

# CDT Materials(2019-20)

Class – IV

Mathematics



**1. Number System:** The ways of representation of numbers using digits or other symbols in a consistent manner.

Types of numbers:-

1. **Natural Numbers-** Counting numbers 1,2,3,4,5 are called natural numbers. e.g.,  
1,2,3,4,5,6,.....

2. **Whole Numbers-** All counting numbers together with zero form the set of whole numbers.  
(i) 0 is the only whole number which is not a natural number.  
(ii) Every natural number is a whole number.

3. **Integers-** All natural numbers, 0 and negatives of counting numbers. e.g., 0, -1, -2, -3, 1, 2, 3,.....

4. **Even Numbers-** A number divisible by 2 is called an even number, e.g., 2, 4, 6, 8, 14, 52 etc.

5. **Odd Numbers-** A number not divisible by 2 is called an odd number. e.g., 1, 3, 5, 7, 9, 11, etc.

6. **Prime Numbers-** A number greater than 1 is called a prime number, if it has exactly two factors, namely 1 and the number itself. e.g., 3, 11, 7,.....

7. **Composite Numbers-** Numbers greater than 1 which are not prime, are known as composite numbers, e.g. 9, 10, 12, 15, 36 etc.

(i) 1 is neither prime nor composite.

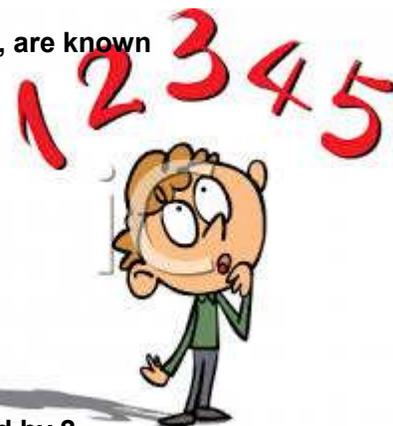
(ii) 2 is the only even number which is prime.

(iii) There are 25 prime numbers between 1 and 100.

8. **Even, Odd Numbers**

A number is even if the remainder is zero when the number is divided by 2.

A number is odd if the remainder is one when the number is divided by 2.



## Place Value and Face Value

**Place Value-** Place value of a digit in a number is the digit multiplied by its position in the place value chart. It depends upon a digit's position in the number. As the digit moves on to the left, its value increases.

Lakhs Period		Thousands Period		Ones Period		
Ten Lakhs	Lakhs	Ten Thousand	Thousands	Hundreds	Tens	Ones
6	4	5	7	2	8	3

The place value chart has been separated into three groups: The ones period has three places- Hundreds, tens, and ones. The thousands period has two places- Ten thousands and thousands. The next period is the lakh period which includes- Ten lakhs and lakhs.

### Use of Commas

If we write the number without using the place value charts, we use comma( , ) to separate the periods.

Let us take an example: 64,57,283

First comma is used when the ones period is complete. Second comma is used when thousands period is complete. Next comma is used to separate thousands and lakhs period.

### Face Value-

Face value of a digit in a number is the digit itself, irrespective of the position of the digit in the number.

In the number 9843

Face value of 9 = 9

Face value of 8 = 8

Face value of 4 = 4

Face value of 3 = 3

### *Remember*

- 1. The face value of a digit in any number is the digit itself.*
- 2. The place value and face value of a digit in the ones place are always equal.*
- 3. The place value and face value of zero in any number is always zero.*

## 2.Computation Operations : Addition, Subtraction, Multiplication and Division are most

ancient mathematical tools. The fundamental day to day activities are the combination of these four basic mathematics. We must have expertise over the hidden application of these mathematical operations.



✓ **Problems containing addition, subtraction or both.**

**Example 1:** Add the subtraction of 516 and 132 with 945.

**Example 2:** There were 512 apples in a stock. One more stock of 452 apples was brought and added to first. In total 65 apples were found not worth to sell so thrown away. How many apples can the stockiest sell ?

✓ **Problems containing multiplication, division and unitary method.**

**Example: 1.** Words on 25 pages = 825 ; words on 1 page = \_\_\_\_\_

**Example:2.** Cost of 16 tickets is Rs. 672. How much will it cost for 9 tickets?

### a) Measurement

#### 1. Length

The standard unit for measuring length is a meter. One-meter equals roughly one long step of an adult man. One kilometer equals about 12 minute's walk.



Length of cloth, the height of a wall, the height of a tree, the distance between two objects are all measured on meters. Carpenters use measuring tape for making furniture. Cloth merchant uses a meter rod for measuring length of clothes.

#### *Remember*

*1 Kilometer = 1000 meter*

*1 Meter = 100 Centimeter*

*1 Centimeter = 10 millimeter*

#### Short cut to problem solving for length

- ✓ Always start from 0 while using measuring instruments.
- ✓ Millimeter (mm) and centimeter (cm) are used to measure the small objects.
- ✓ Meter (m) and Kilometer (km) are used to measure large distance.
- ✓ Always convert the length of given objects in to same unit of length before solving them.

## 2. Weight

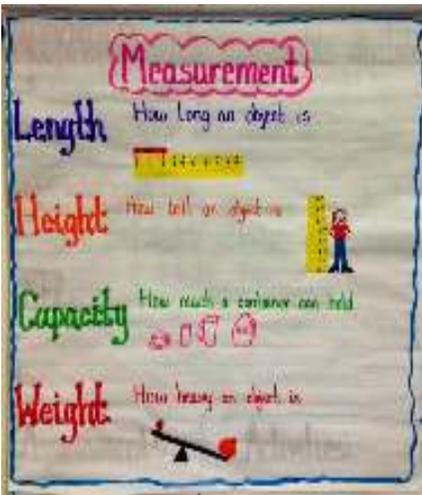
The standard unit for measuring mass or weight is a kilogram. We weigh things in kilograms. Lighter objects and smaller quantities of things are weighed in grams. We write Kilogram as kg and gram as gm. We commonly see cast iron weights in vegetable shop used to measure weight of vegetables.

### Points to Remember

- ✓ Always start from 0 while using weighing balance.
- ✓ Gram (gm) is used to weigh lighter objects.
- ✓ Kilogram (kg) is used to measure heavier objects.
- ✓ Always convert the weight of given objects in to same unit of weight before adding or subtracting them.

*1 Kg = 1000 Gm*

### Different units of measurement for measurement



Items	Units of measurement	Items	Units of measurement
Height of desk	M or Cm	Distance between two cities	Km
Height of Building	Meter	Height of coconut tree	Meter
Length of saree	Meter	Height of water bottle	CM
Vegetables	Kg or gm	Length of sewing needle	CM

## b) Money- Currency is the foundation of national economics.

### Conversion of Rupees into Paise:

- ✓ We know that 1 rupee = 100 paise. When we convert rupees into paise, we multiply by 100.



For example, Rs 7.75 = Rs 7 + 75 paise  
 = 7 × 100 paise + 75 paise  
 = 700 paise + 75 paise  
 = 775 paise



### Conversion of Paise into Rupees :

- ✓ To convert paise into rupees first we need to count two digits from the right and put a point and also write Rs or Re in the beginning.

Examples : (i) 1450 p = Rs 14.50

(ii) 4155 p = Rs 41.55

(iii) 1 p = Rs 0.01



### c) BODMAS

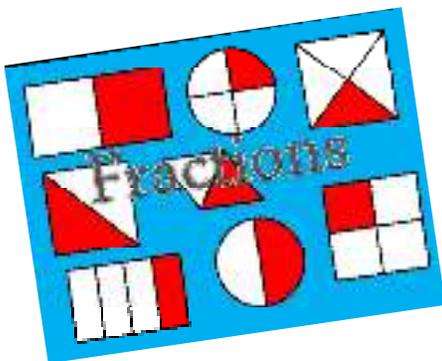
<b>B</b>	<b>O</b>	<b>D</b>	<b>M</b>	<b>A</b>	<b>S</b>
Brackets (...)	Orders $\sqrt{x}$ $x^2$	Division $\div$	Multiplication $\times$	Addition $+$	Subtraction $-$

(a)  $(3 + 2) \times 6 - 8$  (brackets first)  
 $= 5 \times 6 - 8$  (multiplication second)  
 $= 30 - 8$  (subtraction last)  
 $= 22$

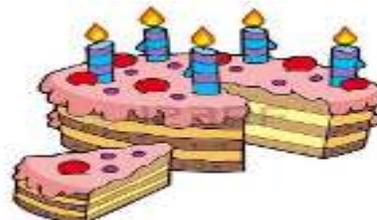
(b)  $4 \times 6 + 18 \div 2$  (multiplication and division first)  
 $= 24 + 9$   
 $= 33$

(c)  $(17 - 2) + 5 + 6$  (brackets first)  
 $= 15 + 5 + 6$  (addition second)  
 $= 26$  (addition last)

$+$ and $+$ $=$ $+$ $-$ and $-$ $=$ $-$ $+$ and $-$ $=$ $-$ $-$ and $+$ $=$ $-$	$\div$ and $\div$ $=$ $\div$ $\times$ and $\times$ $=$ $\times$ $\div$ and $\times$ $=$ $\div$ $\times$ and $\div$ $=$ $\times$
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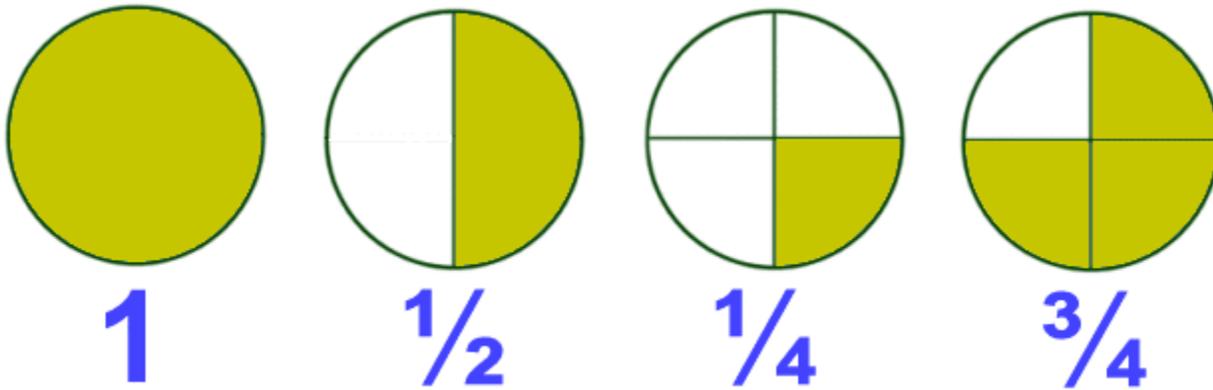


**3. Fractions-** A Fraction is a part of a whole. The whole can be a region or a collection. A region is a whole when there is only one Object. For example, a cake represents a whole and a slice of it represents a fraction.



## Fraction of a Region

- a) **Half-** Half means one of the two equal parts of a whole. Take a square sheet of paper. Fold it exactly into two equal parts crease the folding well and unfold the paper. Both are parts of a whole. The two equal parts are of the same size and each is called a half. It is represented as  $\frac{1}{2}$  and is read as one by two.
- b) **Thirds-** Third means three equal parts of a whole. When a whole is divided into three equal parts, then each part represents one-third of the whole. It is represented as  $\frac{1}{3}$ . If two parts out of three are covered, then it is called as two thirds. It is represented as  $\frac{2}{3}$ .
- c) **Fourths-** Fourth means four equal parts of a whole. When a whole is divided into four equal parts, then each part represents one fourth or quarter of the whole. It is represented as  $\frac{1}{4}$ . If three parts are covered, then it is called three fourths. It is represented as  $\frac{3}{4}$ .



**4. Roman Numbers :** Numbers in this system are represented by combinations of letters from the Latin alphabet. It originated from ancient Rome and remained the usual way of representing the numbers.

**Basics :** I II III



- ✓ Numerals I, V, X, L, C, D, and M are used for 1, 5, 10, 50, 100, 500 and 1000.
- ✓ Repeating a numeral up to three times represents addition of the number. For example, III represents  $1 + 1 + 1 = 3$ . Only I, X, C, and M can be repeated; V, L, and D cannot be.

- ✓ Writing numerals that decrease from left to right represents addition of the numbers. For example, LX represents  $50 + 10 = 60$  and XVI represents  $10 + 5 + 1 = 16$ .
- ✓ Writing a smaller numeral to the left of a larger numeral represents subtraction but it is applicable only to I, X and C .
- ✓ For larger numbers, a bar over a numeral means to multiply the number by 1000. For example,  $\overline{D}$  represents  $500 \times 1000 = 500,000$  and  $\overline{M}$  represents  $1000 \times 1000 = 1,000,000$ , one million.

## 5. Shapes and Symmetry:-



**Plane Shape** -Any shape that can be drawn in the plane is called a plane shape.



- ✓ A closed shape with only straight sides as edges is called a polygon.
- ✓ Triangle is the simplest polygon.
- ✓ Circles and semicircles are not polygons because they have curved sides.
- ✓ When all the sides of a polygon are equal, it is equilateral .If all the angles of a polygon are equal, it is equiangular. When a polygon is both equilateral and equiangular, it is a regular shape. Equilateral triangles, squares are regular.

**Types of Plane shapes:-**

**Triangles:-** A triangle is a closed shape with three sides. It is classified according to its sides or angles, with three kinds each.

**Triangles according to sides:-**

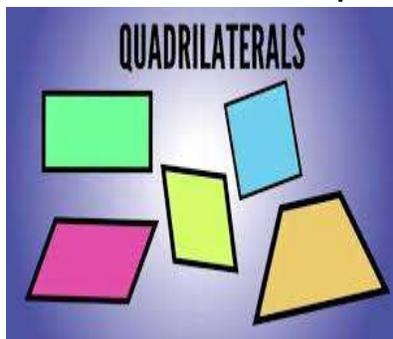


- ✓ **Equilateral triangles:** These have three sides equal and three angles equal. Their angles are always  $60^\circ$ .
- ✓ **Isosceles triangles:** These are the triangles in which two of the sides are equal. The non-included angles of the sides are also equal.
- ✓ **Scalene triangles :** These have no equivalence at all.

**Triangles according to angles:-**

- ✓ **Right triangles** : These are the triangles with a right angle. The longest side of such triangles is called a hypotenuse.
- ✓ **Obtuse triangles** : These are the triangles with an obtuse angle.
- ✓ **Acute triangles** : These are the triangles with no right or obtuse angle.

**Quadrilaterals** :A quadrilateral is a closed shape with four sides. Some common types of quadrilaterals:-



- ✓ **Parallelograms** are shapes where opposite sides and angles are equal.
- ✓ **Rectangles** are parallelograms where all the angles are 90°. Its breadth is the shorter sides, and length is its longer ones.
- ✓ **Rhombuses** are parallelograms where all the sides are equal, and opposite angles are equal.
- ✓ **Squares** are parallelograms that are both rectangles and rhombuses, i.e. all angles are right and all sides are equal.
- ✓ **Trapezium** have two opposite sides that are parallel.

**Common names of some polygons with multiple sides.**

Number of sides	Name of polygon
3	triangle
4	quadrilateral
5	pentagon
6	hexagon
7	heptagon
8	octagon
9	nonagon
10	decagon
12	dodecagon

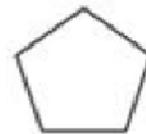
regular polygons



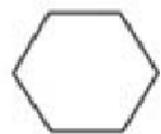
triangle  
3 sides



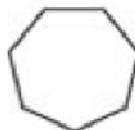
quadrilateral  
4 sides



pentagon  
5 sides



hexagon  
6 sides



heptagon  
7 sides



octagon  
8 sides



nonagon  
9 sides

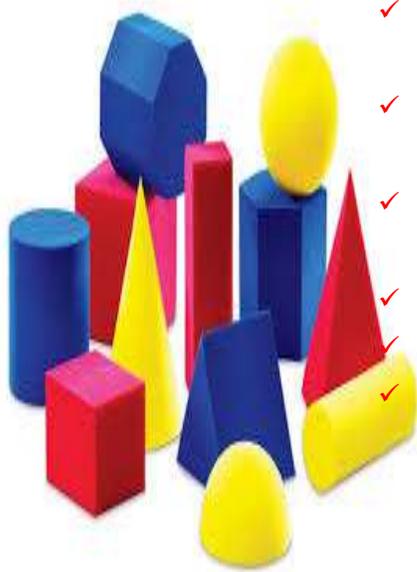


decagon  
10 sides

**Circles** – The corner-less closed figure all the parts of boundary of which are equidistant from a fixed point called center of circle.

**Solid Shapes**:-A solid shape is a three-dimensional figure that has width, depth and height. Examples of solid shapes include cubes, pyramids and spheres.

Some common solid shapes:-



- ✓ **Cuboids** are solid figures having six faces, that are rectangles. Some examples may include a book, a piece of furniture, or a jewelry box.
- ✓ **Cubes** are just a special case of cuboids. Cubes are solid figures that have six faces that are all squares of the same size.
- ✓ **Cone** is a solid figure that has a circular face on one end, called the base, and a point at the other end where the sides meet.
- ✓ **Cylinder** is a solid figure that has two circular bases and one curved side.
- ✓ **Sphere** is a solid figure that is round and has the shape of a ball.
- ✓ **Pyramid** is a solid figure that has a polygon as its base on one end and triangular faces all meeting at a single point on the other end.

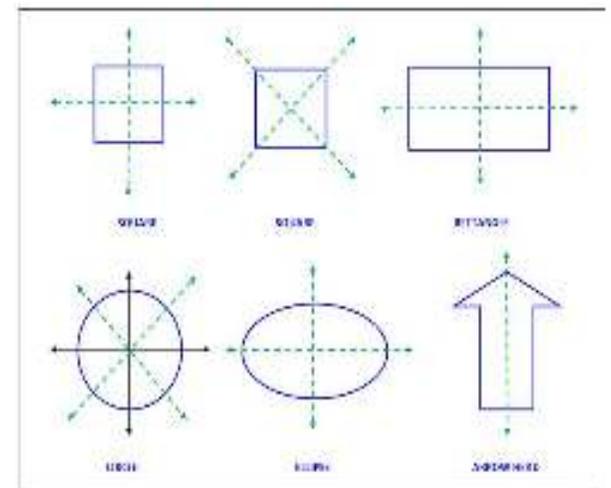
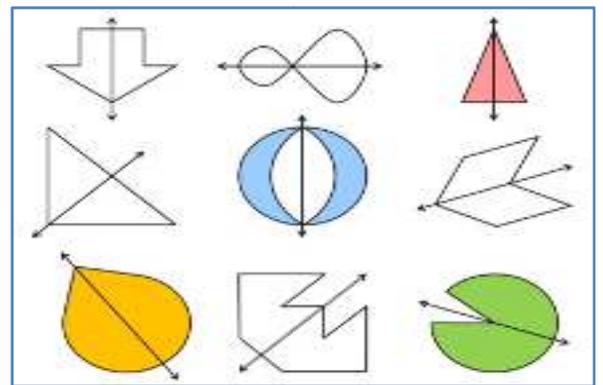
## Symmetry

Two figures are called symmetrical, if one-part overlaps the other completely. The line dividing the picture in the middle forms two equal halves. The line is called as the line of symmetry or the axis of symmetry.

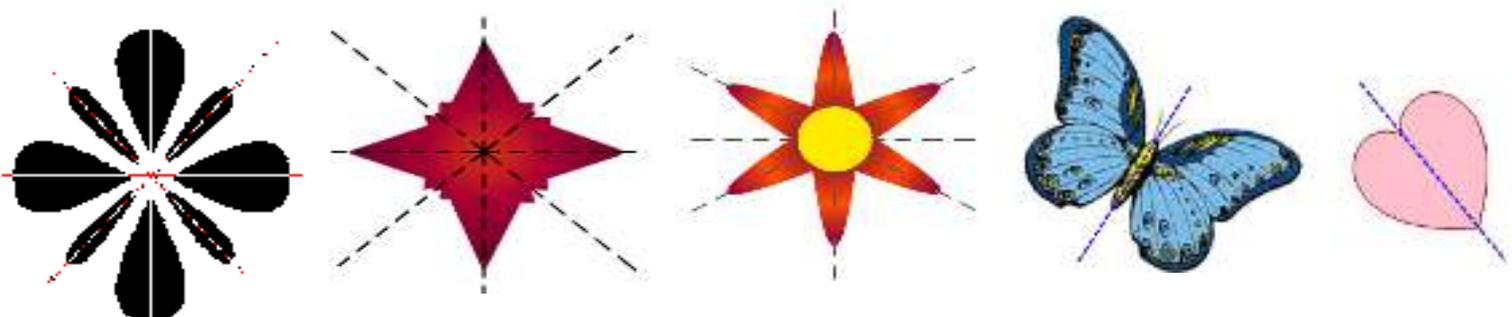
It can be horizontal, vertical or slant.

### Axis of Symmetry

The line of symmetry is a straight line which is either Horizontal, vertical or slant. There can be more than One line of symmetry for a plane figure. The triangle has 3 axes of symmetry. A circle has many line of symmetry. The line of symmetry divides the plane figure in to two identical parts. The idea of symmetrical figures is used in origami, which is the art of paper folding and drawing symmetric designs on fabrics, greeting cards, decorative objects etc.



### Different designs with the line of symmetry



## Alphabets with the line symmetry



## 6.Clock and Calendar: Time is the ongoing sequence of events taking place.We

measure time using seconds, minutes, hours, days, weeks, months and years.

Clocks measure time.

To read a clock :



- ✓ Look at the numbers on the perimeter of the clock face. ...
- ✓ Locate the shorter hand, which tells you the hour. ...
- ✓ Find the longer hand, which will point to the minutes. ...
- ✓ Use the longer hand to find individual minutes between numbers. ...
- ✓ Read the time. ...

12 hours and 24 hours clock notations:



- ✓ AM and PM are abbreviations that tell us whether the time occurs in the morning or in the afternoon/evening.
- ✓ AM occurs in the morning. It stands for ante meridiem which means "before midday". You can think of it as "before noon".
- ✓ PM occurs in the afternoon and evening. It stands for post meridiem which means "after midday". You can think of it as "after noon".
- ✓ In the AM/PM system of time, a 12-hour clock is used. That means that the morning goes up until 12:00 noon and it starts over again with 01:00 and goes through 12:00 midnight.

- ✓ In contrast, a 24-hour clock does not start over after 12:00 noon. The next hour (which we normally think of as 1:00 PM) is 13:00, then 14:00 etc. Time goes all the way up until 24:00 midnight which can also be called 00:00 because it is the start of the next day.

## Calendar

There are many ways of measuring time in months, week or days and that is called calendar.

One calendar has 12 months, 52 weeks, 365 days. The leap year has 366 Days in a year. We read the calendar to tell the days and dates. The month Of January, March, May, July, August, October, and December have 31 Days each. The months of April, June, September and November have 30 Days each. Further seven days of the week are Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday.



### The Birth of Calendar-

What is a month? Why do we have twelve months in a year? And why doesn't each month have the same number of days? The word month comes from the old English word 'Monath' and 'Monath' comes from Mona which means moon. So, a month is a moon.

Long ago a month really was a moon. That is, a monath was the time from one new moon to the next. But twelve such moons add up to only about 354 days which is the time it takes the earth to go around the sun.

To make the months the same number of days as the sun-year, we have months of different lengths. It regularly adds up to 365 days and a leap year comes to 366 days. In this way, the months keep time with the seasons.

### Problem solving based on the calendar-

- The 1<sup>st</sup> term holidays for school started from the 13<sup>th</sup> of October and students were told that the school reopens on the 25<sup>th</sup> of October. How many days did they get as holidays?

**Leap Year-** If the year can be divided by 4, then it is a leap year. In a leap year, February has 29 days.

Find whether the given year are leap or not: 1956, 1947, 1980, 1992, 1998, 1990, 1960, 2000.

## 7. Pictorial presentation of Data: Representing the information in a table, lists or by

means of pictorial form is the smart chart.

Types of Charts:-

1. **Tally Marks** -Tally marks are represented as numbers in groups of five. One vertical line is made for each of the first four numbers; the fifth number is represented by a diagonal line across the four lines.

2. **Pictograph** : Pictorial representation of statistics on a chart, graph or table is pictograph. It is a way of showing data using images.Each image stands for a certain number of things.

3. **Bar Graphs** :A bar graph contains a bar for each category of a set of qualitative data. The bars are arranged in a manner so that the tallest bar represents the highest value.



4. **Pie Chart** : A pie chart displays data in the form of a circular plate also called pie.

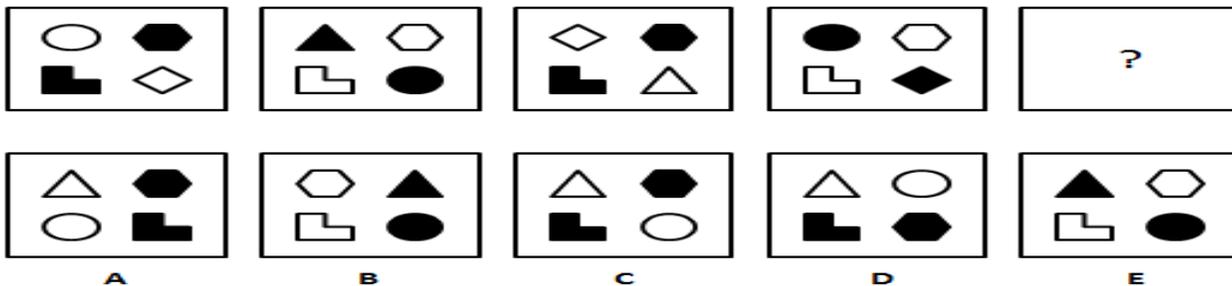
8. Series & Patterns: -Things that are arranged systematically and follow a rule are said to be in pattern. Number patterns are numbers ordered in a manner following some rules.

- ✓ Look at the last one or two digits or the first digit to see any special manner.
- ✓ Think about common number patterns, like counting by 2s, 5s, or 10s.
- ✓ Find the difference between the numbers.

Rules of patterns

A pattern can be a shapes, numbers or words that is repeated according to the rule. It can be of different types.

Repetition of shapes with shades



Here in the given picture option C is the correct answer

Series-

This type of questions can include various types of series and patterns formation- choosing series, odd one out , matching pairs etc.

Example: Find the next letter in the series

Z Y W T P K?

Answer: C

Explanation: The answer is E, because the pattern is to count backwards from the first given letter: first one, then two, then four, and lastly six.

Example: Find the odd one out.

1) EHG      2) JML      3) UYX      4) TWV

Answer: 3

Explanation- In all other groups there is a gap of one letter as in the alphabet between first and third letter.

## 9. Coding and Decoding-

A CODE is a system of signals. Therefore, coding is a method of transmitting a message between the sender and the receiver without a third person knowing it. Decoding is a process to understand a code language.

Types of coding

- a) Letter coding- In this type of questions, the real alphabets in a word are replaced by certain other alphabets according to a specific rule to form its code. We are required to detect the common rule and answer the question accordingly.

Example: In a certain code, DOWN is written as FQYP. How is WITH written in that code?

1) KYJN    2) IJYK    3) YKVJ    4) JKVY

Answer: 3

- b) Number Coding- In this type of questions, either numerical code values are assigned to word or alphabetical code letters are assigned to the numbers. We are required to analyse the code as per the given instructions.

Example: In a certain code, RIPPLE is written as 613382 and LIFE is written as 8192. How is PILLER written in that code?

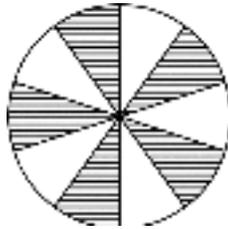
1) 318826    2) 318286    3) 618826    4) 338816

Answer: 1

## Sample Questions(Maths)

1. 99,999 is the greatest ----- digit number.  
A. 5    B. 4    C. 3    D. 2
2. Place value of 5 in 5, 43,621 is -----.  
A. Lakh    B. Thousand    C. Ones    D. Tens
3. Priyanka read a 252 pages book in a week. She read same number of pages each day.  
How many pages did she read each day?  
A. 42    B. 32    C. 34    D. 36
4. Shiva draws the table shown here. Which number sentence best represents his arrangement of rows and columns in a table.


- A.  $4 + 5 = 9$     B.  $4 \times 5 = 20$     C.  $4 \times 4 = 16$     D.  $20 - 4 = 16$
5. What fraction of the figure is shaded?



- A.  $\frac{5}{10}$     B.  $\frac{6}{10}$     C.  $\frac{10}{10}$     D.  $\frac{5}{5}$
6. What fraction of letters on the word EDUCATION are vowels?  
A.  $\frac{4}{10}$     B.  $\frac{4}{9}$     C.  $\frac{5}{9}$     D.  $\frac{2}{9}$
  7. Roman numbers don't have symbols for -----.  
A. Zero    B. One    C. Two    D. Three
  8. Addition is only applicable in Roman numbers when the first symbol is ----- than the second, third etc.  
A. Greater    B. Smaller    C. Equal    D. Greater than equal to
  9. Which of the following has no line of symmetry?



10. If  $\nabla + \nabla + \bigcirc = 120$  and  $\bigcirc + \bigcirc = 100$  then  $\bigcirc - \nabla = ?$

- A. 15                      B. 110                      C. 45                      D. 65

11. Where will be the minute hand point just one hour after quarter past three in a clock?

- A. 9                      B. 12                      C. 3                      D. None of these

12. How many weeks are there in 1 year?

- A. 55                      B. 53                      C. 25                      D. 52

13. Which of the following is a prime number?

- A. 21                      B. 33                      C. 49                      D. 53

14. Identify the one which is different from the others.

- A. Book                      B. Maths                      C. Pencil                      D. Paper

15. Find the odd one out.

- A. 3445                      B. 4556                      C. 7889                      D. 5567

Answer Key

Q.No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Right Option	A	A	D	B	A	C	A	A	B	A	C	D	D	B	D

## English

### 1. ARTICLES

❖ An article is a word used with a noun to indicate the type of reference being made by the noun. Articles defines a noun as specific or unspecific.

- **Examples:** (a) I have a book with me.

(b) She is eating an ice cream.

(c) The dress you gave me is really pretty.

(Here 'a', 'an', 'the' are articles.)

## ➤ Types of Articles

There are two types of article:

1. **Indefinite Articles:** "A" and "An " are indefinite articles which are used with singular nouns.

**Examples:**(a) That is a glass. (b) There is an insect under the table.

2. **Definite Article** :“the” is the definite article as it points to a particular object or class . It is used with both singular and plural nouns. It can also be used with countable nouns ( like the pencils, the table etc.) as well as with uncountable nouns ( like the milk, the courage, the passion etc.).

## 2. VERBS

❖ A verb is word or a group of words that tell us about the action or the state of action of the noun or subject of the sentence.

- **Examples:** He ran to the store. Here, the verb “ran” describes the action performed by the subject “he”.

❖ Verbs show what the subject is doing or what the condition of the subject is.

- **Examples:** (a) She is beautiful. (state)
- (b) The cat killed the mouse. (action)
- (c) The tyre burst in the workshop. (event)

## 3. TENSES

❖ Tenses of a verb show the time of an event or action in a sentence. There are three main tenses: Present, Past and Future. These three main tenses can be further divided into four forms each: Simple, Continuous, Perfect and Perfect Continuous Tense.

❖ These tenses can be better explained with the help of examples as given in the following table:

<u>Simple Present</u>	<u>Simple Past</u>	<u>Simple Future</u>
Cats like milk. He drinks milk.	He washed all his clothes yesterday. We lived in Chennai.	She will not sing today. He will go to the market.

<u>Present Continuous</u>	<u>Past Continuous</u>	<u>Future Continuous</u>
You are dancing.	Gunjan was sleeping.	We will be watching TV.
They are going to the market.	Rishi was playing.	Kids will be playing.

<u>Present Perfect</u>	<u>Past Perfect</u>	<u>Future Perfect</u>
I have not seen him.	Ronnie had locked the door.	Mother will have cooked the food.
He has gone to the park.	She had done her work.	She will have done her work.

<u>Tense</u>	<u>Indefinite</u>	<u>Continuous</u>	<u>Perfect</u>	<u>Perfect Continuous</u>
<b>Present</b>	write/writes	am/is/are writing	has/have written	has/have been writing
<b>Past</b>	wrote	was/were writing	had written	had been writing
<b>Future</b>	shall/will write	shall/will be writing	shall/will have written	shall/will have been writing

## 4. Active and Passive Construction

❖ **There are two voices: (i) Active voice (ii) Passive voice**

**a. When the subject of a verb acts or is active, it is said to be in the active voice.**

**Examples:**

(a) You write a letter.

(b) Rama killed Ravana.

(c) Someone picked my pocket.

(d) Sanjay has broken my slate.

**b. When subject of a verb is acted upon, it is said to be in the passive voice.**

**Examples:**

(a) A letter is written by you.

(b) Ravana was killed by Rama.

(c) My pocket was picked.

(d) My slate has been broken by Sonia.

**Note> Only transitive verbs can be changed into passive voice.**

## The General rules for Change of Voice:

- (a) The object of the active verb is made the subject of the passive verb.
- (b) The subject of the active verb is made the object of some preposition (generally by)
- (c) The passive voice must contain the past participle (third form) of the principal verb.
- (d) Some form of the verb "to be" (is, am, are, was, were, being or been) is used according to the tense.

### Illustrated examples:

#### 1. Simple Present Tense (Is/am/are + third form of verb)

Active Voice	Passive Voice
(a) The cow eats grass.	Grass is eaten by the cow.
(b) They run a race	A race is run by them.

#### 2. Simple Past Tense (was/were + third form of the verb)

Active Voice	Passive Voice
(a) We crossed the river easily.	The river was easily crossed by us.
(b) She spoke the truth.	The truth was spoken by her.

## 5. Direct and Indirect narration.

- ❖ The dictionary meaning of the verb "narrate" is "to give an account of something." Thus, narration means giving an account.
- ❖ When the actual words of the speaker are reproduced, it is called DIRECT NARRATION.
- ❖ When the conversation is repeated without using the speaker's actual words though the meaning is unchanged, it is called INDIRECT NARRATION.

### 1. Simple Present into Simple Past

Direct : He said, "Sita sings very well."

Indirect : He said that Sita sang very well.

### 2. Simple Past tense into Past Perfect

Direct : He said, "Ram gave me a pen."

Indirect :He said that Ram had given him a pen.

## 6. Vocabulary

- Vocabulary, in general, refers to all the words used in a language.
- A person's vocabulary refers to the set of words within a language that he/she is familiar with.
- Vocabulary can be described as oral vocabulary or reading vocabulary.
- Oral vocabulary refers to the words , we use in speaking or recognize in listening and reading.
- Reading vocabulary refers to the words we recognize in print.
- The Vocabulary portion contains exercises in correct use of words, spellings, analogy and jumbled words.

## 7. Jumbled Words and Jumbled Sentences

❖ To jumble means mixing things in a confusing manner. The jumbled words exercise comprises changing the order of the letters of a word and it tests a child's vocabulary. The jumbled sentences exercise teach the child sentence formation.

- **EXAMPLES:** (Jumbled words) **ONMYEK----- MONKEY**

(Jumbled sentences)**milk/gives/milkman/us-----Milkman gives us milk.**

## 8. SYNONYMS and ANTONYMS

(a) awkward	rough, clumsy
(b) blemish	fault, stigma
(c ) contempt	disregard, scorn
(d) judicious	thoughtful, prudent

An antonym is a word which means opposite of the given word. Eg "stop' has its antonym as "go'

<u>Words</u>	<u>Antonyms</u>
(a) Aversion	affection, fondness
(b) Blemish	purity, spotless
(c) Deliberate	rash, sudden
(d) Lavish	conserve, frugal

## 9. Idioms and Phrases:

Many verbs, when followed by various prepositions , or adverbs , acquire an idiomatic sense; as,

1. **Hand in:** submit something
2. **Handout:** something free
3. **Out of hand:** not in control
4. **Second hand:** owned by someone else before
5. **Give a hand:** help out
6. **Hand to hand :** close fight
7. **Of and on :**at intervals  
I go to meet the children at an orphanage of and on.
8. **Bag and baggage:** with all goods  
He left Agra with bag and baggage.
9. **Hither and thither:** here and there  
Do not go hither and thither. Just sit at one place and finish your breakfast.
10. **Bread and butter:** material welfare  
We all work for bread and butter.



### Common Idioms

1. A Blessing In Disguise:  
Something good that isn't recognized at first.
2. A Piece of Cake:  
A task that can be accomplished very easily.
3. A Leopard Can't Change His Spots:  
You cannot change who you are.
4. Add Fuel To The Fire:  
Whenever something is done to make a bad situation even worse than it is.
5. Against The Clock:  
Rushed and short on time.
6. All Bark And No Bite:  
When someone is threatening and/or aggressive but not willing to engage in a fight
7. All In The Same Boat:  
When everyone is facing the same challenges.
8. An Arm And A Leg:  
Very expensive. A large amount of money.
9. Apple of My Eye:  
Someone who is cherished above all others.
10. As High As A Kite:  
Anything that is high up in the sky.
11. A Taste Of Your Own Medicine:  
When you are mistreated the same way you mistreat others.



**12. A Slap on the Wrist:**

A very mild punishment.

**13. Beat A Dead Horse:**

To force an issue that has already ended.

**14. Beating Around The Bush:**

Avoiding the main topic. Not speaking directly about the

**15. Bend Over Backwards:**

Do whatever it takes to help. Willing to do anything.

**16. Between A Rock And A Hard Place:**

Stuck between two very bad options.

**17. Bite Off More Than You Can Chew:**

To take on a task that is way to big.

**18. Bite Your Tongue:**

To avoid talking.

**19. Blood Is Thicker Than Water:**

The family bond is closer than anything else.

**20. Blue Moon:**

A rare event or occurrence.

**21. Cock and Bull Story:**

An unbelievable tale.

**22. Cross Your Fingers:**

To hope that something happens the way you want it to

**23. Cry Over Spilt Milk:**

When you complain about a loss from the past.

**24. Cry Wolf:**

Intentionally raise a false alarm.

**25. Curiosity Killed The Cat:**

Being Inquisitive can lead you into a dangerous situation.

**26. Devil's Advocate:**

Someone who takes a position for the sake of argument without believing in that particular side of the argument. It can also mean one who presents a counter argument for a position they do believe in, to another debater.

**27. Don't count your chickens before they hatch:**

Don't rely on it until your sure of it.

**28. Drastic Times Call For Drastic Measures:**

When you are extremely desperate you need to take extremely desperate actions.

**29. Drink like a fish:**

To drink very heavily.

**30. Cock and Bull Story:**

An unbelievable tale.



## 10. Homophones:

In linguistics, a homonym is one of a group of words that share the same spelling and the same pronunciation but have different meanings. This usually happens as a result of the two words having different origins. The state of being a homonym is called homonymy.

A homophone is a word that is pronounced the same as another word but differs in meaning. The words may be spelled the same, such as rose (flower) and rose (past tense of "rise"), or differently, such as carat, caret, and carrot, or to, two and too.

All homonyms are homophones because they sound the same. However, not all homophones are homonyms. Homophones with different spellings are not homonyms.

Some common examples of homophones, including the words used in a sentence, are:

- **brake/break:** When teaching my daughter how to drive, I told her if she didn't hit the *brake* in time she would *break* the car's side mirror.
- **cell/sell:** If you *sell* drugs, you will get arrested and end up in a prison *cell*.
- **cent/scent:** I won't spend one *cent* on a bottle of perfume until I know that I love the *scent*.
- **die/dye:** If you accidentally drank a bottle of fabric *dye*, you might *die*.
- **flour/flower:** To bake a *flower*-shaped cake, you'll need some *flour*.
- **for/four:** I purchased *four* new pairs of shoes *for* my upcoming vacation.
- **heal/heel:** If the *heel* breaks on your shoe, you might fall. However, your injuries will *heal* over time.
- **hear/here:** I wanted to sit *here* so I could *hear* the singer performing without any distractions.
- **hour/our:** We have one *hour* before *our* appointment with the real estate agent.
- **idle/idol:** Being *idle* makes me unhappy, but listening to my *idol* Taylor Swift makes me happy.
- **knight/night:** The *knight* is on his way to the castle, but traveling at *night* is very dangerous.
- **knot/not:** I do *not* know how she learned to tie the *knot* to make that necklace.
- **poor/pour:** I *pour* drinks at a bar every night. I am *poor* because I have too many bills and not enough money.
- **right/write:** There is no *right* way to write a great novel.
- **sea/see:** At my beach house, I love to wake up and see the sea.

- **sole/soul:** I need to get a new sole put on my favorite pair of running shoes. Jogging is good for my soul.
- **son/sun:** My son is 13 years old. He likes to spend time outside in the sun.
- **steal/steel:** Someone who decides to steal a car has committed a crime, but auto parts are made of steel.
- **tail/tale:** My cat was crazily chasing his tail while I read a fairy tale to my children.
- **weather/whether:** I don't know whether to bring a jacket or not. The weather looks unpredictable today.
- **accept/except:** Accept is a [verb](#) that means to take or receive. Except is used as a [preposition](#) or [conjunction](#) to mean but or exclude.
- **affect/effect:** Affect is a verb (in most cases) and indicates influence. Effect is a [noun](#) (in most cases) and is the result of an action or change.
- **compliment/complement:** Compliment means to say something nice about someone or something. Complement means something that enhances or completes.
- **then/than:** Then is a versatile word used as an [adverb](#), noun or [adjective](#) to show the order of how things happened. Than is a [subordinating conjunction](#) you can use to make comparisons.
- **to/too:** To can be a preposition or infinitive when used with a verb. Too is an adverb or a synonym for also.

**you're/your:** You're is a contraction for you are. Your is a pronoun.

### **SAMPLE QUESTIONS**

**A. Fill in the blanks with suitable article from the options given below.(Q 1,2)**

Q1. -----Tower of London is -----popular tourist place. **(Ans. a)**

- (a) The/a                      (b) an/the                      (c) A/an                      (d) The/the

Q2. Where is----- video game I gave you yesterday? **( Ans. c)**

- (a) an                      (b) a                      (c) the                      (d) no article

**B.Fill in the blanks with the most suitable option.**

Q3. They regularly----- cricket in the evening. **(Ans. b)**

- (a)played                      (b) play                      ( c) playing                      (d) will play

**C.Fill in the blanks with the suitable passive verb forms from the options given below.**

Q4 English ----- all over the world.                      **(Ans. c)**

- (a) is speak    (b) is                      (c) is spoken(d) None of these

**D. Fill in the blanks by choosing the correctly spelt word from the options given below.**

Q5. The -----is very pleasant.                      **(Ans. c)**

- (a)whether                      (b)weather                      (c) weather                      (d)wether

Ans. Then he or she decides what kind of treatment is needed.

**E. Choose the odd one out.**

Q6. (a) gloves                      (b)socks                      (c) stockings                      (d) raincoat    **(Ans. d)**

Q7. (a) harmonium    (b) guitar                      (c) flute                      (d) piano    **(Ans. c)**

**F. Correct the sentence by choosing the correct option for the underlined word/phrase. (Q8, 9, 10)**

Q8. They are waiting for her since morning.                      **(Ans.a)**

- (a) have been waiting                      (b) were waiting                      (c)wait                      (d) is waiting

Q9. No sooner had he entered the police station when the SHO began to beat him.**(Ans.a)**

- (a) than                      (b) before                      (c) since                      (d) if

Q10. The greater the demand, higher the price.                      **(Ans.c)**

- (a) high                      (b) the high                      (c) the higher                      (d) highest

**G.Find the suitable synonym for the underlined word in the sentence from the given options.**

Q11. i. It is very difficult to understand a foreign language.                      **( Ans. b)**

- (a)simple                      (b) challenging                      (c) tricky                      (d) easy

**H. The parts of each sentence have been jumbled and marked as P,Q,R,S. Rearrange the parts to form a correct sentence and select the option accordingly. (Q 12, 13)**

Q12. everyone (P)/follow (Q)/should(R)/traffic rules(S)                      **( Ans.. b)**

- (a) P R S Q                      (b)P R Q S                      (c) R P S Q                      (d) None of these

Q13. want me ( P)/ at the airport (Q)/ do you (R) /to see you off (S)                      **(Ans.b)**

- (a) Q P R S                      (b) R P S Q                      (c) Q R P S                      (d) R S Q P

I. In the questions given below, select the option which is punctuated accurately. (Q 14, 15)

Q14( a) She didn't hear childrens cries.

(Ans. b)

(b) She didn't hear children's cries.

(c) She didn't hear children cries.

(d)She didn't hear childrens cries.

Q15. (a) The dogs bark was far worse than it's bite.

(Ans. c)

(b)The dog's bark was far worse than it's bite.

(c)The dog's bark was far worse than its bite.

(d) The dogs bark was far worse than it's bite.

J. Choose the alternative which best expresses the meaning of the given idiom / phrase.

16. **To put two and two together**

(d) to bear the brunt of

(e) to conclude from obvious fact

(f) to put off

(g) to put on a false appearance

Ans : b

17. **To read between the lines**

(a) to suspect

(b) to read carefully

(c) to understand the hidden meaning of the word

(d) to do useless things

Ans: c

18. **To leave no stone unturned**

(a) to keep clean and tidy

(b) to try utmost

(c) to work enthusiastically

(d) to change the things

Ans : b

19. **Through thick and thin**

(a) big and small

(b) large object

(c) under all conditions

(d) thin and fat

Ans : c

20. **To be born with a silver spoon in one's mouth**

(a) to be born in a rich home

(b) to be born in jeweller's home

(c) to be a first born child

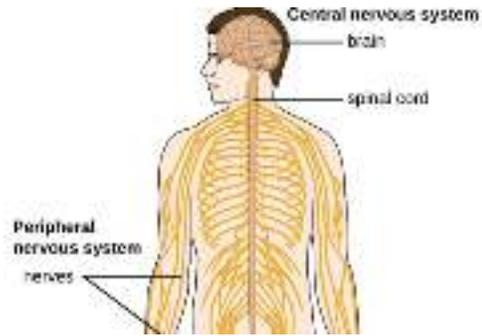
(d) to be fed milk with a silver spoon

Ans : a

# EVS and GK

**ORGAN SYSTEM & SENSE ORGANS:** Our body is a living machine. It is made of various parts or organs which carry out a particular function. A group of organs which perform a definite task is an organ system. The major organ systems are as follows:

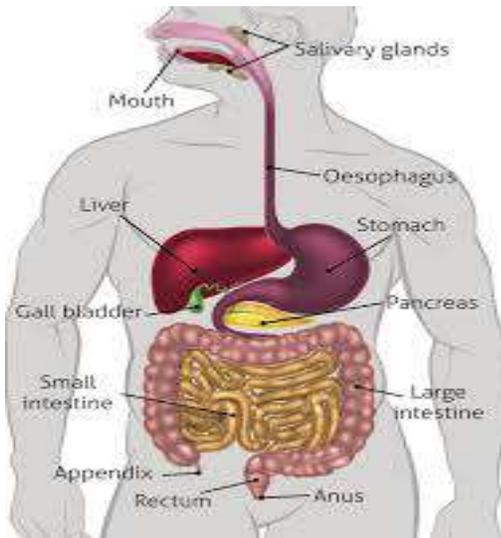
**A. The Nervous System:** It consists of Brain, Spinal Cord & Nerves. It controls all functions of our body.



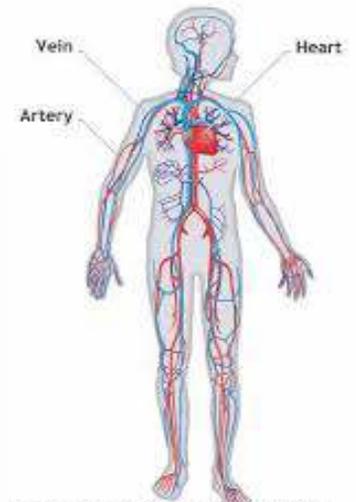
**B. The Skeletal System:** It consists of bones. It protects soft organs of our body & gives shape to our body & help us to move.



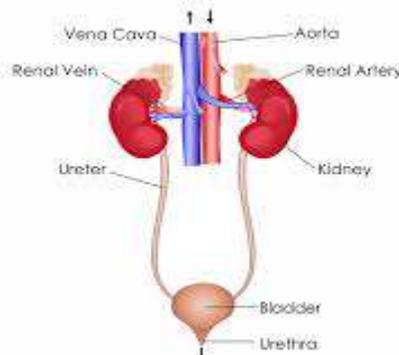
**C. The Digestive system:** It consists of mouth, foodpipe, stomach, small intestine, large intestine, liver, pancreas. It helps in digestion of food so as to get energy from food.



**D. The Circulatory system:** It consists of central pumping organ Heart, Arteries and Veins. It acts as transporting system in our body carrying nutrients, respiratory gases, wastes for their removal etc.



**E. The Excretory System:** it consists of kidneys, ureter, urinary bladder to remove nitrogenous wastes out of the body.



**SENSE ORGANS:** These organs inform us regarding our surroundings. Eyes provide sensation of sight, nose of smell, ears to hear, tongue of taste & skin of touch.

**AIR & WATER :** Air is a natural resource. An envelope of air surrounding earth is atmosphere.

**1. TROPOSPHERE:** First layer closest to earth. It consists of gases which we breathe in.

**2. STRATOSPHERE:** Second layer containing ozone which protects us from harmful UV rays of the sun.

**3. MESOSPHERE:** Meteoroids burn in this layer so do not reach earth.

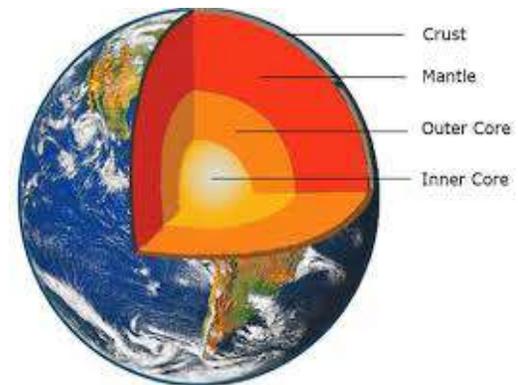
**3. THERMOSPHERE:** Space shuttles orbit in this layer.

**4. EXOSPHERE:** From here atmosphere merges into the outer space.



It exists in three states, ice(solid), water(liquid) & water vapour(gaseous). Water changes to its vapour state on heating, a process called evaporation. Water vapour changes to water on cooling, a process called condensation. Because of these processes water cycle exists in nature.

**EARTH:** Our earth is made of living & non living things. Eg: land, air, water, plants, and animals all dependant on each other. There are three layers of earth. Crust, Mantle, Core. The deeper we move inside the hotter it becomes. Inner core remains solid due to immense pressure exerted by upper layers. Crust forms the surface on which we live, made of hard rocks. The Earth is moving constantly. Rotation refers to spinning of Earth on its own axis. It causes day & night. The movement of Earth around the sun is called Revolution which along with earth's tilt cause seasons. The period of rotation is 24 hours & revolution is 1yr & 6Hrs.



**Beyond Earth:** A **dwarf planet** is a small round body which orbits the sun. At the time of its formation it could not pull in all other objects near its orbit. So it is not considered planet: Pluto, Eris etc. A heavenly object which revolves round a planet is called **satellite**. It is

of two types: **Natural & Artificial Satellite**. A rocket takes an artificial satellite in space which is later put into orbit. Artificial satellites are used in communication, navigation, weather predictions, observing earth etc. Now a days space shuttles are used to launch satellites and recover damaged satellites, return them to



Earth. Aryabhata, IRS-1B, INSAT-2A, Apple, Rohini are a few Indian satellites. Moon is earth's natural satellite. The moon

does not have its own light, it reflects sun's light. When Moon passes between Sun & Earth, sunlight falls on the part turned away from us so moon is not visible. It happens on new moon night. Every night illuminated part grows in size till we see full moon fortnightly. The shapes of sunlit half of different parts of the moon are called **phases of moon**.

A group of stars which seem to form a pattern is called constellation. E.g., Orion, Scorpius, Great Bear etc. A galaxy is a group of stars and other celestial bodies bound together by gravitational force. E.g., Milky way. Ancient Romans called it "Via Galactica" or 'road of milk'.

**Nutrition:** Obtaining, absorbing & utilising food for various body functions as growth, development, maintenance of living things is nutrition. Nutrients refer to type of food which meets body's requirements. It includes: i. **Energy Foods:** Food rich in **carbohydrates & fats** .E.g., cereals, sugar, butter etc.

ii. **Body Building Foods:** They are **protein** rich foods. Useful for body growth, repair, bones & teeth., E.g., pulses, milk, fish, meat etc.

iii. **Protective Foods:** They are rich in **vitamins & minerals**. E.g., fruits, vegetables, milk. They are required in small quantities by the body.



**Balanced diet:** The diet that contains all kinds of nutritions in right amount for an individual is known as balanced diet.

**Living ,Nonliving & animals around us:**

**LIVING THINGS**

**NON LIVING THINGS**

<ol style="list-style-type: none"> <li>1. All living things are made of cells.</li> <li>2. Need food to get energy.</li> <li>3. Excrete i.e., throw out waste from the body.E.g. Earthworms give out waste which makes soil fertile.</li> <li>4. Respond to stimuli i.e., changes occurring around us are stimuli &amp; reaction to them are response.E.g., we withdraw our hand when we touch something hot. Heat is stimulus &amp; withdrawing is response.</li> <li>5. Reproduce their own kind.</li> <li>6. Show growth.i.e. Seed grows to seedling when conditions are favourable like optimum temperature, moisture etc. It is called germination.</li> <li>7. Show movement &amp; locomotion.</li> <li>8. Breathe.</li> </ol>	<ol style="list-style-type: none"> <li>1.Non living things do not have cells</li> <li>2. Do not need food.</li> <li>3. Do not excrete.</li> <li>4. Do not respond to stimuli.</li> <li>5. Do not reproduce.</li> <li>6. Do not grow.</li> <li>7. Do &amp; not show movement &amp; locomotion.</li> <li>8. Do not breathe.</li> </ol>
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But there are some tiny organisms which show both living & non living characters depending on conditions available. Viruses are between living & non living. They need a cell (tiny parts of which living beings are made of) to carry their life processes as growth, response etc.

## Abbreviations and Acronyms.

<u>Sl.</u>	<u>Short form</u>	<u>Full form</u>
1.	<b>AICTE</b>	All India Council Of Technical Education.
2.	<b>ASEAN</b>	Association Of South East Asian Nations.
3.	<b>BARC</b>	Bhabha Atomic Research Centre.
4.	<b>BHEL</b>	Bharat Heavy Electricals Ltd.
5.	<b>BIMSTEC</b>	Bangladesh, India, Myanmar, Srilanka, Thailand Economic Cooperation
6.	<b>CAG</b>	Comptroller and Auditor General Of India.
7.	<b>CBDT</b>	Central Board Of Direct Taxes.
8.	<b>DNA</b>	Deoxyribo-nucliec Acid
9.	<b>DTP</b>	Desktop Publishing
10.	<b>FIR</b>	First Information Report
11.	<b>GATE</b>	Graduate Aptitude Test in Engineering
12.	<b>GSLV</b>	Geo-Synchronous Satellite Launch Vehicle
13.	<b>GSM</b>	Global System for Mobile Communications
14.	<b>IPC</b>	Indian Penal Code
15.	<b>LASER</b>	Light Amplification by Stimulated Emmission of Radiation
16.	<b>NABARD</b>	National Bank for Agriculture and Rural Development.
17.	<b>NATO</b>	North Atlantic Treaty Organization.
18.	<b>ONGC</b>	Oil and Natural Gas Corporation.
19.	<b>SEBI</b>	Securities and Exchange Board of India.
20.	<b>WWW</b>	World Wide Web

## Books and Authors

<u>Sl.</u>	<u>Book</u>	<u>Author</u>
1.	<b>Akbarnama</b>	AbulFazal
2.	<b>Chitra</b>	RabindraNath Tagore
3.	<b>Gitanjali</b>	RabindraNath Tagore
4.	<b>Godan</b>	Prem Chand
5.	<b>Guide</b>	R K Narayan

6.	<b>Hamlet</b>	William Shakespeare
7.	<b>Harvest</b>	ManjulaPadmanabhan
8.	<b>Jungle Book</b>	Rudyard Kipling
9.	<b>Saket</b>	Maithili Sharan Gupta
10.	<b>The Dairy of a Young Girl</b>	Anne Frank

### Important dates and days

<u>Sl.</u>	<u>Days</u>	<u>Event</u>
1.	<b>January 30</b>	Martyr's Day
2.	<b>March 22</b>	World Day for Water
3.	<b>April 7</b>	World Health Day
4.	<b>April 22</b>	Earth Day
5.	<b>July 11</b>	World Population Day
6.	<b>August 29</b>	National Sports Day
7.	<b>September 15</b>	Engineer's Day
8.	<b>September 27</b>	World Tourism Day
9.	<b>October 9</b>	World Post Day
10	<b>October 16</b>	World Food Day

### Important awards and honors.

<u>Sl.</u>	<u>Awards</u>	<u>Concerned Field</u>
1.	<b>BhartaiyaJnanpith Award</b>	<b>Literary Award for Indian Languages</b>
2.	<b>SahityaAkademi Award</b>	<b>Outstanding Literary Contribution</b>
3.	<b>SaraswatiSamman</b>	<b>Outstanding Literary Contribution</b>
4.	<b>Kalinga Prize</b>	<b>Popularising Science</b>
5.	<b>Dada SahebPhalke Award</b>	<b>Film</b>
6.	<b>TulsiSamman</b>	<b>Traditional and folk arts.</b>
7.	<b>Arjuna Award</b>	<b>Sports</b>
8.	<b>Dronacharya Award</b>	<b>Coaches to different games</b>
9.	<b>Booker Prize</b>	<b>Novels in English</b>
10	<b>Roman Magsaysay Award</b>	<b>Outstanding Contribution to Public Services.</b>

## Scientific Instruments and Uses

<u>Sl.</u>	<u>Instruments</u>	<u>Uses</u>
1.	<b>Altimeter</b>	In aircraft to measure altitude.
2.	<b>Ammeter</b>	Electric current.
3.	<b>Audiometer</b>	Intensity of sound
4.	<b>Barometer</b>	Atmospheric pressure
5.	<b>Cardiogram</b>	Tracing movement of heart
6.	<b>Dynamo</b>	Mechanical energy to electrical energy
7.	<b>Galvanometer</b>	Small current
8.	<b>Hydrometer</b>	Specific gravity of liquids
9.	<b>Lactometer</b>	Purity of milk
10	<b>Odometer</b>	Electric or mechanical vibrations
11.	<b>Rain gauge</b>	Rainfall at a place
12.	<b>Stethoscope</b>	Movements and condition of heart and lungs.
13.	<b>Telescope</b>	To view distant objects.
14	<b>Transformer</b>	High voltage to low voltage and vice-versa.
15.	<b>Xylophone</b>	Musical instruments with tuned wooden bars of different dimensions.

### **SAMPLE QUESTIONS**

Q1: The tube between the kidney and urinary bladder is:

- a) Renal vein      b) Urethra      c) Ureter      d) Urea      Ans: c

Q2: Plants grow towards the direction of sunlight. Here the stimulus is:

- a) Roots      b) Sunlight      c) Plant      d) All of these

Ans: b

Q3: True or false: Proteins are needed for tissue growth and repair.

- a) False      b) May be true      c) True      d) Not sure      Ans - c

4. Which Day is celebrated as World Health Day?

- A. 30 January      B. 1 April  
C. 7 August      D. 7 April      Ans: d

5. Which of the following award is given for contribution in public services?

- A. Kalinga Prize      B. Lata Mangeskar Prize  
B. Booker Prize      D. Roman Magsaysay Award      Ans: d

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