = 1$]

\therefore highest power = 2

$$\therefore \text{degree} = 2$$

(c) powers of each term; $7 = 7x^0$

$$\therefore \text{power} = 0$$

$$-2x^3; \text{power} = 3$$

$$-5xy^3; \text{power} = \text{power of } x + \text{power of } y \\ = 1 + 3 = 4$$

$$9y^5; \text{power} = 5$$

\therefore highest power = 5

$$\text{degree} = 5$$

Ex - 8.2

$$\begin{aligned} \text{1. (i)} \quad 6x + (-11x) \\ = 6x - 11x \\ = -5x \quad (\text{Ans}) \end{aligned}$$

$$\begin{aligned} \text{(ii)} \quad \frac{1}{2}pq + \left(-\frac{1}{3}\right)pq \\ = \frac{1}{2}pq - \frac{1}{3}pq \\ = \frac{3pq - 2pq}{6} = \frac{pq}{6} \quad (\text{Ans}) \end{aligned}$$

$$\begin{aligned} \text{(iii)} \quad -2abc + 3abc + abc \\ = 2abc \quad (\text{Ans}) \end{aligned}$$

$$2. (i) 12m^2 - 9m + 5m - 4m^2 - 7m + 10$$

$$= 12m^2 - 4m^2 - 9m + 5m - 7m + 10$$

$$= 8m^2 - 11m + 10 \text{ (Ans)}$$

$$(ii) p - (p - q) - (q - p) - q$$

$$= p - p + q - q + p - q$$

$$= p - q \text{ (Ans)}$$

$$(iii) -z^2 + 13z^2 - 5z + 7z - 15z$$

$$= -z^2 + 13z^2 + 7z - 5z - 15z$$

$$= 12z^2 - 20z \text{ (Ans)}$$

$$3. (i) 4xy^2 + (-3xy^2) + (-5xy^2) + 5xy^2$$

$$= 4xy^2 + 5xy^2 - 3xy^2 - 5xy^2$$

$$= 9xy^2 - 8xy^2 \text{ (Ans)}$$

$$(ii) 7a^2 - 5a + 2 + 3a^2 - 7 + 2a + 9 + 1 + 2a - 5a^2$$

$$= 7a^2 + 3a^2 - 5a^2 - 5a + 2a + 2a + 2 - 7 + 9 + 1$$

$$= 5a^2 - a + 5 \text{ (Ans)}$$

$$4. (i) 5x^4 - 3x^4 - 7x^2 + 8x^2 + 8x + 11x - 1 + 7 - 2 + 3x^3$$

$$= 2x^4 + x^2 + 19x + 4 + 3x^3 \text{ (Ans)}$$

$$5. (i) -2xy - (-7xy)$$

$$= -2xy + 7xy$$

$$= 5xy \text{ (Ans)}$$

$$(ii) (5p^2 + 3q^2 - pq) - (4pq - 5q^2 - 3p^2)$$

$$= 5p^2 + 3p^2 + 3q^2 + 5q^2 - pq - 4pq$$

$$= 8p^2 + 8q^2 - 5pq \text{ (Ans)}$$

$$(iii) (4m^2 - 3mn + 8) - (-m^2 + 5mn)$$

$$= 4m^2 - 3mn + 8 + m^2 - 5mn$$

$$= 4m^2 + m^2 - 3mn - 5mn + 8$$

$$= 5m^2 - 8mn + 8 \text{ (Ans)}$$

6. Adding $4 + 3x$ and $5 - 4x + 2x^2$, we get,

$$4 + 3x + 5 - 4x + 2x^2$$

$$= 9 - x + 2x^2 \quad (\text{Ans.})$$

Now, adding, $3x^2 - 5x$ and $-x^2 + 2x + 5$

$$= 3x^2 - 5x + (-x^2 + 2x + 5)$$

$$= 3x^2 - 5x - x^2 + 2x + 5$$

$$= 2x^2 - 3x + 5$$

Now, $(9 - x + 2x^2) - (2x^2 - 3x + 5)$

$$= 9 - x + 2x^2 - 2x^2 + 3x - 5$$

$$= 4 + 2x \quad (\text{Ans})$$

7. Let the ~~term~~ expression to be subtracted is x .

$$\therefore -7mn + 2m^2 + 3n^2 - x = m^2 + 2mn + n^2$$

$$\Rightarrow x = (-7mn + 2m^2 + 3n^2) - (m^2 + 2mn + n^2)$$

$$\Rightarrow x = -7mn + 2m^2 + 3n^2 - m^2 - 2mn - n^2$$

$$\Rightarrow x = -9mn + m^2 + 2n^2 \quad (\text{Ans})$$

8. The required expression, $(93p^2 - 55p + 4) - (13p^3 - 5p^2 + 17p - 90)$

$$= 93p^2 - 55p + 4 - 13p^3 + 5p^2 - 17p + 90$$

$$= 98p^2 - 72p + 94 - 13p^3 \quad (\text{Ans})$$

9. Let the expression be P .

$$\therefore 3x^2 - 4y^2 + 5xy + 20 - P = -x^2 - y^2 + 6xy + 20$$

$$\Rightarrow (3x^2 - 4y^2 + 5xy + 20) - (-x^2 - y^2 + 6xy + 20) = P$$

$$\Rightarrow 3x^2 - 4y^2 + 5xy + 20 + x^2 + y^2 - 6xy - 20 = P$$

$$\Rightarrow P = 4x^2 - 3y^2 - xy \quad (\text{Ans})$$

10. First, we will add $2y^2 + 3yz$, $-y^2 - yz - z^2$ and $yz + 2z^2$.

$$\begin{aligned} \therefore & 2y^2 + 3yz + (-y^2 - yz - z^2) + yz + 2z^2 \\ &= 2y^2 + 3yz - y^2 - yz - z^2 + yz + 2z^2 \\ &= y^2 + 3yz + z^2 \end{aligned}$$

Now, the sum of $3y^2 - z^2$ and $(-y^2 + yz + z^2)$

$$\begin{aligned} &= 3y^2 - z^2 + (-y^2 + yz + z^2) \\ &= 3y^2 - z^2 - y^2 + yz + z^2 \\ &= 2y^2 + yz \end{aligned}$$

Now, $(y^2 + 3yz + z^2) - (2y^2 + yz)$

$$\begin{aligned} &= y^2 + 3yz + z^2 - 2y^2 - yz \\ &= z^2 + 2yz - y^2 \quad (\text{Ans}) \end{aligned}$$

Ex. 8.4

Q.1. (i) $5n + 1$

because, $5 \times 1 + 1 = 6$

$5 \times 2 + 1 = 11$

$5 \times 3 + 1 = 16$

(ii) $5n + 2$, $5 \times 1 + 2 = 7$
 $5 \times 2 + 2 = 12$
 $5 \times 3 + 2 = 17$

where $n = 1, 2, 3, \dots$

Q.2. (i) The number of line segments required to form 5, 10, 100 in each case,

$3n + 2$

$3 \times 5 + 2 = 17$; $3 \times 10 + 2 = 32$; $3 \times 100 + 2 = 302$

(ii) $5n + 1$

$5 \times 5 + 1 = 26$; $5 \times 10 + 1 = 51$; $5 \times 100 + 1 = 501$

(iii) $5n + 2$

$5 \times 5 + 2 = 27$; $5 \times 10 + 2 = 52$; $5 \times 100 + 2 = 502$

(iv) $4n + 3$

$4 \times 5 + 3 = 23$; $4 \times 10 + 3 = 43$; $4 \times 100 + 3 = 403$

check your progress :-

Q.1. (i) 3, Trinomial

(ii) $\frac{3}{2}xy^2$, $(-\frac{1}{2}xy^2)$, $6x^2y^2$

(iii) N. $\rightarrow (-\frac{1}{2})$, L. $\rightarrow xy^2$

(iv) $-\frac{1}{2}y^2$

Q.2 (i) degree = 3

(ii) degree = 4

$(\begin{matrix} 2+2=4 \\ \text{for } x^2 \text{ and } y^2 \end{matrix})$

Q.3. Perimeter of a triangle, = sum of its three sides.

$$\begin{aligned} \therefore \text{Perimeter} &= 5a - 3b + 3a + 2b + 5b - 2a \\ &= 6a - b + 5b \\ &= 6a + 4b \quad (\text{Ans}) \end{aligned}$$

Q.4. Sum of $3x^2 + 2xy - 2y^2 + (5y^2 - 7xy)$

$$\begin{aligned} &= 3x^2 + 2xy - 2y^2 + 5y^2 - 7xy \\ &= 3x^2 - 5xy + 3y^2 \end{aligned}$$

$$\begin{aligned} \therefore (5x^2 + 2y^2 - 3xy) - (3x^2 - 5xy + 3y^2) \\ &= 5x^2 + 2y^2 - 3xy - 3x^2 + 5xy - 3y^2 \\ &= 2x^2 - y^2 + 2xy \quad (\text{Ans}) \end{aligned}$$

Q.5. (i) $ab + 2bc + 3ca + 4abc$

Putting the given values,

$$3 \times 0 + 2 \times 0 \times (-2) + 3 \times (-2) \times (3) + 4 \times 3 \times 0 \times (-2)$$

$$= 0 + 0 - 18 - 0$$

$$= -18 \quad (\text{Ans})$$

(ii) $a^3 + b^3 + c^3 - 3abc$

$$= (3)^3 + (0)^3 + (-2)^3 - 3 \times 3 \times 0 \times (-2)$$

$$= 27 - 8 + 0$$

$$= 19 \quad (\text{Ans})$$

Rational number ch-3

A rational number is a number that can be expressed as the quotient or fraction p/q of two integers, a numerator p and a non-zero denominator q . Since q may be equal to 1, every integer is a rational number. We can say that '0' is also a rational number, as we can represent it in many forms such as $0/1$, $0/2$, $0/3$. But, $1/0$, $2/0$, $3/0$, etc, are not rational.

Now, there are some points to be noted.

1. Real numbers (\mathbb{R}) include all the rational numbers (\mathbb{Q}).
2. Real numbers include the integers.
3. Every whole number is a rational number because every whole number can be expressed as a fraction.

As for example, $2 = \frac{2}{1}$
 $3 = \frac{3}{1}$

Standard form of Rational Numbers:-

The standard form of a rational number can be defined if it's no common factors aside from one between the dividend and divisor and therefore the divisor is positive.

For example, $\frac{12}{36}$ is a rational number.

But- it's standard form is $\frac{1}{3}$.

Positive rational numbers - If both the numerator and denominator are of same signs. Example:- $\frac{12}{17}$, $\frac{3}{5}$... All are greater than zero.

Negative rational numbers - If numerator and denominator are of opposite signs. All are less than zero.

Examples - $-\frac{2}{17}$, $\frac{9}{-11}$

Some Properties of rational numbers:-

1. The result of two rational numbers is always a rational number if we add, multiply or subtract them.

2. A rational number remains the same if we divide or multiply both numerator and denominator with the same number.

Examples

Q.1. Which of the following are positive rational numbers?

$\frac{5}{8}$, $-\frac{3}{11}$, $\frac{0}{5}$, 7, -4, $-\frac{3}{-13}$, $\frac{-17}{-6}$, $\frac{9}{-20}$

Solution:- $\frac{5}{8}$, $\frac{0}{5}$, 7, $-\frac{3}{-13}$ or $\frac{3}{13}$, $\frac{-17}{-6}$ or $\frac{17}{6}$

Q.2. Which of the following are negative rational numbers?

$-\frac{5}{7}$, $\frac{4}{-3}$, $\frac{-3}{-11}$, -6, 9, 0, $-\frac{28}{5}$, $\frac{31}{7}$

Solution:- $-\frac{5}{7}$, $\frac{4}{-3}$, -6, $-\frac{28}{5}$

Q.3. Find four rational numbers equivalent to each of the following.

(i) $\frac{3}{-7}$, (ii) $\frac{-5}{-9}$

(i) $\frac{3}{-7} = \frac{3}{-7} \times \frac{2}{2} = \frac{6}{-14}$ [Multiply N and D by 2]

$\frac{3}{-7} = \frac{3}{-7} \times \frac{3}{3} = \frac{9}{-21}$ [Multiply both N and D each by 3]

$$(iii) \quad \frac{3}{-7} = \frac{3}{-7} \times \frac{4}{4} = \frac{12}{-28} \quad \left[\begin{array}{l} \text{Multiply both} \\ \text{N and D by} \\ \text{4} \end{array} \right]$$

$$(iv) \quad \frac{3}{-7} = \frac{3}{-7} \times \frac{5}{5} = \frac{15}{-35} \quad \left[\begin{array}{l} \text{Multiply both N} \\ \text{and D by 5} \end{array} \right]$$

Q. 4 write as positive denominator.

$$\frac{4}{-9} = \frac{-4}{9}$$

Q. 5 Write next four rational numbers in each of the following patterns:-

$$-\frac{1}{4}, -\frac{2}{8}, -\frac{3}{12}, -\frac{4}{16}, \dots$$

Next four rational numbers:-

$$-\frac{1}{4}, -\frac{2}{8}, -\frac{3}{12}, -\frac{4}{16}, -\frac{5}{20}, -\frac{6}{24},$$

$$-\frac{7}{28}, -\frac{8}{32}$$

Q. 6 ~~(i)~~ which of the following pairs of rational numbers are equal?

$$(i) \frac{-3}{-7} \text{ and } \frac{15}{35}, (ii) \frac{-6}{8} \text{ and } \frac{10}{-15}, (iii)$$

$$\frac{6}{-10} \text{ and } \frac{-12}{20}$$

Solution:-

$$(i) \frac{-3}{-7} \text{ and } \frac{15}{35}$$

$$\frac{15}{35} = \frac{-3}{-7} \quad \left[\begin{array}{l} \text{We can show by cross multipli-} \\ \text{cation. If the product are} \\ \text{same, then the fractions will be} \\ \text{equal.} \end{array} \right]$$

$$15 \times (-7) = -105$$

$$35 \times (-3) = -105$$

Similarly the others two also we can verify.

H.W

Ex - 3.1

Q.1 Find four rational numbers equivalent to $\frac{-5}{-9}$.

Q.2 Write next four rational numbers following the pattern:-

$$\frac{2}{-3}, \frac{-4}{6}, \frac{-6}{9}, \frac{-8}{12}, \dots$$

Q.3 Which of the following pairs represent the same rational number?

(i) $\frac{-16}{20}, \frac{20}{-25}$, (ii) $\frac{-3}{5}, \frac{-12}{20}$, (iii) $\frac{8}{-5}, \frac{-24}{15}$

[Hint: - First find out the standard form]

Q.3 Fill in the blanks:-

$$(i) \frac{5}{4} = \frac{\quad}{16} = \frac{25}{\quad} = \frac{-15}{\quad}$$

Q.4 Reduce each of the following rational numbers in standard form.

(i) $\frac{-45}{30}$, (ii) $\frac{16}{-36}$

- [Solution of Second assignment of Ch-1(Physical Quantities and Measurement) Date : 22/04/20]

1. Difference between Mass and Weight :-

Mass	Weight
1)It is quantity of matter contained in a body.	1)It is measure of force of gravity acting on an object.
2)Mass can never be zero.	2)Weight can be zero if no gravity acts on a body like in space.
3)Mass is measure by beam balance.	3)Weight is measure by spring balance.
4)Mass is a scalar quantity.	4)Weight is a vector quantity.
5) S.I unit of mass is kilogram(Kg).	5)S.I unit of weight is newton(N).
6)Mass always remains constant.	6) Weight varies from place to place.

2. Conversions :-

i) gcm^{-3} to kgm^{-3}

$$1 \text{ g} = \frac{1}{1000} \text{ kg}$$

$$1 \text{ cm}^3 = \frac{1}{1000000} \text{ m}^3$$

$$\text{Now, } 1 \text{ gcm}^{-3} = \frac{1 \text{ g}}{1 \text{ cm}^3} = \frac{\frac{1}{1000} \text{ kg}}{\frac{1}{1000000} \text{ m}^3}$$

$$1 \text{ gcm}^{-3} = \frac{1}{1000} \times \frac{1000000}{1} \text{ kgm}^{-3} = 1000 \text{ kgm}^{-3}$$

$$1 \text{ gcm}^{-3} = 1000 \text{ kgm}^{-3}$$

ii) m^3 to cm^3

$$1 \text{ m}^3 = 1 \text{ m} \times 1 \text{ m} \times 1 \text{ m} = 100 \text{ cm} \times 100 \text{ cm} \times 100 \text{ cm} = 1000000 \text{ cm}^3$$

$$1 \text{ m}^3 = 1000000 \text{ cm}^3 \quad [\text{Since, } 1 \text{ m} = 100 \text{ cm}]$$

iii) ms^{-1} to kmh^{-1}

$$1 \text{ m} = \frac{1}{1000} \text{ km}$$

$$1 \text{ sec} = \frac{1}{3600} \text{ hour.} \quad 1 \text{ ms}^{-1} = \frac{1 \text{ m}}{1 \text{ s}} = \frac{\frac{1}{1000} \text{ km}}{\frac{1}{3600} \text{ h}} \Rightarrow 1 \text{ ms}^{-1} = \frac{1}{5400} \times \frac{180000}{1} \text{ km h}^{-1} \Rightarrow 1 \text{ ms}^{-1} = \frac{18}{5} \text{ kmh}^{-1}$$

3. i) a) Initial Water Level (V_1) = 20 ml

$$\text{Final Water Level } (V_2) = 30 \text{ ml}$$

$$\text{Volume of Lead piece } (V) = V_2 - V_1 = (30 - 20) \text{ ml} = 10 \text{ ml} = 10 \text{ cm}^3. \quad [\text{Since, } 1 \text{ ml} = 1 \text{ cm}^3]$$

$$\text{b) Density} = \frac{\text{mass}}{\text{volume}} = \frac{115 \text{ g}}{10 \text{ cm}^3} = 11.5 \text{ gcm}^{-3}$$

$$\text{Now, } 1 \text{ gcm}^{-3} = 1000 \text{ kgm}^{-3}$$

$$\text{So, } 11.5 \text{ gcm}^{-3} = \frac{11.5 \times 1000}{1} = 115 \times 100 = 11500 \text{ kgm}^{-3}$$

$$\text{ii) Density} = \frac{\text{mass}}{\text{volume}}$$

$$\Rightarrow \text{Volume} = \frac{\text{mass}}{\text{Density}} = \frac{312 \times 10}{7.8} = \frac{40 \cancel{3120}}{1 \cancel{78}} = 40 \text{cm}^3$$

$$\text{iii) } 72 \text{ kmh}^{-1} = \frac{2 \cancel{72} \times 1000}{1 \cancel{3600}} = 20 \text{ms}^{-1}$$

$$\text{iv) Density} = \frac{\text{mass}}{\text{volume}}$$

$$\Rightarrow \text{Mass} = \text{Density} \times \text{Volume} = 0.25 \times 25 = 6.25 \text{ g}$$

*****END*****

Date: 27/04/20

CLASS-7. SUB-PHYSICS

CHAPTER-1 (PHYSICAL QUANTITIES AND MEASUREMENTS)

Q1: You are required to take out 200 ml of milk from a bucket full of milk . How will you do it?

Ans:-> Steps are:-

- For this, a measuring beaker of 200ml capacity is taken. It is washed and dried.
- Then the measuring beaker is immersed well inside the milk contained in the bucket so that beaker gets completely filled with milk.
- Now, from the bucket measuring beaker is taken out gently so that no milk splashes out and then the milk from measuring beaker is poured into another empty vessel.

Q2: How does density of water change when

- It is heated from 0 °C to 4 °C.
- It is heated from 4 °C to 10 °C.

Ans:-> a) Water contracts when heated from 0 °C to 4 °C. Due to contraction, volume decreases .Decrease in volume results in increase in density. So, density of water increases when heated from 0 °C to 4 °C.

- Water expands on heating from 4 °C to 10 °C. Due to expansion, volume increases. Increase in volume results in decrease in density. So, density of water decreases with when heated from 4 °C to 10 °C.

Q3: At which temperature density of water is maximum and what is it value?

Ans:-> Density of water is maximum at 4 °C. The value is 1 gcm⁻³ or 1000 kgm⁻³.

Q4: The density of brass is 8.4 gcm⁻³. What do you understand by this statement?

Ans:-> It means 8.4 g amount of brass is contained in per unit volume.

Q5: Describe the method in steps to find area of an irregular lamina using a graph paper

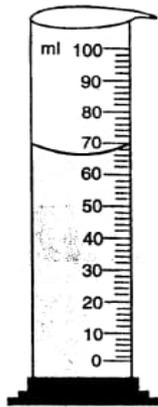
Solution: Steps are –

- The lamina is placed on a graph paper and its boundary line is drawn with a pencil.
- The lamina is removed and in its drawn outline number of squares are counted on the graph paper.
- Within the outline, the number of completed squares and number of half squares and more than half squares are counted but the squares less than half are not counted.

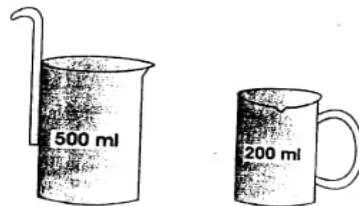
- d) So, area of lamina is equal to sum of area of completed squares and area of half or more than half squares .
- e) Suppose, 'n' be the total number of counted squares and area of one big square on graph paper is $1\text{cm} \times 1\text{cm} = 1\text{cm}^2$. So, area of lamina will be $n \times 1\text{cm}^2 = n\text{cm}^2$.

Q6: Draw diagrams of measuring cylinder and measuring beaker

Ans:->



Measuring cylinder



Measuring beakers

Numericals:

1) A car travels with a speed of 12ms^{-1} ,while a scooter travels with a speed of 36 kmh^{-1} Which of the two travels faster?

Solution: Speed of car = 12 ms^{-1}

$$\text{Speed of scooter} = 36\text{ kmh}^{-1} = 36 \times \frac{1000}{3600}\text{ ms}^{-1}$$

$$= 10\text{ ms}^{-1}.$$

So, the speed of scooter = 10 ms^{-1} .

Now, $12\text{ ms}^{-1} > 10\text{ ms}^{-1}$.

So, the car travels faster.

2) Length, breadth and height of a water tank are 5 m, 2.5m and 1.25 m respectively. Calculate capacity of water tank in litres.

Solution: Capacity means Volume

$$\begin{aligned}\text{Volume of water tank} &= l \times b \times h \\ &= (5 \times 2.5 \times 1.25) \text{ m}^3 \\ &= 15.625 \text{ m}^3.\end{aligned}$$

Volume of water tank in litre

$$1 \text{ m}^3 = 1000 \text{ litre}$$

$$\begin{aligned}\text{So, } 15.625 \text{ m}^3 &= \frac{15625}{1000} \times 1000 \\ &= 15625 \text{ litre.}\end{aligned}$$

3) A rectangular field is of length 60 m and breadth 35 m. Find area of the field.

Solution: Area of field = $l \times b = (60 \times 35) \text{ m}^2 = 2100 \text{ m}^2$.

• **THIRD HOME ASSIGNMENT:**

- 1) Discuss the use of measuring beaker in steps.
- 2) How does density of water change when heated from 0 °C to 4 °C?
- 3) Density of water is maximum at _____ °C.
- 4) Which squares are counted and which squares are not counted while measuring area of an irregular lamina on a graph paper ?
- 5) Solve numerical
 - a) Find the volume of a box whose dimensions are 2 cm, 4 cm, 5 cm. Convert the volume in m³.
 - b) Find area of the field if its length is 30 m and breadth is 15 m. Convert area in hectares.

CLASS 7
HISTORY

DATE: 27/04/20

CHRISTIANITY IN EUROPE

CONTINUED.....

ROLE OF MONASTERIES- With the church receiving a lot of support from the kings and emperors, it went on to become very powerful. Corrupt practices also started in the church. It was during this period, the monasteries played a very important role, when people were losing faith in the religion.

It was the simple and disciplined lifestyle of the monks and the nuns who lived in the monasteries which again attracted the common people and helped to restore faith back in the religion. These monasteries were a centre of production and innovation of art, culture and learning. It also sheltered people during different times of crisis. It was also because of these monks and nuns many people converted their religion to Christianity. Thus monasteries played a very important role during the medieval period.

CRUSADES – Christianity gave Medieval Europe an identity of its own. Despite different interest, a common European civilization emerged. Europe united to oppose the threat of Islam had posed when the Turks knocked at the door of Byzantine Empire.

For the next 200 years [1096 – 1291] European countries joined their forces with the blessings of Pope to fight a series of wars against the Turks. These wars were called ‘Crusades’. Crusades were fought to rescue Jerusalem, a holy place for the Christians from the Muslim Turks.

During this period of two centuries Europe launched eight crusades. Though the Christian warriors actually achieved little and the holy land of Jerusalem remained in Muslim hands but still they managed to slow down the military expansion of Islam across Europe and North Africa.

By 1300 CE Ottomans, a another group of Turks came into power and after a series of wars the once mighty Byzantine Empire fell into the hands of Ottoman Turks.

CRUSADES – Military expedition undertaken by Christian powers to win the Holy land from the Muslims.

MONKS – Male members of a religious community, who did not marry and devoted their lives to religious pursuits and service to humanity were called monks.

NUNS – Women who led the same life like monks were called nuns. Their separate monasteries were called nunneries or convents. They too were not permitted to marry.



A monastery in Europe

became common among the **clergy**. The common people started losing faith in Christianity and the Church.

It was in these times of falling faith that **monasteries** started playing an important role in medieval Europe.

The Beginning of Monasteries

A monastery was a place where groups of **monks** lived together to pray and work.

Female monks were called '**nuns**' and lived in nunneries or convents.



A medieval monk



A medieval nun

Saint Benedict, who lived at Italy in the beginning of the 6th century CE, formed the first community of monks in Europe. It

E/12
was called the **Benedictine order** and it soon became famous all over Europe. The rules laid down by Saint Benedict came to be accepted as a standard code of monastic life.



Saint Benedict—the Benedictine monks were also called '**black monks**' as they wore black robes. The conversion of people to Christianity at this time, was largely due to the efforts of the Benedictine monks.

The **Cluniacs**, a new monastic order founded in 910 CE at Cluny in France, took forward the work of reforming the Church started by Saint Benedict.

The Importance of Monasteries

Monasteries as 'role models' for the people

The monks led an austere (simple and strict) and disciplined communal life. They were not even allowed to have any belongings. Their pious ways of living set a fine example for the common people, and inspired them to respect the Church once more.

Monasteries as centres of production

The monasteries were also centres of production and innovation. The monks grew crops, reclaimed land and conserved forests. Some specialised in raising sheep for wool. There were skilled craftsmen among them.



A fresco created by monks

Monasteries as centres of art and culture and learning

The monasteries also played a very important role in the development of art, literature and education in this period. The monks created beautiful stained glass windows in the monasteries.

They also created **frescoes** murals and paintings on the walls of the monasteries. A fresco is a form of painting done on 'fresh' or wet plaster.

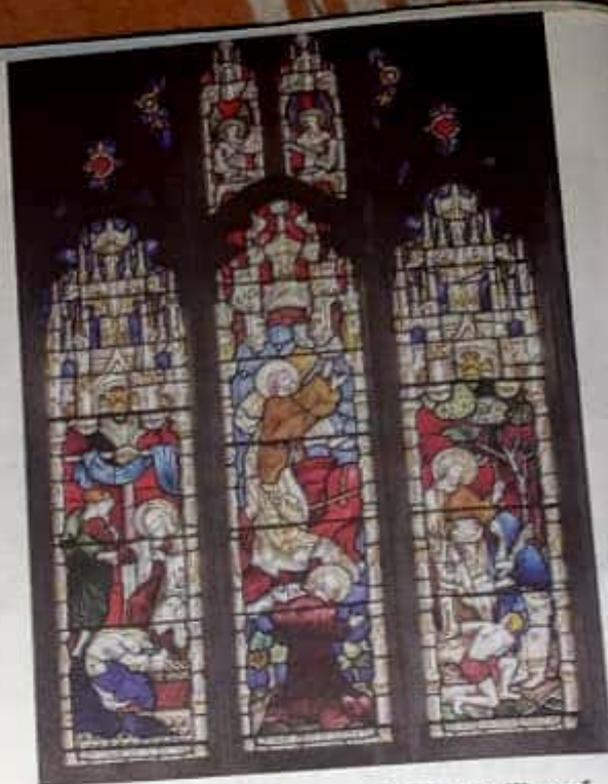
The monks studied and copied valuable manuscripts from Greek and Latin, thus helping the preservation of knowledge from various cultures for future generations.

Education was often the main focus of some monasteries, with subjects as diverse as philosophy, medicine, history and astrology being studied. Some leading universities of today, like Cambridge and Oxford in Britain, were monasteries during the later medieval period (circa 1200 CE).

Monasteries as sanctuaries

During Barbarian invasions or in times of plague and famine, the monasteries sheltered a lot of people.

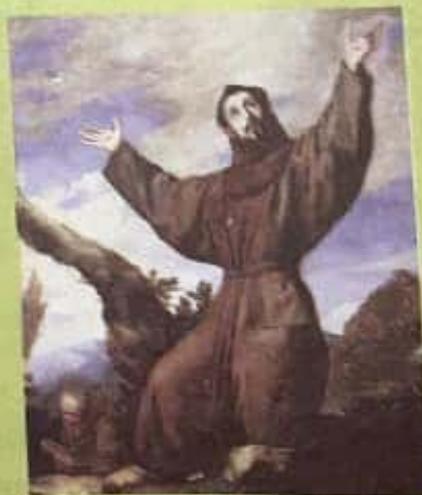
The monasteries, therefore, played an important role in medieval Europe. They acted as catalysts or agents of change, and



A stained glass window at the Basilica of Saint Denis, Paris

Go further...

In 1209 CE, **Saint Francis of Assisi** founded the order of Franciscans in Italy, one of the most famous order of friars. Unlike the monks whose life was confined to the monastery, the friars reached out to the poor and the needy. They not only preached to them but also tended those who were sick. The friars owned no property. They went about barefoot, wore rough clothes, slept on the bare ground and lived on charity. The friars became a source of strength to the Church in the 13th century CE.



Saint Francis of Assisi

helped bring about religious, economic and cultural growth in Europe. They also helped in the spread of Christianity.

THE EMERGENCE OF THE TURKS AND THE CRUSADES

In the 11th century CE, the Seljuk Turks of Central Asia had taken control of Jerusalem and the Holy Lands (an area considered holy by the Jewish people, Christians and Muslims; it mainly included the modern states of Israel and Palestine). The Seljuk Turks were Turkish warriors who ruled parts of Central Asia and Middle East from the 11th to the 14th centuries CE. When they threatened Emperor Alexios, the ruler of the Byzantine Empire, he appealed to the Pope and Western Europe for help.

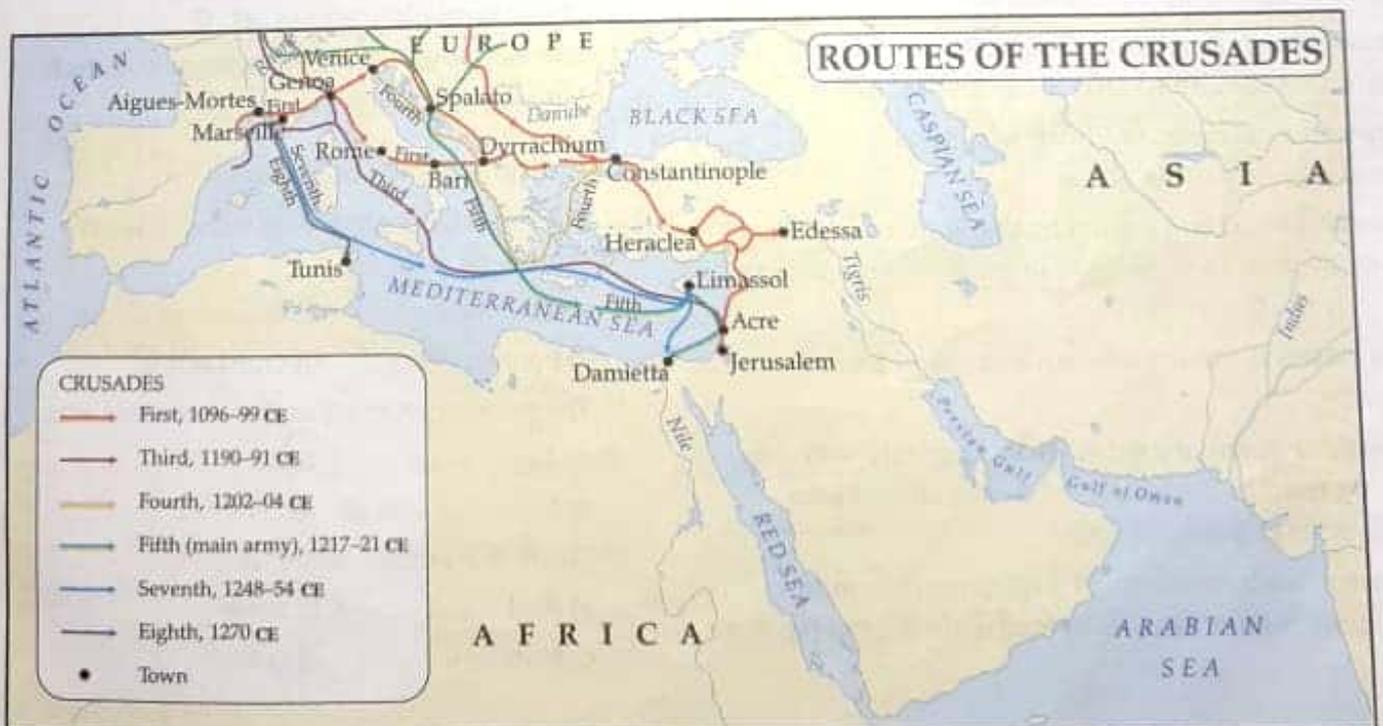
This appeal, along with stories of the ill-treatment of Christians in the Holy Lands, encouraged Pope Urban II to call for the First Crusade in 1095 CE. The Crusades were the series of wars fought by the Christians to recapture Jerusalem and the Holy Lands from the Muslims. Though several wars

were fought between 1096 CE and 1291 CE, the Crusaders were not able to capture the Holy Lands. However, they were able to slow down the military expansion of Islam across Europe and North Africa.

The Fourth Crusade (1204 CE) led to the capture of Constantinople, and the weakening of the Byzantine Empire. By 1300 CE, another group of Turks, the **Ottomans**, had come to power in western Asia. After a series of decisive wars, the once mighty Byzantine Empire finally fell to the Ottoman Turks in 1453 CE.



The First Crusade



SUBJECT – ENGLISH LANGUAGE
CLASS - VII
STUDY MATERIAL NUMBER – 5
EXPLANATION & HOME ASSIGNMENT
DATE- 27/04/2020

SOLUTION OF [CHAPTER -11 PREPOSITION]

OF DATE (24/04/2020)

HOME ASSIGNMENT NUMBER -4

Fill in the blanks with suitable prepositions :-

1. She prays to God daily .
2. He is always in need for money .
3. He died of heart attack .
4. The two cars collided against each other .
5. Don't clap till I finish talking .
6. The wheel was wedged between two boulders
7. You are suspended for today .
8. He warned me of the danger .
9. Innocent civilians were among the casualties .
10. She was carrying her handbag along her arms .
11. We enjoy driving across the highway .
12. The public protested against the nuisance .
13. He had to push his way through the crowd to get in .
14. Books were scattered along the room .
15. Do you believe in life after death .
16. The new factory is expected to come online in May .
17. The mob stoned her to death .
18. The field will be ploughed at the end of the month
19. Our path was strewn with difficulties .
20. The innocent girl burst into tears .

DATE – 27/04/2020

STUDY MATERIAL NUMBER – 5

EXPLANATION & HOME ASSIGNMENT

CHAPTER-12 [CONJUNCTIONS]

EXPLANATION OF CONJUNCTIONS

1. Define Conjunction?

Ans : A **conjunction** is the part of speech (or word **class**) that serves to connect words, phrases, clauses, or sentences. The common **conjunctions**--and, but, for, or, nor, yet, and so--join the elements of a coordinate structure.

Or

Conjunction is a word that connects or joins clauses, words, phrases together in a sentence.

Conjunctions are used to coordinate words in a sentence. “but”, “although”, “while” are some common conjunctions.

2. Name the types of Conjunctions ?

Ans : There are five types of conjunctions:

- i) coordinating conjunctions
- ii) correlative conjunctions
- iii) subordinating conjunctions
- iv) compound conjunctions and
- v) linking adverbs and transition words.

3. Explain the types of conjunctions in details

i) Coordinating Conjunctions-

The coordinating conjunctions are used to connect words, phrases and clauses of equal ranks.

The coordinating conjunctions include: (and, but, or, nor, for, yet, so).

And

It is used to combine two words, sentences or ideas,

e.g.

1. I like to drink tea **and** coffee.
2. He eats cake, chocolate, pastry **and** chips.

But

It is used to connect to contrast ideas,

e.g.

1. Andy likes red, **but** Sophie likes blue.
2. I am dancing, **but** she is singing.

Or

It is used to express a choice between two things,

e.g. You can eat it with a fork **or** a spoon.

1. You are making the diagram horizontally **or** vertically.

Nor

It is used to combine two words or ideas both of which are to be negated.

e.g.

1. Ram is drinking neither hot chocolate **nor** coffee.
2. Kiran has not come **nor** has Shyam.

For

It is used as a conjunction of purpose or reason,

e.g.

1. I cannot attend the meeting **for** I am unwell,
2. I am not willing to spend so much money on it **for** it is very expensive.

Yet

It is used to express that something has not happened but you expect it to happen.

e.g.

1. I am not very comfortable doing it **yet** I will try doing it.
2. Rocky terrorises the poodles next door **yet** adores the German Shepherd across the street.

So

It is used as a conjunction of result or consequence,

e.g.

1. Everyone was busy in work, **so** I brought all the items myself.
2. All the rooms of the hotel were occupied, **so** I had to shift here.

ii) Correlative Conjunctions -

Those conjunctions that are used in pairs to connect two words, phrases or sentences are known as correlative conjunctions.

Either..... or

It is used to show choice between two things,

e.g.

1. **Either** Max **or** James has taken the pen.
2. I will drink **either** cold coffee **or** ice tea.

Neither... nor

It is used to refuse both of the choices,

e.g.

1. I will go to **neither** Jaipur **nor** Jaisalmer.
2. **Neither** they are writing **nor** are they allowing me to write.

Both.... and

It is used to combine two ideas.

e.g.

1. My brother is **both** smart **and** intelligent.
2. I will eat **both** North Indian food **and** Chinese food.

Whether..... or

It is used to express doubt or choice between two things.

e.g.

1. Tell me **whether** you will do it **or** not.
2. Do you know **whether** it will be raining today **or** not?

Not only..... But also

It is used to express the inclusion of more than one thing.

e.g.

1. She is **not only** a dancer **but also** singer.
2. We are **not only** composing the music for a film **but also** directing a film.

(The rest of the types will be continued in the next study material)

HOME ASSIGNMENT OR HOME WORK**SOLVE THE FOLLOWING EXERCISES GIVEN BELOW :-****EX- A) Fill in the blanks with appropriate conjunctions :**

1. Susan is very fat..... very active.
2. A student must obey..... he may leave.
3. The bridge collapsed..... it was made of stones.
4. He will try..... he is forced to.
5. The old man cared for the puppy..... it were his baby.
6. He is cheerful he has worked the whole day.
7. Lydia likes to sing..... dance when she is happy.
8. You will do well..... you study hard.
9. The show started the chief guest arrived.
10. He was rowing the boat..... I slept.

EX-B) Complete the following sentences using an appropriate conjunction.

1. *We brought the food they supplied the drink.*

but

and

for

2. *She was poor she was honest.*

but

or

so

3. *We can go jogging we can stay here.*

and

but

or

4. *People liked her she was honest.*

so

because

but

while

5. *I will phone you I arrive.*

as

while

when

6. *He told me he loved me it was a lie.*

what, and

that, but

that, and

7. *It is a problem solution has baffled even the experts.*

that

whom

whose

8. *It is a question nobody can answer.*

that

which

Either could be used here

9. *I stayed an extra night I could see more of Mumbai.*

so

so that

Either could be used here

10. *you need help, just let me know.*

If

Unless

Whether

(This chapter will be continued in the next day...)

Date: 27.04.2020

**COMPUTER (HOME ASSIGNMENT – 3)
CLASS – 7**

SOLUTION OF HOME ASSIGNMENT – 2

1. Name the main components of hardware.

Ans: - The main components of hardware are –

- | | |
|----------------------------------------------------------|-------------------|
| a) Motherboard. | f) Power Supply. |
| b) Processor. | g) Power Cable. |
| c) Hard Disk Drive. (HDD) | h) Fan. |
| d) Random Access
Memory.(RAM) | i) Graphics Card. |
| e) Removable Media
Devices.(CD,DVD, Blu-
ray Disk) | |

2. Define the following: - i) Mother Board. ii) Removable Media Device.

Ans: - i) **Mother Board** – A motherboard is a computer's main circuit board, which connects all the other components to one another. It is the physical base upon which everything build. It contains a lot of machine's core features, like –

- Input/output ports
- Peripheral connections
- PCI expansion slots
- Bus and power connectors
- Heat sinks and mounting points for fans and major components, including the central processing unit (CPU) and optional coprocessors
- Supporting chipset for CPU, bus and external components
- BIOS (Basic input output system)
- Memory sockets for RAM, ROM and cache
- Interconnecting circuitry

ii) **Removable Media Device** – It is a storage media that holds content in digital format and is read using a laser assembly .The most common types are – Compact Disc (CD) – Digital Versatile Disc (DVD) Floppy Disc (FD), USB Flash Drive, Blu-ray (BD).

**CHAPTER: 1 (COMPUTER HARDWARE COMPONENTS)
STUDY MATERIAL NO. – 1.3**

External Hardware Components:-In general, external refers to anything outside of a location. External describes a hardware device that is installed outside of the

computer. For example, a printer (shown to the right) is an external device because it is connected to the back of the computer and is outside of the case.

1) MONITOR

The monitor is the display for a PC. This is where anything you can see is displayed. Monitors vary in size and use LCD (Liquid Crystal Display) screens for better quality. They connect to the PC through a cable attached to the graphics card. Newer monitors use OLED (Organic Light-Emitting Diode) rather than LCD because they produce more high quality visuals, but do cost more than LCD screens.

2) KEYBOARD

The keyboard is the main way of typing on a PC. When typed, each key produces a letter on the screen. Keyboards vary depending on what they are used for, some are basic and used for normal activity or specialist keyboards that control computer functions are also used in specialist industries. Keyboards connect to a PC wirelessly or use USB cables.

3) MOUSE

The mouse is the primary way of navigating a computer. The mouse used to have a ball that could move in any direction. Now, infra red lasers have replaced the ball and are more efficient than the ball mice. Currently, touch controlled mice with no physical buttons are being tested but are not as good as the laser or ball mice currently used in many PCs.

4) PRINTER

The printer is computer hardware that will print anything written or created on a PC onto paper, whether it be text or photos. Printers on the market today use either inkjet (liquid ink) or laser (toner) technology. They also have other functions besides printing; this includes copying, faxing and scanning making it a useful piece of hardware.

5) SPEAKER

A computer speaker is an output hardware device that connects to a computer to generate sound. The signal used to produce the sound that comes from a computer speaker is created by the computer's sound card.