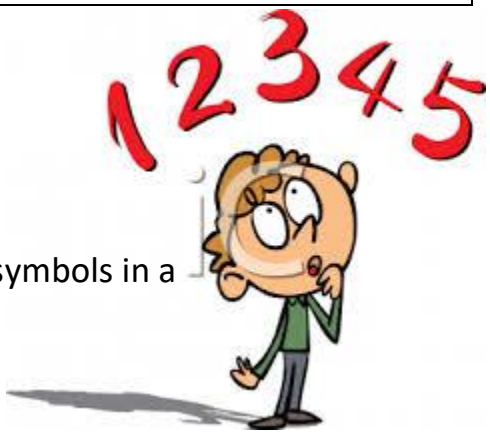
Competency Development Test (CDT) – Content

Class – IV

Mathematics



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. So, it is the smallest prime.

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

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.

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.

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

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.

We follow two types of number systems:-

1. Indian Numeral System
2. International Numeral System

As per the chart given below, the corresponding international number places can be matched.

10 Lakhs = 1 Million
1 Crore = 10 Million

Indian Number System:-

Numbers	Crores	Ten Lakhs	Lakhs	Ten Thousands	Thousands	Hundred	Tens	Ones
One								1
Ten							1	0
1 Hundred						1	0	0
1 Thousand					1	0	0	0
10 Thousand				1	0	0	0	0
1 Lakh			1	0	0	0	0	0
10 Lakh		1	0	0	0	0	0	0
1 Crore	1	0	0	0	0	0	0	0

International Number System:-

Numbers	Ten Millions	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
One								1
Ten							1	0
1 Hundred						1	0	0
1 Thousand					1	0	0	0
10 Thousand				1	0	0	0	0
100 thousand			1	0	0	0	0	0
1 million		1	0	0	0	0	0	0
10 Million	1	0	0	0	0	0	0	0

Sample Questions-

1. Write the numeral of- Seventy million four hundred and eight.

a) 7048
b) 700000408
c) 7000480
d) 70000408

2. If in the number 2,39,987; 3 is replaced by 8 and the hundred place is replaced by 1, then what number is formed? Also give its number name.

a) 2,81,137- Two lakh eighty-one thousand one hundred seven
b) 2,89,187- Two lakh eighty-nine thousand one hundred eighty-seven
c) 2,39,897- Two lakh thirty-nine thousand eight hundred ninety-seven
d) 2,98,278- Two lakh ninety-eight thousand two hundred seventy-eight

3. Which group of numbers are in descending order?
a) 672080, 827035, 931253, 981532
b) 235453, 231232, 236431, 228452
c) 952045, 672023, 502034, 432001
d) None of these

4. 890405 = 800000 + 90000 + 4000 + 5.Mark True/False
a) True
b) False

5. The product of place values of two 7's in 78071 is _____.
a) 490000
b) 5900000
c) 4900000
d) 49000000

ANSWER KEY

1-d	2-b	3-c	4-b	5-c

Computation Operation

Computation is the process to determine and calculate something through logical and mathematical methods. There are overall four operations that you will study, including Addition, Subtraction, Division and Multiplication.

(a) Addition

To perform Addition, it is important to add the digits in one place.
It is commutative, and the order does not matter in it.
Which means 3 + 2 = 2 + 3, so they both are the same.

The addition is further Associative. It means the order will remain in the same grouping.
For e.g.- 2+4+5 = 5+4+2

(b) Subtraction

In Subtraction, it is essential to take one number and the amount from the other number. A Subtraction can neither be associative nor be commutative.

Subtraction is not associative.

(1-2)-3 is not equal to 1-(2-3)

(c) Multiplication

In Multiplication, the number is added to itself a certain number of times. A Multiplication can be Distributive, Commutative, and Associative and has an identity property.

For, e.g. 5 x 2 = 2 + 2 + 2 + 2 + 2= 10

(d) Division

The division is the distribution over both the Subtraction and Addition.

For, e.g.

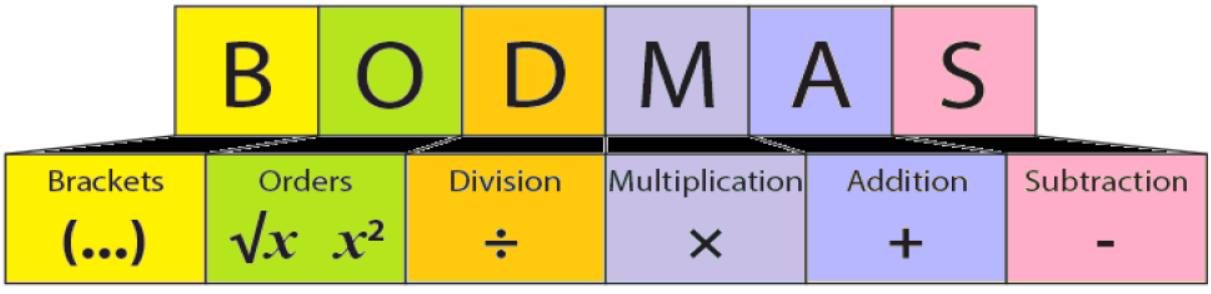
(6+9) / 3 = (6 / 3) + (9 / 3)

15/3 = 2+3

5 = 5

LHS = RHS (Hence, proved)

BODMAS Rule For Calculations- We solve a problem or a sum step by step. Similarly to carry out the mathematical operations we follow the BODMAS rule. According to BODMAS rule, the brackets have to be solved first followed by powers or roots (i.e. of), then Division, Multiplication, Addition, and at the end Subtraction.



Some examples of BODMAS problems :-

(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 must be done before addition)*

$= 24 + 9$

$= 33$

(c) $(17 - 2) \div 5 + 6$ *(brackets first)*

$= 15 \div 5 + 6$ *(division second)*

$= 3 + 6$ *(addition last)*

$= 9$

Sample Questions-

1. Which of the following is NOT true?

A. 12 x 89 = 89 x 12
B. 12 x 89 = 12 x (80+9)
C. 12 x 89 = (10+2) x 89
D. 12 x 89 = (12 x 8) + (12 x 9)

2. Smallest factor of a number is-

A. Number itself
B. 1
C. 0
D. 10

3.The number that can be divided by both5 and 7

A. 60
B. 35
C. 12
D. 53

4. Identify it.

- I am a 4-digit number.
- All my digits are different.
- They add upto 20.
- The hundred's digit is double the one's digit

A. 6734
B. 9236
C.2864
D. 2963

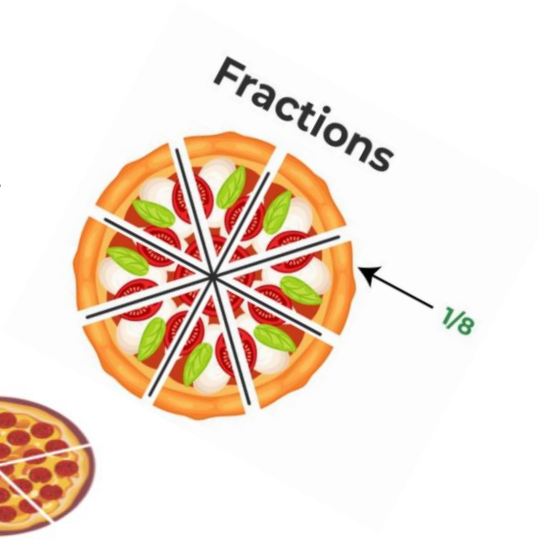
5.The sum of two numbers is 98963. If the greater number is 56489, then find the smaller number rounded off to the nearest thousands.

A. 42000
B.43000
C. 42400
D. 42500

ANSWER KEY-

12 x 89 = (12 x 8) + (12 x 9)	1	35	2864	42000

Fractions

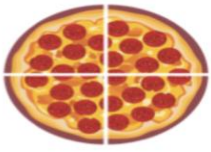


We often term like half, one-fourth and three-fourths.

Example: Fraction 4/5, 4 – Numerator and 5 – Denominator

- My father gave me half a plate of rice.
- I drink only three-fourths of a glass of milk.

3 equal slices
Each slice = $\frac{1}{3}$



4 equal slices
Each slice = $\frac{1}{4}$

5 equal slices
Each slice = $\frac{1}{5}$

6 equal slices
Each slice = $\frac{1}{6}$

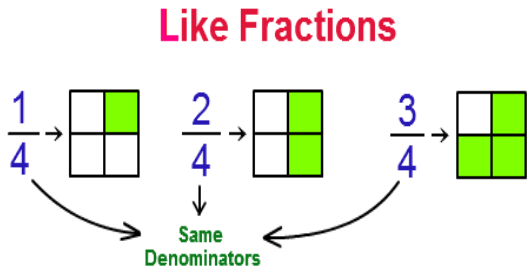
8 equal slices
Each slice = $\frac{1}{8}$

These terms show that they are parts of a whole.

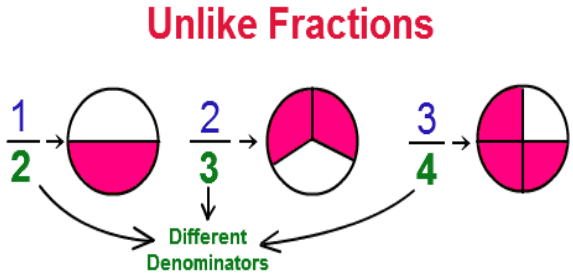
Fraction means ‘a part of the whole’. In a fraction, the number above the horizonal line is the numerator and the number below the line is the denominator, For example ¼, which can represent 1/4th part of the whole.

Types of Fractions:

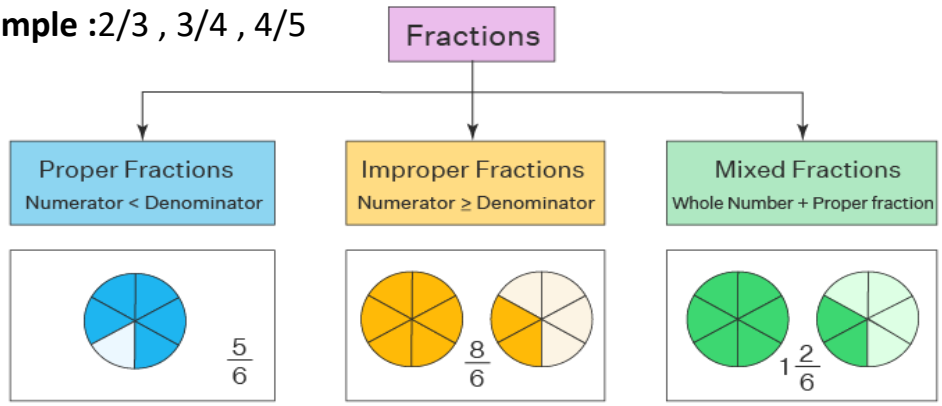
1. **Like fractions :** Fractions which have a common denominator are called like fractions.
   Example: 2/3 , 1/3 , 4/3



2. **Unlike fractions :**Fractions with different denominators are called unlike fractions.
   Example :2/3 , 1/5 , 3/6



3. **Proper fractions :**The fractions where the numerator is less than the denominator.
   Example :2/3 , 3/4 , 4/5

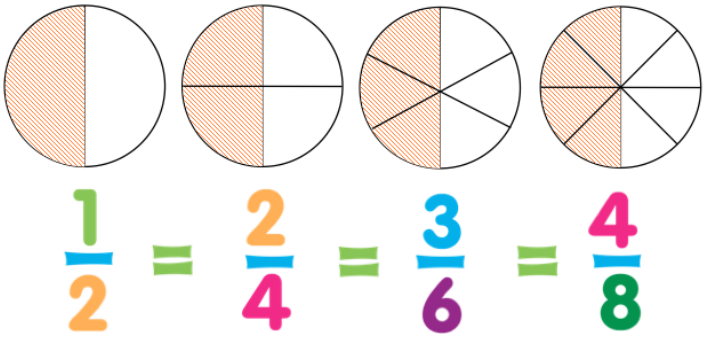


4. **Improper fractions :**The fractions where the numerator is greater than or equal to the denominator.

Example :4/3 , 6/5 , 5/3

5. **Mixed fractions :**A fraction which consists of two parts, an integer and a fraction is called mixed fraction.
   Example :3 ½ , 6 ¼ , 2 ¾

6. **Equivalent fractions :**Some fractions may look different, but are really the same.
   Example : 1/2 . 2/4 . 3/6 . 4/8



Sample Questions

1. Pick the odd one out :

a. 3/8 b. 4/9 c. 6/13 d. 21/5

Ans : D

2. Which two fractions are equivalent?

a. 5/2 and 2/5 b. 4/3 and 8/6 c. 1/4 and 2/4

d. 2/3 and 1/3

Ans : B

3. Out of 20 people in a lie for ice cream, one-quarter want vanilla. How many people want vanilla ice cream?

a. 5 b. 4 c. 6 d. 8

Ans : A

4. It takes Bhola 1/2 hour to wash, comb and put on his clothes and 1/4 hour to have his breakfast. How much time does it take Bhola to be ready for office?

a. 3/4 hour b. 1¼ hour c. 2/4 hour d. 1 hour

Ans : A

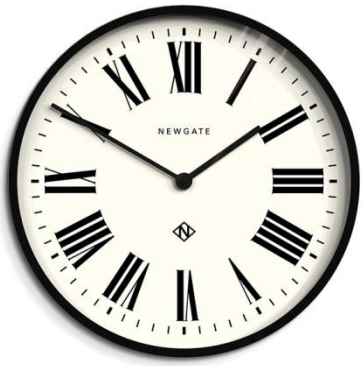
5. Choose the incorrect option from the following.

a. 1/2=4/8 b. 1/2=6/12 c. 1/3=5/10

d. 1/3=5/15

Ans : C

Roman Numbers

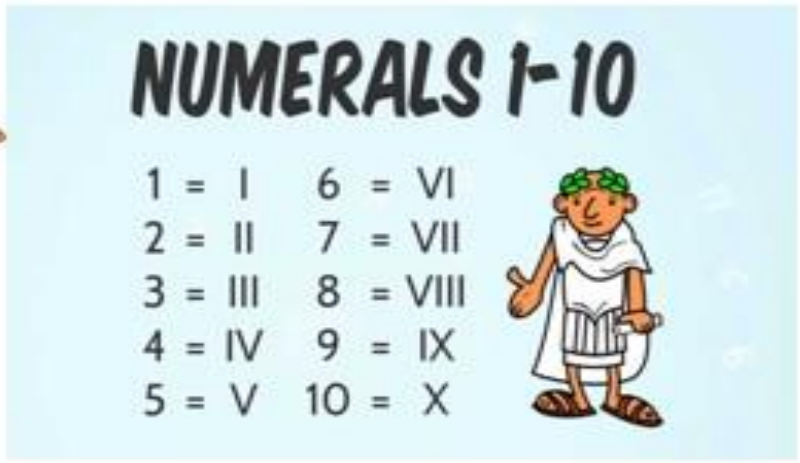


Roman numbers are used widely in our daily life. The most important and common example is watches and clocks with Roman numbers on it. Roman numerals are used to number different volumes of a book classroom in school. Questions in a question paper or exercise.

ROMAN SYMBOLS

There are 7 symbols used in this system which are as follows:

I , V , X , L , C , D , M



1	I	6	VI	10	X
2	II	7	VII	50	L
3	III	8	VIII	100	C
4	IV	9	IX	500	D
5	V	10	X	1000	M

Note : There is no symbol for zero in the Roman Numeral system.

Uses of Roman Numerals:

•When certain Roman Numerals are repeated,

the value of the resulting numeral is equal to their sum.

III = 1 + 1 + 1 = 3

XX = 10 + 10 = 20

•Roman numerals read from left to right, larger values to the left and work to the smaller values on the right.

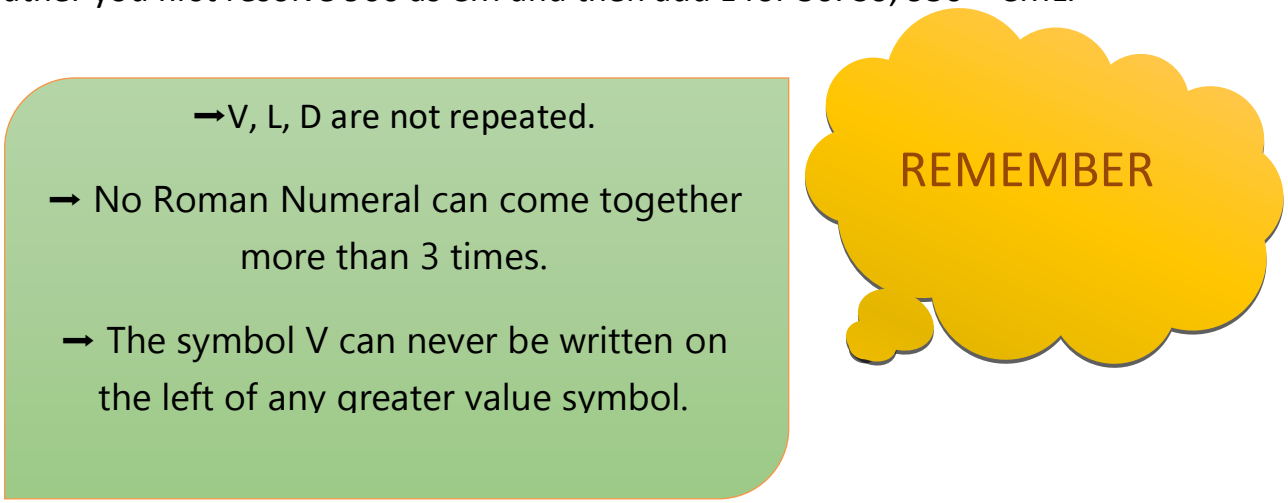
•If a lesser symbol is before a greater symbol, the lesser issubtracted from the greater. For example, IV = 5 - 1 = 4

•If a lesser symbol is after a greater symbol, the two valuesare added. For example, VI = 5 + 1 = 6

• I and V can only modify upto an X. For example, 49 is not written as IL, rather you first resolve 40 as XL and then resolve 9 as IX. Put them together and 49 = 10 + 40 + 9 = XLIX.

• X and L can only modify up to a C. For example, 490 is not written as XD. First you resolve 400 as CD then you resolve 90 as XC. Put them together and 490 = CDXC.

• C and D can only modify up to an M. For example, 950 is not written as LM, rather you first resolve 900 as CM and then add L for 50. So, 950 = CML.



Sample Questions

1. Addition is only applicable when the first symbol is _____ than the second, third etc.

a. Greater b. Smaller c. Equal d. Greater than equal to

Ans : A

2. Convert: 1400 into Roman number____.

a. MCD b. MC c.MD d. M

Ans : A

3. MMCMXXXI + MMMCMLXXXII is equal to

a.VICMXII b. VICMXI c. VICMXIIId. VICMX

Ans : C

4. Convert the statement into Roman Numeral : 5 x 4

a. V x IV = XX b. V x IV = VIV c. V x IIII = XX d. V x IV = VVVV

Ans : A

5. Write 630 as a Roman Numeral.

a. DCXX b. DXXX c. VCXXX d. DCXXX

Ans : D

3-Dimensional Shapes

Two dimensional shapes – These shapes have only length and breadth (i.e. two dimensions). They don't have any thickness. Example – Circle, Square, Rectangles, Polygons etc.

Three dimensional shapes- These are solid shapes which have length, breadth and thickness (height or depth). Example – Cone-Shaped Ice cream, Sphere-shaped football, Cylinder etc

Common terms in 3-Dimensional Shapes

Face:- A flat surface of a three-dimensional figure is a face.

Edge:- An edge is where two faces meet.

Polygons:-A polygon can be defined as two dimensional closed figure bounded by 3 or more line segments. Examples- Triangle, Square, Rectangle, Parallelograms, Pentagon etc

Polyhedron:-A polyhedron is a three-dimensional figure whose faces are all polygons.

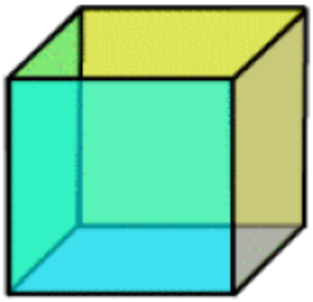
Vertex and Corner:-A vertex of a polyhedron is a point where three or more edges meet. While any converging point can be named as a corner or vertex. The face that is used to name a polyhedron is called a base.

Net of solids:-Nets are two-dimensional patterns for three-dimensional figures.

Common types of 3-Dimensional Shapes

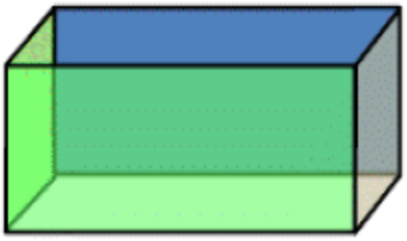
Cube:- A cube is a solid or three-dimensional shape which has 6 square faces. It has :-

12 equal edges
8 vertices and
6 faces



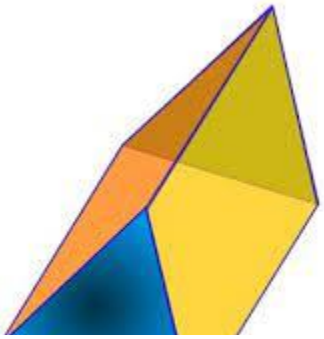
Cuboid:- A cuboid is also called a rectangular prism. The faces of the cuboid are a rectangle in shape. It has:-

12 edges
8 vertices and
6 faces.



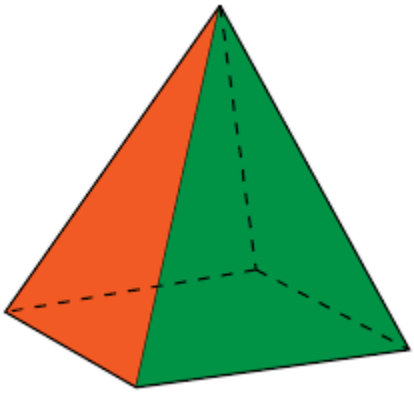
Prism:- *A* prism is a three-dimensional solid which has identical faces at both ends. The other faces are flats. A triangular prism has:-

9 edges
6 vertices
5 faces.

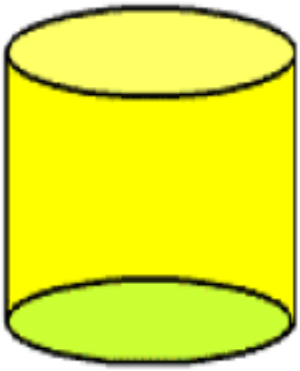


Pyramid:- A pyramid can be defined as a solid shape, whose outer faces are triangular and meet to a single point on the top. It is named as per the type of its base. A square pyramid has:-

8 edges
5 vertices and 5 faces.

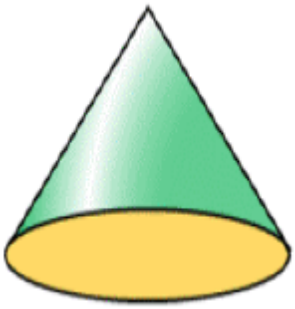


Cylinder:- A cylinder is defined as a three-dimensional shape which has two circular bases connected by a curved surface. It has:-



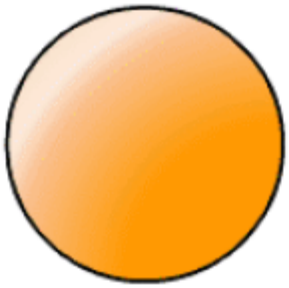
No edge, No vertex
2 Curved-edges
Two circular flat faces and
one curved surface

Cone:- A cone is a three-dimensional solid, which has a circular base and has a single vertex. It has:-



No edge, One vertex
1 Curved-edge
One circular flat face and
one curved surface

Sphere:- A sphere is a 3-dimensional solid figure which is perfectly round in shapes and every point on its surface is equidistant from the point is called the center. Distance from the center of the sphere is called its radius.



It has a curved surface, no vertex, no edge.

Sample Questions

Q1. How many vertices are there in a triangle?

(a) 1 (b)2 (c)3 (d) 4

Ans- (c)

Q2. How many number of faces does a solid sphere has?

(a) 1 (b)2 (c)Many (d) None

Ans- (d)

Q3. How many number of faces does a hemisphere has?

(a) 1 (b)2 (c)Many (d) None

Ans- (a)

Q4. Which of the following can be other name of a cylinder?

(a) A triangular prism (b) A rectangular prism

(c)A vertical prism (d) A circular prism

Ans- (d)

Q5. How many number of vertices does a cone has?

(a) 1 (b)2 (c)Many (d) None

Ans- (a)

Perimeter

The perimeter of an object in a plane is the length of its boundary.

- It can be measured by finding the sum of all the sides in mm, cm, m, km etc
- A circle's perimeter is called its circumference.

Formula for some common shapes

Square:- A square is a regular polygon whose all four sides are equal, and all the angles are 90 degrees.

Perimeter of a square = Sum of all four sides

= 4 x Side

Also, Side of square = $\frac{Perimeter}{4}$

Rectangle:- A rectangle is a polygon whose opposite sides are equal, and all the angles are right angles.

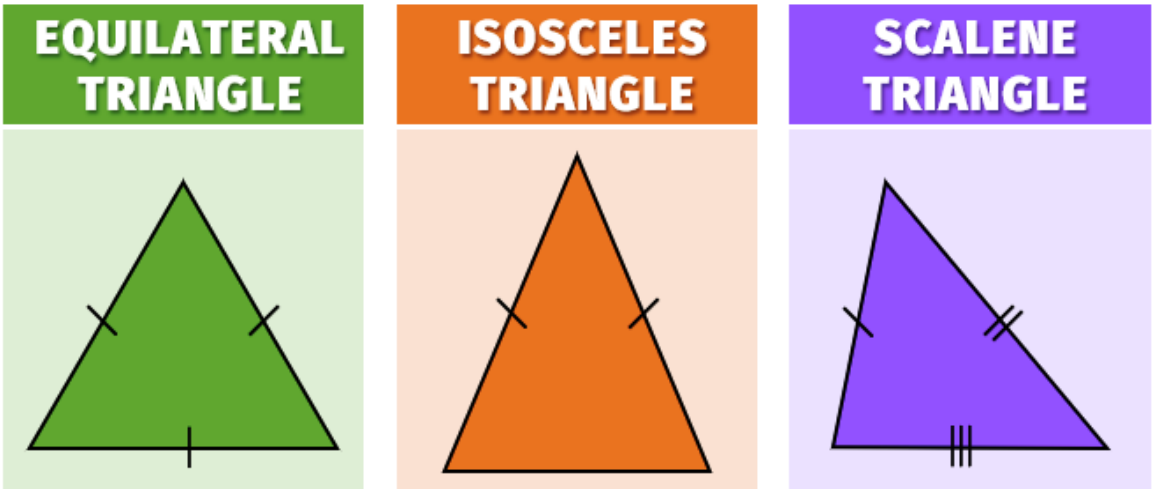
Perimeter of a rectangle = Sum of all sides

= 2 xLength + 2 x Breadth

= 2 x (Length + Breadth)

Also, Length = $\frac{Perimeter}{2}$ - Breadth and Breadth = $\frac{Perimeter}{2}$ - Length

Triangle:- A triangle is the simplest polygon with three angles and three straight lines. Triangles can be classified into three kinds, such as-



Equilateral triangles: These have three sides equal and three angles equal. Their angles are always 60°. Perimeter = 3 x Side

Isosceles triangles: These are the triangles in which two of the sides are equal. The non-included angles of the sides are also equal.

Perimeter = (2 x Equal side) + Third Side

Scalene triangles : These have no equivalence at all.

Perimeter = Sum of all three Sides

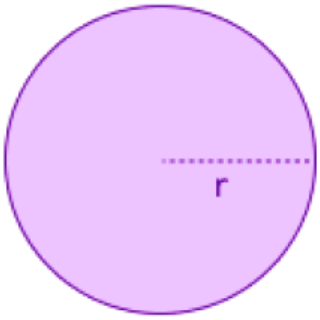
Regular Polygon:- A regular polygon refers to a polygon whose number of sides and angles are the same.

Perimeter of a regular polygon with N number of sides = N x Length of one side

Circle:- A circle refers to a perfectly round shape. Every point of a circle is at same distance from a point called its center. Distance from the center of the circle is called its radius.

Perimeter of a circle = 2 x π x Radius of the circle

= 2 x π x r



- Pi or π is pronounced like "pie". The value of Pi (π) is the ratio of the circumference of a circle to its diameter and is approximately equal to $\frac{22}{7}$ or 3.14159.

- Diameter of a circle = 2 x Radius

Sample Questions

Q1. Find the perimeter of a circle whose diameter is 14 cm. [Take $\pi = \frac{22}{7}$]

(a) 40 (b)44 (c)46 (d) 48

Ans- (b)

Q2. Perimeter of an equilateral triangle with side 23 cm is _____cm.

(a) 60 (b)68 (c)65 (d) 69

Ans- (d)

Q3.A square has its one side = 25 cm. Its length of boundary is _____ cm.

(a) 50 (b)75 (c)1000 (d) 100

Ans- (d)

Q4. An equilateral triangle has the length of boundary = 9 cm, its one side =_____ cm.

(a) 10 (b) 3 (c) 8 (d) 5

Ans- (b)

Q5. Find the length of a rectangle of perimeter = 24 cm and breadth = 2 cm.

(a) 10 (b) 8 (c) 24 (d) 22

Ans- (a)

Clock And Calendar

Analog Clock

It has a minute hand, an hour hand and some times a second hand also.

Digital Clock

The digits on the left side show hours and the digit to right side shows minutes.

Here are some units to measure time

Second(s)		**Week**	1 week =7 days
Minute(min)	1 min=60 sec	**Month**	1 month =28,29,30 or 31days
Hour(hr)	1 hr =60 min		(According to the month)
Day (d)	1 day =24 hours	**Year**	1 year =365 days
			1 leap year =366 days

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 which 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 which means that the morning goes up until 12:00 noon and it starts over again with 01:00 and goes through 12:00 midnight.
  - 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

How to solve questions based on Calendar?

- Each day of the week is repeated after 7 days.
- Number of days in X week and X days is 8 X.
- Number of odd days in non leap year is 1 and in leap year is 2.
- A leap year calendar repeats in 28 days while the calendar of non leap year repeats after 6 or 11 years.

- ✓ 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 Monday, Tuesday, Wednesday, Thursday, Friday, Saturday and Sunday.

Examples:

1. Today is Monday, after 61 days it will be?

a) Saturday b) Sunday c) Monday d) Tuesday

Answer: a) Saturday

Explanation: Each day of the week is repeated after 7 days.

So, after 63 days, it will be Monday.

∴ After 61 days, it will be Saturday.1.

2. How many days are there in 7 weeks and 7 days?

a) 55days b) 56 days c) 57 days d)58 days

Answer: b) 56 days.

Explanation: Number of days in X week and x days is 7x+x =8x.

So, 8x7 =56 days

3.It was Sunday on Jan 1,2006.What was the day of week on Jan 1,2010?

a) Sunday b) Saturday c) Friday d) Thursday

Answer: c) Friday

Explanation: On 31st December, 2005 it was Saturday.

Number of odd days from the year 2006 to the year 2009

= (1 + 1 + 2 + 1) = 5 days.

∴ On 31st December 2009, it was Thursday. Thus, on 1st Jan, 2010 it is Friday.

Practice Problems

1. It was Friday on January 1, 2010. What was the day of the week on January 1, 2012?

a) Sunday b) Monday c) Tuesday d) Wednesday

2. How many minutes are there between 4:25 and 5:00?

a)25 min b)30 min c)35 min d)40 min

3. How many days are there in 10 weeks and 10 days?

a) 80 days b)81 days c) 82 days d) 83 days

4. Today is Friday. What will be the day of week after 65 days?

a) Saturday b) Sunday c) Monday d) Tuesday

5. From the following options which year is not a leap year?

a) 7000 b)8000 c)2000 d)1200

Answers

Q.No.	1	2	3	4	5
Answer	Sunday	35 min	80 days	Sunday	7000

Series And Pattern

Series:

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

Example:

1. Find the odd one out.

a) EHG b) JML c) UYX d) TWV

Answer: C

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

2. Determine the value of P in the following pattern.

85, 79, 73, 67, P, 55, 49, 43.

a)61 b) 62 c) 63 d)64

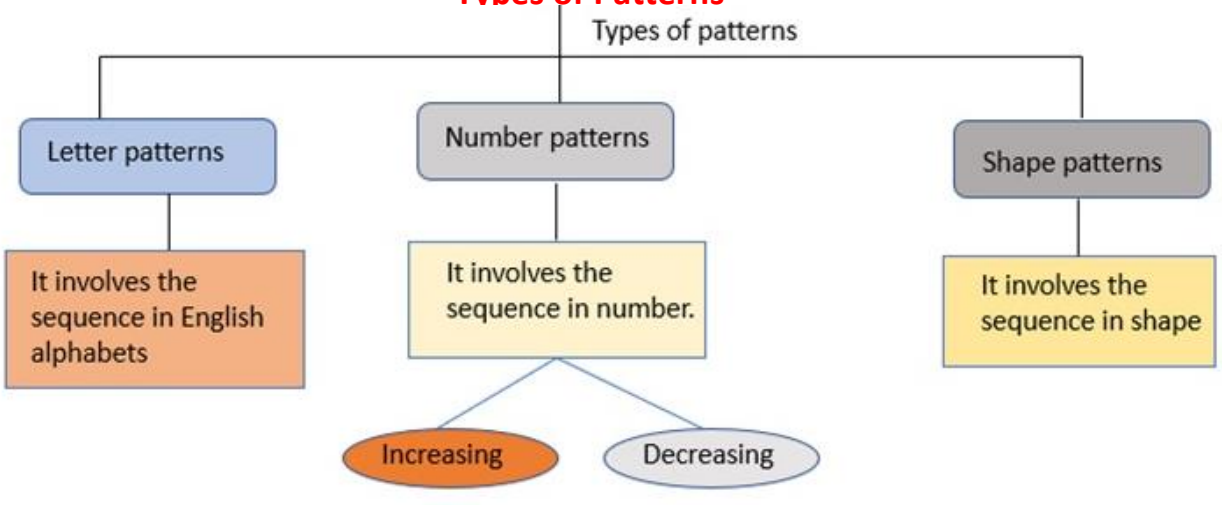
Answer: a) 61

Explanation: This is a decreasing series. Each number decreases by 6.

Patterns

Things that are arranged systematically and follow a rule are said to be in pattern. It is a repeated arrangement of numbers, shapes, and colours and so on. It is also known as sequence.

Types of Patterns



Rules of Patterns:

Patterns can be formed using three categories

Repeating Patterns

A type of Pattern, in which the rule keeps repeating over and over is Called a repeating patterns.

Growing Patterns

In this pattern numbers are present in the increasing form.

Example: 15, 30, 45, 60,

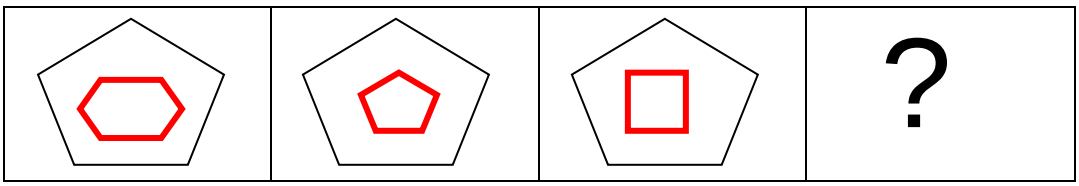
Shirking Patterns

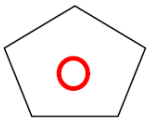
In this pattern numbers are in decreasing form.

Example: 90,80,70,60.....

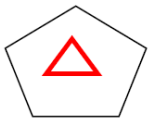
Practice Problems

1. Identify the next shape of the given pattern:



a) 

b) 

c) 

d) 

2 .Which term will be next in the pattern?

A, AB, ABC, ABCD, ?

a)ABCDF

b) ABBCD

c) ACDEF

d) ABCDE

3. Observe the pattern: **2,4,6,8,10,12....** Which pattern type is this:

a)Ascending order pattern

b) Multiple of 3 pattern

c) even number pattern

d) all of these

4. Determine the value of A and B in the following pattern.

15,22,29,36,43,A,57,B,71,78.

a)50,64

b)51,64

c)50,,63

d) 51,65

5. Which of the following is odd one out?

a)216

b) 125

c) 343

d) 1331

Q.No.	1	2	3	4	5
Answer	c	d-ABCDE	d-all of these	a-50,64	a-216

Coding And Decoding

Coding:

Coding refers to the process of writing a secret message to be sent to someone.

Codes can be written using letters, numbers, and symbols. We can also substitute the names of certain things in the process of coding.

Decoding:

It is the process of finding the actual meaning of the coded letters, numbers, and symbols.

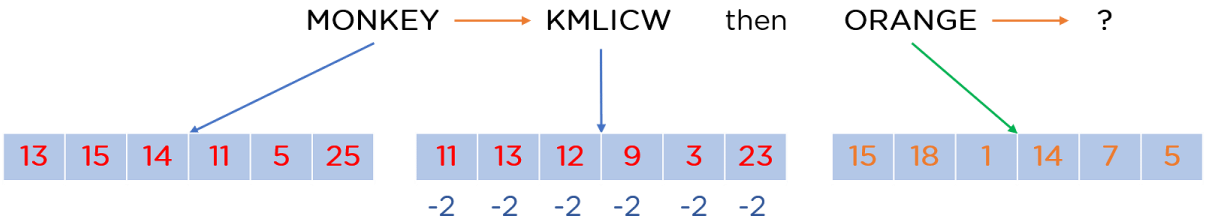
Types of Coding:

There are different types of coding. They are: -

- **Letter Coding:** -Letter Coding is a type in which the letters are replaced with other letters.Take an example of Letter Coding:

Q) MONKEY is coded as "KMLICW", then what should be the code for ORANGE.

Explanation: To solve these kinds of problems, wemust remember that every alphabet has a specific number. So, according to the question,



So, each alphabet of ORNAGE should be decreased by 2

MONKEY - the code for money is - M is coded as 13, O is coded as 15, N is coded as 14, K is coded as 11, E is coded as 5, Y is coded as 25.

In the same way, "KMLICW" is coded as, K is coded as 11, M is coded as 13, L is coded as 12, I is coded as 9, C is coded as 3, W is coded as 23.

If you observe both the given word and, it is coded by decreasing 2 for each alphabet.

So, in the same way, to code "ORANGE", the same number should be decreased.

So, you code "ORANGE" as:

O is coded as 15, R is coded as 18, A is coded as 1, N is coded as 14, G is coded as 7, E is coded as 5.

So, in the same way, it decreased each alphabet by 2. The final solution for Orange would be 13, 16, 25, 12, 5, 3

And you should code the word as "MPYLEC".

- **Mixed Letter Coding:** -In this type of question, three or four complete messages are provided in the coded language, and the code for the particular word is asked. To analyze such codes, and if any two messages bearing the common word, are picked. The common code word will be that word.

Q) In the code language,

1) 'Ha ka bow' means How are you

2) 'ka te ma' means where are they

3) 'se re tho' means good and bad

What does ‘are’ stand for?

Explanation: If you observe the question, it is mentioned that both the 1st and 2ndstatements are repeated.So, the common word in both these statements is KA. The rest of each word is different. So, "are" stands for ka.

So, according to mixed letter coding, "are" stands for "ka".

- **Number Coding:** -In the Number Coding section of reasoning ability, the candidate will have to observe and guess the hidden code of two or more sets of numbers. Once the parent code is known, the candidate will have to use this code to generate other numbers.

Q) If “HOUSE” is coded as 35842, and LEMON is coded as 12659, then what would be the code for HELEN?

Explanation: The code of every letter is already specified in the question itself, so no need to use fixed codes of the letters.

HELEN is coded as 32129

Now, specify the number of each letter to solve the problem. If you observe the two words, some of the letters are repeated, so no need to write the repeated letters.

Now, code the letters.

H is coded as 3, O is coded as 5, U is coded as 8, S is coded as 4, E is coded as 2, L is coded as 1, M is coded as 6, N is coded as 9

Using these codes, "HELEN" is coded as 3,2,1,2,9.

- **Symbol Coding:** - In the symbol coding, we use the symbols like “!@#$%^&*()_”, to represent words or letters. These codes are then used to determine a code for the words that are written down. Let us see an example.

Q) If “LESD” is written as “ @ $ & #” , “NAC” is written as “ % ? * ”, how “CANDLES” iscoded in the same way?

(a) *&%#$&	(b) *?%&@$#	(c) *&^$@	(d) ?@$@^%@&

Answer: In the code, we can see that the code for L is @. Building on to that we can see that the option (b) *?%&@$# is the correct option.

- **Substitution Coding:** In substitution coding, it assigns objects to code names. Then a question is asked to solve the answer in the same pattern.

  Now, have a look at the example for a clear understanding. We have

Q) If 'white' is called 'red', and 'red' is called 'blue', 'blue' is called 'green', 'green' is called 'yellow', 'yellow' is called 'black', and what is the colour of blood?

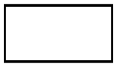
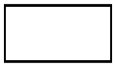
Explanation: As we know, the blood is red. So, if you observe the above question, it is mentioned that white is called red and red is called blue.

So, blood is red by using the substitution method, the answer would be blue.

Practice Questions

Q. 1. If "City" is called "Village","Village" is called "Forest" and "Forest" is called "Building", then where do deer live?

(a) City (b) Village (c) Forest (d) Building

Q. 2. If  means  ,  means  ,  means  and  means  , then which has exactly four lines of symmetry?

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

Q. 3. If in a certain code 69214 is written as HSXTR and 2387 is written as XNDU, then how will 12486 be written in the same code?

(a) ZYUDR (b)ZYDUR (c)TXRDH (d)YXDRH

Q. 4. In a certain code language, if "WEAK" is written as "$3#7" and "PORE" is written as "@5&3" then how is "PEAR" written in that code language?

(a) @#3& (b) @7#$ (c) @3#& (d) $3#&

Q. 5. If 'table' is 'book', 'book' is 'pen', 'pen' is 'eraser', 'eraser' is 'sharpener', 'sharpener' is 'pencil' and 'pencil' is 'school', then what is used by student to sharp pencil?

(a)sharpener (b)pencil (c)pen (d)eraser

Answer key

Q.No.	1	2	3	4	5
Answer	d	b	c	c	b

English

TENSE

- A tense is a form of the verb that allows to express time.
- The tense of the verb tells us when an event or something existed or when a person did something.
- There are three main types of tenses-Past, Present and Future.
- These tenses are further divided into four forms each- Simple,Continuous,Perfect and Perfect Continuous.

1. Present Tense

Simple Present	John does his homework. (Subject+V1+ Object)
Present continuous	John is doing his homework. (Subject+am/are+V1 with 'ing' ending+ Object)
Present Perfect	John has done his homework. (Subject+ has/have+V3+Object)
Present Perfect Continuous Tense	John has been doing his homework. (Subject +has/have+been+V1+ing +Object)

2.Past Tense

Simple Past	The baby cried for milk. (Subject+V2+ Object)
Past Continuous	The baby was crying for milk. (Subject was/were + V1 with 'ing' ending+ Object)
Past Perfect	The baby had cried for milk.

	(Subject+had+V3+Object)
Past Perfect Continuous Tense	The baby had been cried for milk. (Subject + had+ been+V1+ing +Object)

3. Future Tense

Simple Future	They will cook dinner. (Subject+ will+V1+Object)
Future Continuous	They will be cooking dinner. (Subject will be+ V1 with 'ing' ending+Object)
Future Perfect	They will have cooked dinner. (Subject+ will have+V3+Object)
Future Perfect Continuous Tense	They will have been doing their homework. Subject +will/shall +have+been+V1+ing +Object

Sample Questions

Q.1 Choose the correct form of the verb to fill in the blank.

i. Anchal _____ her Economics notebook in the classroom.

a. has finds b.founded c. found d. was found
Answer: c

ii.The river _____ into the sea.

a. flow b.flows c. has flown d. flowing
Answer:b

iii. The monkeys _____ on the tree.

a.is b.am c.are d.was

Answer: c

Q.2 In the given sentences choose the sentence showing the correct use of tense.

a. My mother was angry with me.
b. My mother has angry with me.
c. My mother are angry with me.
d. My mother had angry with me.
Answer:a

Q.3.Choose a sentence which shows past continuous tense.
a. Suraj visits Shimla very often.
b. The cat sat under the table.
c. Riya was reading a book.
d. I will go to the market.

Answer: c

VOICE- ACTIVE AND PASSIVE CONSTRUCTION

There are two voices-(i) Active Voice (ii)Passive Voice

i. When the subject of the verb is the doer of the action,it is said to be in active voice.

Examples:

a. Arvind drove a car.
b. She writes a letter.
c. Shasha has eaten the cake.
d. Someone knocked at the door.

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

a. A car was driven by Arvind.
b. A letter is written by her.
c. The cake has been eaten by Shasha.
d. The door was knocked at.

Note: Only transitive verbs can be changed into passive voice.

Rules for changing the voice of sentence.

a. The object of the active verb becomes the subject of the passiveverb.

b.The subject of the active verb can be mentioned with the help of preposition- 'by'

c.The passive voice must contain the past participle form of 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:

Simple Present Tense (is/am/are + third form of verb)

Active Voice	Passive Voice
➢ Dhoni plays cricket.	Cricket is played by Dhoni.
➢ They eat apples.	Apples are eaten by them.

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

Active Voice	Passive Voice
➢ We helped you.	u were helped by us.
➢ Riya made a mistake.	mistake was made by Riya

	Active Voice	Passive Voice
1.	I read a poem.	A poem is read by me.
2.	He scolds me.	I am scolded by him.
3.	She plucks the flowers.	Flowers are plucked by him.
4.	Does he carry a bag?	Is a bag carried by him?
5.	What do you do?	What is done by you?
6.	Ram plays the flute.	The flute is played by Ram.
7.	You do not like her.	She is not liked by you.

Sample Questions

Q.1 Change the voice of the sentences from active to passive and choose the correct answer.

i. Bees make hives.

a. Hives were made by bees.
b. Hives are made by bees.
c. Hives have been made by bees.
d. Hives are being made by bees.

Answer: b

ii.The lion chased the deer.

a. The deer is chased by the lion.
b. The deer is being chased by the lion.
c. The deer has been chased by the lion.
d. The deer was chased by the lion.

Answer: d

iii.Hari hits the ball.

a. The ball is hit by Hari.
b. The ball has been hit by Hari.
c. The ball was hit by Hari.
d. The ball is being hit by Hari.

Answer: a

Q.2. Choose the sentence which is written in active voice.

a. He is admired by all.
b. The function was ruined by the rain.
c. The children wrote an essay.
d. This house was built by my grandfather.

Answer: c

Q.3. Choose the sentence which shows passive voice.

a. The plumber repaired the pipes.
b. Plague is spread by rats.
c. Ramesh has stolen a book.
d. He purchased many books.

Answer: b

DIRECT and INDIRECT SPEECH

The process of changing Direct Speech to Indirect Speech or Indirect Speech to Direct Speech without changing the core meaning of the speaker's words is known as narration change.

Direct speech is when we repeat the actual words spoken by the speaker. These words are put within inverted commas.

For example, Arun said, "I know Pratham."

Indirect speech tells us what someone else said. Therefore, it is also called reported speech. Indirect speech does not tell us the exact words but only the meaning. No inverted commas are used.

Indirect speech: Arun said that he knew Pratham.

Direct Speech

Direct speech may be a question, statement, exclamation or an imperative sentence.

The exact words arewithin inverted commas.

Indirect Speech

Indirect speech is only a statement.

Inverted commas are not used.

The verb that introduces the actual words of the speaker is called the **Reporting Verb**. If the reporting verb is in the present tense then the tense of the indirect speech does not change.

It remains the same.

EXAMPLE

He says, “I am positive.”

He says that he is positive.

<u>Rules of Changing Direct Speech into Indirect Speech:-</u>

Change in pronouns

I (is changed into) he/she

We - they

You - they/he/she

My/mine - his/her/hers

(ii) Change in expressions of time and place

Direct	**Indirect**
now	then
here	there
ago	before
thus	so
today	that day

tomorrow	the next day
yesterday	the day before/ the previous day
last night	the night before

(iii) Change in tenses

SIMPLE PRESENT TENSE (CHANGES INTO)----------	**SIMPLE PAST TENSE**
is/am/are	was/were
does not, do not	did not
She said, “I play.”	She said that she played
He said, “I do not know.”	He said that he did not know.

PRESENT CONTINUOUS	**PAST CONTINUOUS**
He said, “I am writing.”	He said that he was writing.
They said, “We are decorating the room.”	They said that they were decorating the room.

PRESENT PERFECT	**PAST PERFECT**
have/has	had
She said, “I have an eraser.”	She said that she had an eraser.
He said, “The watch has stopped.”	He said that the watch had stopped.

SIMPLE PAST	**PAST PERFECT**
He said, “I came late.”	He said that he had come late.
He said, “I did not play.”	He said that he had not played.

PAST CONTINUOUS	**PAST PERFECT CONTINUOUS**
She said, “I was knitting.”	She said that she had been knitting.
Mom said, “I was cooking your favourite dish.”	Mom said that she had been cooking my favourite dish.

PAST PERFECT and PAST PERFECT CONTINUOUS remain the same.

PRESENT PERFECT CONTINUOUS changes into PAST PERFECT CONTINUOUS.

Universal truths remain the same.

EXAMPLE-

The child said, “The sun rises in the east.”

The child said that the sun rises in the east.

Choose the correct indirect speech.

Q.1.Rahul said, “Man is mortal.”

a) Rahul said that man is mortal.
b) Rahul said that man was mortal.
c) Rahul said man is mortal.
d) None of these.

Q.2.She said, “I wrote a book.”

a) She said that she wrote a book.
b) She said that she has written a book.
c) She said that she had written a book.
d) None of these.

Q.3.Namita said, “I am reading a book.”

a) Namita said that she read a book.
b) Namita said that she has read a book.
c) Namita said that she was reading a book.
d) Namita said that she is reading a book.

Q.4.He says, “I am sick.”

a) He said that he was sick.
b) He says that he is sick.
c) He said that he is sick.
d) He says that he was sick.

Q.5.Kiran said, “I am very busy now.”

a) Kiran said that she was very busy then.
b) Kiran said that she is very busy now.
c) Kiran said that she is very busy then.
d) None of these.

Answer key

Q.No.	**1**	**2**	**3**	**4**	**5**
Answer	**a**	**c**	**c**	**b**	**a**

VOCABULARY

Vocabulary, also known as lexicon, is a set of words, typically the set in a language or the set known to an individual. The word vocabulary originated from the Latin *vocabulum*, meaning "a word, name."

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 the correct use of words, spellings, analogy and jumbled words.

WORDS OFTEN CONFUSED/MISSPELLED

achieve	definition	guarantee	besiege
address	occurrence	separate	license
believe	questionnaire	embarrass	ceiling
maintenance	pronunciation	disappoint	calendar
vacuum	privilege	disappear	accommodate
perseverance	mischievous	deceive	receipt
guard	occasion	committee	splendour
receive	temperature	commitment	acquaintance
failure	genuine	exquisite	exaggerate
cautious	abundant	reluctant	commence
accurate	burglar	fulfil	skilful

JUMBLED WORDS

YMNKOE	MONKEY
EDESRT	DESERT
BELRE	REBEL
CTPRFEE	PERFECT

RSSANANCEIE	RENAISSANCE
CEPDURO	PRODUCE
HTIORECUTULR	HORTICULTURE
EGREDEDANN	ENDANGERED

SINGLE WORD FOR A GROUP OF WORDS.

- One who believes in fate = FATALIST
- One who looks at the bright side of things = OPTIMIST
- One who looks at the dark side of things = PESSIMIST
- One who is knowing everything = OMNISCIENT
- One who is being all-powerful = OMNIPOTENT
- One who is being present everywhere = OMNIPRESENT
- One who comes as a settler into a foreign country = IMMIGRANT
- One who makes an eloquent public speech = ORATOR
- One who defends or is zealous for his country's freedom or rights = PATRIOT
- A child whose parents are dead = ORPHAN

Q.1. Choose the correct spelling.

a) beginning
b) begginning
c) begining
d) begiining

Q.2. Unscramble the letters and find the correct spelling.

orydnair

a) ordinary
b) order
c) road
d) rainy

Q.3. Conflict, fight, war are synonyms of

a) abolish
b) horrible
c) combat
d) efficient

Q.4. One who knows many languages is known as

a) alien
b) lecturer

c) professor
d) linguist

Q.5.Choose the odd one out.

a) mansion
b) monastery
c) abode
d) menage

Answer Key

1	2	3	4	5
a	a	c	d	d

Synonyms & Antonyms

Synonyms refers to any word or phrase that has the same meaning as another word or phrase.

Antonyms refers to any word that is opposite in meaning.

Examples:-

Words	***Synonyms***
1. Occur	*Happen*
2. Lazy	*Slothful, Idle*
3. Big	*Enormous, Huge*
4. Calm	*Quiet, Peaceful*
5. Scared	*Frightened, Dreadful*
6. Fast	*Rapid, Hasty*
7. Idea	*Thought, Concept*
8. Trouble	*Anguish, Anxiety*
9. Difficult	*Hard, Toilsome*
10. Amazing	*Adorable, Fantastic*
11. Value	*Worth, Merit*
12. Trust	*Faith, Belief*
13. Smart	*Clever, Intelligent*
14. Rich	*Wealthy, Moneyed*
15. Small	*Tiny, Minor*

Words	***Antonyms***
1. Blunt	*Sharp*
2. Full	*Empty*
3. Ancient	*Modern*
4. Combine	*Separate*
5. Brave	*Coward*
6. Active	*Idle*
7. Synthetic	*Natural*
8. Arrive	*Depart*
9. Humiliate	*Honour*
10. Complex	*Simple*
11. Sorrow	*Joy*
12. Wide	*Narrow*
13. Difficult	*Easy*
14. Beginning	*End*
15. Nasty	*Pleasant*

Practice Questions

1. Which of the following means **value**?

a) Careless

b) Easy

c) Worth

d) Worthless

Ans – Worth

2. Choose the opposite option.

Small

a) Tiny

b) Minor

c) Little

d) Big

Ans – Big

3. Which of the following words means opposite of **Nasty**?

a) Unpleasant

b) Pleasant

c) Arrogant

d) Hard

Ans – Pleasant

4. I know I can **trust** you. Which of the following is a synonym of the word above?

a) Believe

b) Hide

c) Accept

d) Honour

Ans – Believe

5. You are a very **active** student.

Which word is an Antonym of the above underlined word?

a) Quiet

b) Clever

c) Idle

d) Modern

Ans – Idle

Idioms & Phrases

Idiom a group of words whose meaning is different from the meanings of individual words in it.

Examples: -

1. To kill two birds with one stone - to get two things done with a single action.

2. To let the cat out of the bag – to tell a secret.

3. A Blessing in disguise – a good thing that seemed bad at first.

4. A dime a dozen – something very common

5. Better late than never – better to complete the work than not to complete at all.

6. To call it a day – to stop working for the day.

7. To get out of hand – to become difficult to control.

8. To keep an eye on – to keep a watch n something.

9. To pull someone's leg – to tease someone.

10. To add insult to injury – to make a bad situation worse.

11. Don't count on your chickens before they hatch – don't rely on until you are sure of it.

12. Cry wolf – intentionally raising a false alarm.

13. Cry over spilt milk – Complaining about a past incident.

14. Bite your tongue – avoid talking.

15. A slap on the wrist – A very mild punishment.

16. Best of both worlds – to enjoy two very different things at the same time.

17. On cloud nine – to be extremely happy.

18. The lion's share – the largest part of something.

19. A Fish out of water – being uncomfortable in a situation.

20. Once in a blue moon – something that happens very rarely.

Phrase is a part of a sentence and doesn't not give us complete meaning.

Examples:

1. Act out – perform something

2. Add on – include

3. Back away – retreat

4. Be down – depressed

5. Cap off – finish

6. Decide upon – select

7. Fawn off – praise someone too much

8. Hold on – wait

9. Jazz up - make something more interesting

10. Let off – not punish

Practice Questions

1. My teacher told me to **act out** on the annual day. Which of these words means the same as the highlighted words?

a) Dance

b) Sing

c) Perform

d) Finish

Ans – Perform

2. I was busy crying over spilt _____. Complete this Idiom.

a) Oil

b) Juice

c) Milk

d) Shake

Ans – Milk

3. Which of the following options is correct regarding this – to become difficult to control.

a) To be loose

b) To get out of hand

c) To become too tight

d) To be hard

Ans – To get out of hand

4. Kartik's sister took a lion's share of his cake. Which of the following means the same as above? a) Piece eaten by lion

b) Lion's food

c) Largest part

d) Smallest part

Ans – Largest part

5. Which of the following fits in the sentence below?

My family asked me to _____ my friends list for the party.

a) Add on

b) Jazz up

c) Cap off

d) Let off

Ans – Add on

Homophones

Homophones are the words that sound the same **but** spelled differently and have different meanings.

1. Allowed(verb)/Aloud(adverb)

a. *Allowed* means to give permission to do something.

Sentence-The teacher allowed the students to use their laptops during G.K. class.

b. *Aloud* means audibly or in a way that can be heard.

Sentence-She reads the poem aloud in the class.

2. Board(noun)/Bored(adjective)

a. *A board* is a flat piece of wood to write.

Sentence -Art teacher is drawing a beautiful doll on the board.

b.-*Bored* means lacking interest.

Sentence- She got bored during the History class.

3. Dew(noun) or Due (adjective,noun)

Dew is a tiny drop of water that form on the ground and other surfaces outside during the night when atmospheric vapor condenses.

Sentence-In the winter morning, the grass was wet with dew.

In terms of the noun, *due* means what is owed (especially money) to one. In terms of adjective, expected to happen, arrive, etc. at a particular time.

Sentence- When is the first payment due?

4.Waste(noun)/Waist(noun)

a. *Waste* refers to something that is unused, discard or thrown away.

Sentence- Don't waste food.

b. *Waist* is the part of the body between the ribs and hips.

Sentence-These trousers have an elastic waist.

5.Tale (noun)/Tail (noun)

a. *Tale* is a fictitious or true narrative or story.

Sentence-*Vikram Baital* is one of the most popular Indian tales.

b.*The tail* is the hindmost part of an animal.

Sentence- The dog wagged its tail excitedly.

Choose the correct homophone for each sentence.

1.Could you please pass a ……(piece/peace) of the pastry?

2. I saw a beautiful……(dear/deer)in the forest.

3.Mohan's trousers were big so he wore a belt around his ……(waist/waste).

4.Tisa's sister was sick so he …… (made/maid) a card for her.

5. Out in the forest, the …… (bear/bare) ate some berries.

Answer Key- 1. Piece 2. Deer 3. Waist 4. made 5. Bear

Words That May Often Be Confused

Some words in English cause trouble for speakers and writers because these words share a similar pronunciation or spelling with another word. These words are called commonly confused words.

Currant vs. Current

a. Currant-*Currant* is a noun that refers to a small raisin or berry.
Sentence- I love to eat black currant ice-cream.

b. **Current-*Current* is a noun that refers to a continuous movement of water or air in the same direction**.
Sentence-We were rowing against the current.

There Vs. Their

a. There-*There* is used when we are referring to a place.
Sentence-We went there in a group.

b. Their- *Their*refers to possession of something.
Sentence-Their house is small but comfortable.

Affect vs. Effect

a. *Affect* is a verb that means*to influence*

Sentence-Motivational speech will affect my daughter greatly.

b. Effect-Effect is a noun meaning result.
Sentence- Weight gain can be the effect of an unhealthy lifestyle.

Lose vs. Loose

a. *Lose* is a verb that means *fail to win.*
Sentence-I don't want to lose this match.

b. *Loose* is an adjective that means*not tight.*
Sentence-Wear loose clothes as they are more comfortable.

Than vs. Then

a. Than-*Than* is used to compare two things.
Sentence-I like cake better than pie.

b. Then-*Then* is used to indicate time.

Sentence-Finish your homework then you can watch TV.

Select words from the brackets to fill in the blanks.

1. It was……. difficult for her to remain……even for a few minutes. (quiet, quite)
2. Please ……. till I noted down the ……..of the first child. (weight, wait)
3. The …… fell into a drum containing blue paint and his……got dyed blue. (hair, hare)
4. The wound on his ……...took a long time to ……. (heel, heal)
5. This shop……battery ……also. (sells, cells)

Answer Key- **1. quiet, quite** **2. wait, weight** **3. hare, hair**

4. heel, heal **5. sells,cell**

Reasoning and Figure of Speech

What are reasoning questions?

The logical reasoning questions can be either verbal or nonverbal. The concepts and issues in verbal logical reasoning questions are conveyed in words. Candidates must read and comprehend the supplied text or paragraph before selecting the correct answer from the alternatives provided.

What are four types of reasoning?

There are four types of reasoning.

- Deductive Reasoning
- Inductive Reasoning
- Critical Reasoning
- Intuition

How to improve my reasoning skills?

Here are a few approaches you may take to improve your logical thinking abilities:

a. Spend time on hobbies that need creativity.

b. Experiment with inquiry.

c. Engage with social activities with others.

d. Acquire a new skill.

e. Attempt to predict the consequences of the decisions.

Why do we study reasoning?

The objective of our 'Reasoning" instruction is to improve your capacity to reach logical conclusions. This skill is highly essential in our daily lives, which is why it is included in conventional IQ testing. The most typical activity is to have participants restart a numerical sequence.

What are the tips to solve reasoning questions?

The following are the ways to approach reasoning questions:

a. Carefully read and comprehend the content.

b. Analyze important logical data.

c. Consider all of the alternatives.

d. Compared to other options, compare the result.

e. Reach the proper logical conclusion.

Conclusion:

1. Reasoning in English plays a vital role in understanding texts, communicating effectively and appreciating texts.

2. By practicing critical thinking and applying reasoning skills, you can become a better reader, writer, and communicator.

Sample Questions.

1.Find four-letter word hidden at the end of one word and at the beginning of the next word. The order of letters may not be changed.

Example:

a. The children had bats and balls. sand

b. Many frozen icecaps are found in Canada. nice

c. Tom's biggest problem was the neighbours playing loud music. then

d. The Vikings fled overland before regrouping. dove

e. Kevin ended the conversation quickly.vine

2. Add a single letter in the beginning of the following words (the same letter) to form new words.

a. WHEAT

b. WHEEL

c. WEIGHT

3. Take out a single letter from the body of these words and form new words.

a. PRIDE RIDE

b. SPOON SOON

c. SPEND SEND

4. Point out the stranger among these:

a. rice, potatoes, spinach, sugar sugar

b. cup, saucer, knife, glass knife

Practice Questions

1. In a family, there are husband -wife, two sons and two daughters. All the ladies were invited to a dinner. Both sons went out to play. Husband did not return from office. Who was at home?

a. only wife was at home

b. nobody was at home

c. only sons were at home

d. all ladies were at home

Ans. b

2. If in a certain language, MADRAS is coded as NBESBT, how is BOMBAY coded in that code?

a. CPNCBX

b. CPNCBZ

c. CPOCBZ

d. CQOCBZ

Ans. b

3. Find the missing element in the series given below:

ABD EFH IJL MNP QRT ?

a. ZXA b. WXY c. XYZ d. UVX

Ans.d

4.Which word does not belong to the group?

a. apple

b. banana

c. orange

d. mango

Ans.d

5.Boat: Ship: : ?

a. Book : Volume

b. Oar : Water

c. Aft : Stern

d. Land : Sea

Ans.a

6. Arrange the jumbled letters to make a meaningful word.

M U I M E N

a. Mumine

b. Immuen

c. Immune

d. Imumne

Ans.c

Figure of Speech: A figure of speech is a deviation from the ordinary use of words in order to increase their effectiveness. It is also known as a rhetorical figure too because it produces a rhetorical effect. It deviates a statement from its real meaning or common usage to create a new required effect.

Types of Figure of Speech

1. Simile :A simile compares two dissimilar things using “like” or “as”. The goal of simile is to give the reader a more vivid understanding of something**.**

Examples:

a. It was the very first day of summer, and by the time she came back indoors, she was as red as a tomato.

b. The sun is as bright as shining diamond in the sky.

c. Her smile is like a ray of sunshine on a rainy day.

d. The flowers danced in the breeze, swaying like ballerinas.

e. Her voice was as smooth as silk, calming everyone around.

2. Alliteration : Alliteration is the repeating of consonant sounds right next to each other, which creates a memorable or melodic effect.

Example:

a. She sells seashells by the seashore.

b. Peter Piper pickeda peck of pickled peppers.

c. Silly Salty swiftly skipped to the store.

d. The big brown bear bellowed loudly in the woods.

e. The fluffy feather floated freely in the air.

Practice Questions

1. 'Peter Piper picked a pack of pickled peppers.' Is an example of

a. personification
b. simile
c. rhyme
d. alliteration
Ans.d

2. Which of the following is an example of alliteration?

a. The sun glistened, turning the lake into the pot of honey.
b. The pond is beautiful.
c. The pond was as cold as ice.
d. The sun shone on the smooth surface of the pond.
Ans.d

3. Which is not the example of alliteration?

a. Hannah's home has heat, hopefully.
b. I like to kite at night.
c. Larry's lizard likes leaping leopards.
d. Mike's microphone made much music.
Ans.b

4. What is alliteration?

a. A type of metaphor.
b. The repetition of initial consonant sounds.

c. The comparison of two unrelated things.

d. It is an adjective.

Ans.b

5. Complete the simile: 'He runs as fast as_____'.

a. a turtle

b. a cheetah

c. a snail

d. a boy

Ans.b

6. What is the purpose of using similes in writing?

a. To confuse the reader.

b. To create vivid imagery.

c. To add complexity to the text.

d. To bore the reader.

Ans.b

7. John's Teeth are as white as _____ .

a. chalk

b. snow

c. cloud

d. sky

Ans.b

8. Our marriage is like a _____ .

a. function

b. dream

c. movie

d. drama

Ans.b

9. My baby is like an ____ .

a. doll

b. wish

c. angel

d. god

Ans.c

10. The road near the church is as straight as an _____ .

a. nail

b. stick

c. arrow

d. pole

Ans.c

****

EVS

Environment Pollution

Environment Pollution

Environmental Pollution occurs when harmful substances are introduced into the environment, causing damage to the air, water, soil, and even living organisms. It is largely a result of human activities such as industrialization, transportation, and improper waste disposal. Air pollution from vehicle emissions and factories releases harmful gases and particulates into the atmosphere, affecting our respiratory health and contributing to climate change. Water pollution, caused by untreated sewage and industrial waste, contaminates water bodies, making them unsafe for both humans and aquatic life. Soil pollution degrades the quality of soil, impacting plant growth and leading to environmental imbalances. To address this issue, it is essential for individuals and communities to take responsibility for their actions and adopt sustainable practices to protect and preserve our environment for future generations.

1. What is the primary cause of environmental pollution?

a) Natural disasters

b) Human activities

c) Climate change

d) Wildlife migration

Ans: b) Human activities

2. What type of pollution is caused by vehicle emissions and industrial factories?

a) Water pollution

b) Soil pollution

c) Air pollution

d) Noise pollution

Ans: c) Air pollution

3. How does water pollution occur?

a) Due to deforestation

b) From agricultural practices

c) Through untreated sewage and industrial waste

d) Natural weathering processes

Ans: c) Through untreated sewage and industrial waste

4. How does soil pollution impact the environment?

a) Enhances plant growth

b) Reduces air pollution

c) Improves water quality

d) Degrades the quality of soil and disrupts environmental balance

Ans: d) Degrades the quality of soil and disrupts environmental balance

5. To address environmental pollution, what should individuals and communities do?

a) Increase industrialization

b) Rely on fossil fuels for transportation

c) Practice sustainable habits and take responsibility for their actions

d) Use plastic bags and single-use items

Ans: c) Practice sustainable habits and take responsibility for their actions

Compost/ Fertilisers

Compost is a natural organic material made from the decomposition of plant and animal waste. It is rich in nutrients and acts as a soil conditioner, enhancing its structure and water-retaining capacity. Compost also aids in maintaining the balance of beneficial microorganisms in the soil, which further supports plant growth. On the other hand, fertilizers are synthetic or natural substances containing essential nutrients like nitrogen, phosphorus, and potassium. These nutrients are vital for plant development, and fertilizers help supplement the soil's nutrient content to support optimal crop growth. However, excessive use of chemical fertilizers can harm the environment by causing soil degradation and water pollution. Therefore, a balanced approach that combines the use of compost and appropriate fertilizers is essential for sustainable agriculture,

ensuring bountiful harvests while preserving the health of the soil and the environment.


1. What is one of the key benefits of using compost in agriculture?

a) Controlling pests

b) Increasing soil erosion

c) Enhancing soil structure and water-retaining capacity

d) Reducing crop yield

Ans: c) Enhancing soil structure and water-retaining capacity

2. How does compost support plant growth?

a) By providing shade to the plants

b) By attracting beneficial insects

c) By supplementing essential nutrients

d) By preventing water loss

Ans: c) By supplementing essential nutrients

3. Which nutrients are commonly found in fertilizers?

a) Calcium and magnesium

b) Iron and zinc

c) Nitrogen, phosphorus, and potassium

d) Sodium and chlorine

Ans: c) Nitrogen, phosphorus, and potassium

4. How can sustainable agriculture be achieved concerning compost and fertilizers?

a) Exclusively using chemical fertilizers

b) Utilizing compost without any fertilizers

c) Combining the use of compost and appropriate fertilizers

d) Avoiding the use of both compost and fertilizers

Ans: c) Combining the use of compost and appropriate fertilizers

5. Why is a balanced approach between compost and fertilizers essential for sustainable agriculture?

a) To save costs on agricultural inputs

b) To attract more insects and wildlife

c) To support optimal crop growth while preserving soil health and the environment

d) To reduce the need for irrigation

Ans: c) To support optimal crop growth while preserving soil health and the environment

Reuse, Reduce and recycle

Reuse, recycle, and reduce are three essential practices that promote environmental sustainability and responsible consumption. Reuse encourages using items multiple times to extend their lifespan and minimize waste. By opting for reusable water bottles, shopping bags, and containers, we can significantly reduce single-use plastic waste. Recycling involves the collection and processing of discarded materials like paper, plastic, glass, and metals to create new products. This conserves natural resources, reduces energy consumption, and lessens the burden on landfills. Lastly, reducing refers to minimizing our consumption and waste generation. Making conscious choices like buying products with less packaging, using energy-efficient appliances, and conserving water are all steps towards reducing our ecological footprint. By incorporating these three practices into our daily lives, we can make a positive impact on the environment, fostering a more sustainable and greener future for generations to come.

1. What is the primary purpose of recycling?

a) Extending the lifespan of products

b) Minimizing waste generation

c) Conserving natural resources and reducing energy consumption

d) Enhancing the appearance of discarded materials

Ans: c) Conserving natural resources and reducing energy consumption

2. What does reducing refer to in the context of environmental sustainability?

a) Minimizing waste generation and consumption

b) Increasing the use of single-use items

c) Ignoring environmental issues

d) Promoting excessive consumption

Ans: a) Minimizing waste generation and consumption

3. How does recycling contribute to environmental sustainability?

a) By promoting the use of single-use items

b) By increasing energy consumption

c) By conserving natural resources and reducing waste in landfills

d) By reducing the lifespan of products

Ans: c) By conserving natural resources and reducing waste in landfills

4. Which of the following is an example of reducing our ecological footprint?

a) Using plastic bags for shopping

b) Buying products with excessive packaging

c) Conserving water and using energy-efficient appliances

d) Disposing of waste in landfills

Ans: c) Conserving water and using energy-efficient appliances

5. What is the collective impact of incorporating reuse, recycle, and reduce practices?

a) Increasing waste generation

b) Creating a more sustainable and greener future

c) Expanding the burden on landfills

d) Promoting irresponsible consumption

Ans: b) Creating a more sustainable and greener future

Garbage Management

Garbage management is a crucial aspect of maintaining a clean and healthy environment. It involves the collection, segregation, transportation, and disposal of waste in a systematic and environmentally responsible manner. Proper garbage management aims to minimize the negative impact of waste on human health, wildlife, and ecosystems. One of the essential steps in garbage management is waste segregation, where recyclable materials like paper, plastic, glass, and metals are separated from non-recyclable waste. Recycling helps conserve resources and reduces the burden on landfills. Additionally, composting organic waste can be beneficial for generating nutrient-rich compost that can be used as a natural fertilizer. Proper disposal of hazardous waste and electronic waste is also a crucial part of garbage management to prevent environmental contamination.

1. What does waste segregation involve in garbage management?

a) Collecting waste randomly

b) Separating recyclable materials from non-recyclable waste

c) Ignoring waste disposal practices

d) Mixing hazardous waste with regular waste

Ans: b) Separating recyclable materials from non-recyclable waste

2. How does recycling contribute to garbage management?

a) By increasing the burden on landfills

b) By conserving resources and reducing landfill waste

c) By promoting irresponsible waste disposal

d) By increasing waste production

Ans: b) By conserving resources and reducing landfill waste

3. What benefit does composting organic waste provide in garbage management?

a) Generating hazardous waste

b) Creating landfills

c) Producing nutrient-rich compost for natural fertilizers

d) Encouraging waste segregation

Ans: c) Producing nutrient-rich compost for natural fertilizers

4. Why is proper disposal of hazardous waste crucial in garbage management?

a) To encourage environmental contamination

b) To increase the negative impact of waste on human health

c) To prevent environmental contamination and protect ecosystems

d) To mix hazardous waste with regular waste

Ans: c) To prevent environmental contamination and protect ecosystems

5. What are some components of garbage management?

a) Creating landfills and increasing waste production

b) Composting organic waste and recycling

c) Mixing hazardous waste with regular waste

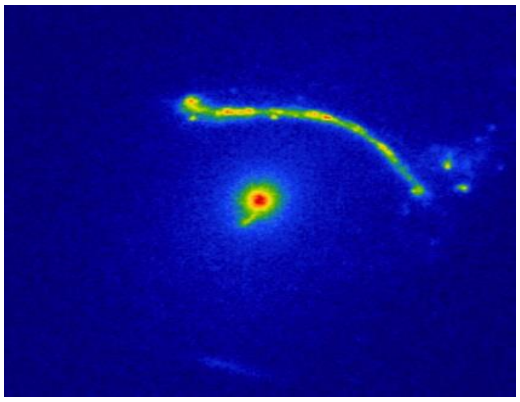
d) Collecting waste randomly without any system

Ans: b) Composting organic waste and recycling

Latest Discovery

The identification of an "ultramassive" black hole at the centre of the galaxy Abell 1201 BCG marks a significant milestone in the field of astronomy. "Ultramassive" black holes are exceptionally rare and intriguing objects, with masses much larger than typical black holes.

The use of gravitational lensing to confirm its existence adds another layer of importance to the discovery. This discovery provides valuable insights into the formation and evolution of supermassive black holes in the centres of galaxies, and it contributes to our understanding of the universe's most enigmatic entities. Further studies on this ultramassive black hole and its host galaxy Abell 1201 BCG will undoubtedly deepen our knowledge of the cosmos and its mysterious phenomena.



1. What is the name of the galaxy where the "ultramassive" black hole was found?

a) Abell 1201 BCG

b) Milky Way

c) Andromeda

d) The Black Hole Galaxy

Answer: a) Abell 1201 BCG

2. How are "ultramassive" black holes different from typical black holes?

a) They have smaller masses.

b) They are exceptionally rare and intriguing objects with larger masses.

c) They are not found at the centers of galaxies.

d) They have no gravitational effects.

Answer: b) They are exceptionally rare and intriguing objects with larger masses.

3. What is gravitational lensing used for in this discovery?

a) Confirming the existence of galaxies.

b) Observing the formation of stars.

c) Confirming the existence of the "ultramassive" black hole.

d) Observing distant planets.

Answer: c) Confirming the existence of the "ultramassive" black hole.

4. What did astronomers discover at the center of the galaxy Abell 1201 BCG?

a) An ultramassive black hole

b) A regular black hole

c) A galaxy cluster

d) A supermassive star

Answer: a) An ultramassive black hole

5. How did astronomers confirm the existence of the ultramassive black hole?

a) Through gravitational lensing

b) By using telescopes

c) By studying the stars around it

d) By sending a spacecraft

Answer: a) Through gravitational lensing

Earth And Universe

Universe

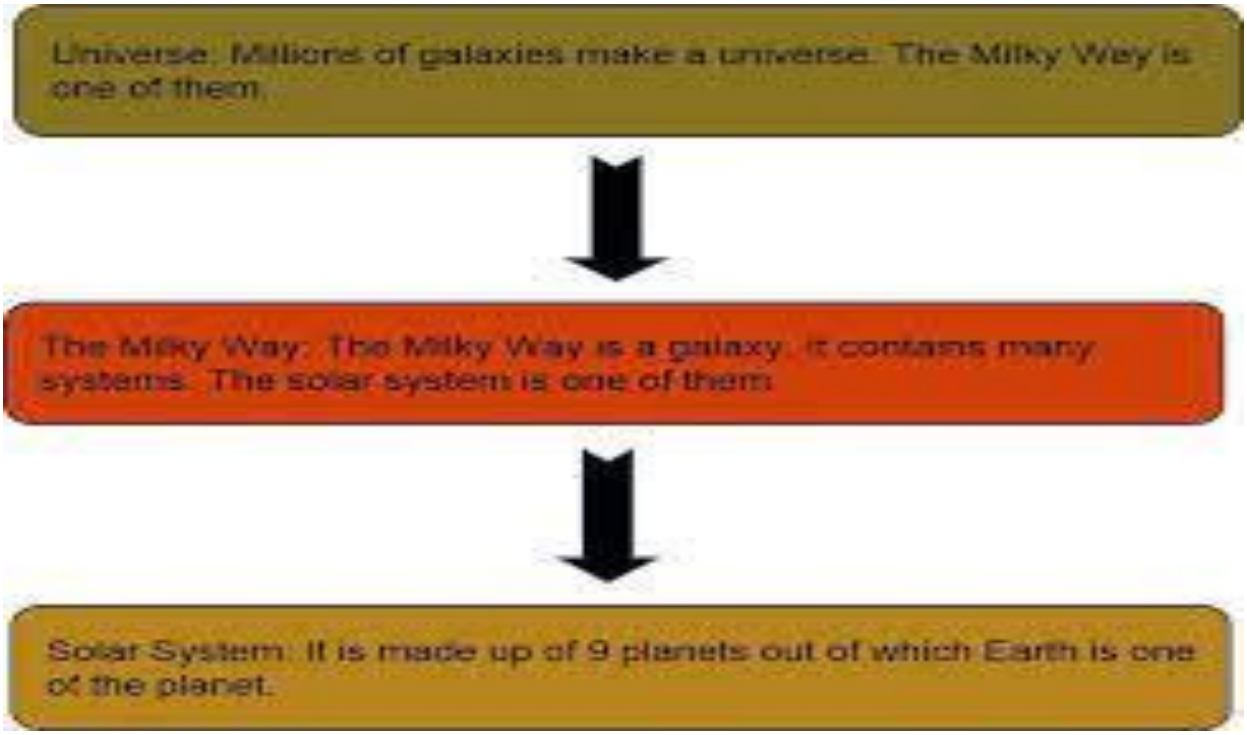
There are millions of galaxies in the Universe. Scientists say that the Big Bang theory is responsible for creating the universe.

Earth

Only the Earth is able to sustain life in the solar system. The following are some fantastic Earth facts that everyone should know:

- The Earth is the third most massive planet in the solar system and the fifth largest from the sun.
- 70% of the Earth's surface is covered by water.
- Earth rotates around an axis tilted at about 23.5 degrees. This tilt is why the Earth hardly ever touches the ground.
- We have four seasons that are 23.5 degrees.
- Earth is estimated to be 4.5 to 4.6 billion years old, and the oldest known living organism is estimated to be 3.9 billion years old.

- Plate tectonics exist only on Earth. Plate tectonics refers to areas of floating magma on top of the surface of a planet. The plates can move against one another.
- There are small flattened areas at the north and south poles of the Earth, which isn't a perfect sphere.
- In actuality, it is an oblate spheroid whose central portion bulges out due to the rotation of Earth.
- Earth's interior is about 6000 degrees Celsius.



- Our universe began with an explosion of space itself - the Big Bang. Starting from extremely high density and temperature, space expanded, the universe cooled, and the simplest elements formed. Gravity gradually drew matter together to form the first stars and the first galaxies.

- The Solar System is the gravitationally bound system of the Sun and the objects that orbit it. The largest of such objects are the eight planets, in order from the Sun: four terrestrial planets named Mercury, Venus, Earth and Mars, two gas giants named Jupiter and Saturn, and two ice giants named Uranus and Neptune.
- **Dwarf planet**, body, other than a natural satellite (moon), that orbits the Sun and that is, for practical purposes, smaller than the planet .
- Currently, five *dwarf planets*, namely Ceres, Pluto, Eris, Haumea, and Makemake, have been discovered.
- Astronomers Identify the Coldest Star Yet That Emits Radio Waves. July 13, 2023 — Brown dwarf stars rarely emit radio waves. Here scientists have found the coldest star yet emitting at these long wave lengths. Understanding the science of 'ultracool brown dwarfs'.
- One of this week's two new planets is TOI-700 e, a second planet in that system's habitable zone that shows how NASA's TESS is finding smaller and smaller worlds.
- The Milky Way is the Galaxy in which we live. It is a spiral shaped galaxy that contains several hundred billion stars, including our Sun. It is about 100,000 light-years across and about 10,000 light-years thick.

10 Interesting facts about the Milky Way galaxy:-

- The Milky Way Is (Mostly) Flat.
- Earth Is 18 Galactic Years Old.
- There's a Monster Black Hole in the Galaxy's Middle.
- The Milky Way Won't Live Forever.
- Our Sun Is One Star Among Several Hundred Billion.
- We're surrounded by a Dark Halo.
- We Hang Out With Ancient Stars.
- The Galaxy Is an Island in a Stream of Stars.

Practice Questions

1) Select the correct statement from the following.
   a) Milky way is the only spiral shaped galaxy in universe.
   b) Planet venus is the hottest planet of our solar system.
   c) Satellites like moon are small heavenly bodies that revolve around a star.
   d) A solar year consists of 363 days.

2) What is the main reason that some planet on the earth are warmer than others?
   a) The sun is closer to some places than other.
   b) The sun stays above the horizon 24 hours a day in some places.
   c) The rays of the sun are more direct at some places and more slanting at others.
   d) Some places experience warm season because of underground heat.

3) At the time of formation of solar system ,sun was formed at ____.
   a) The centre
   b) The left corner
   c) The right corner
   d) None of these

4) The radiant energy of the sun is transmitted in the form of _____.
   a) Short waves
   b) Long waves
   c) Particles
   d) None of these.

5) The only planet whose period of rotation is longer than the period of revolution around the sun?
   a) Mercury
   b) Jupiter
   c) Venus
   d) Neptune

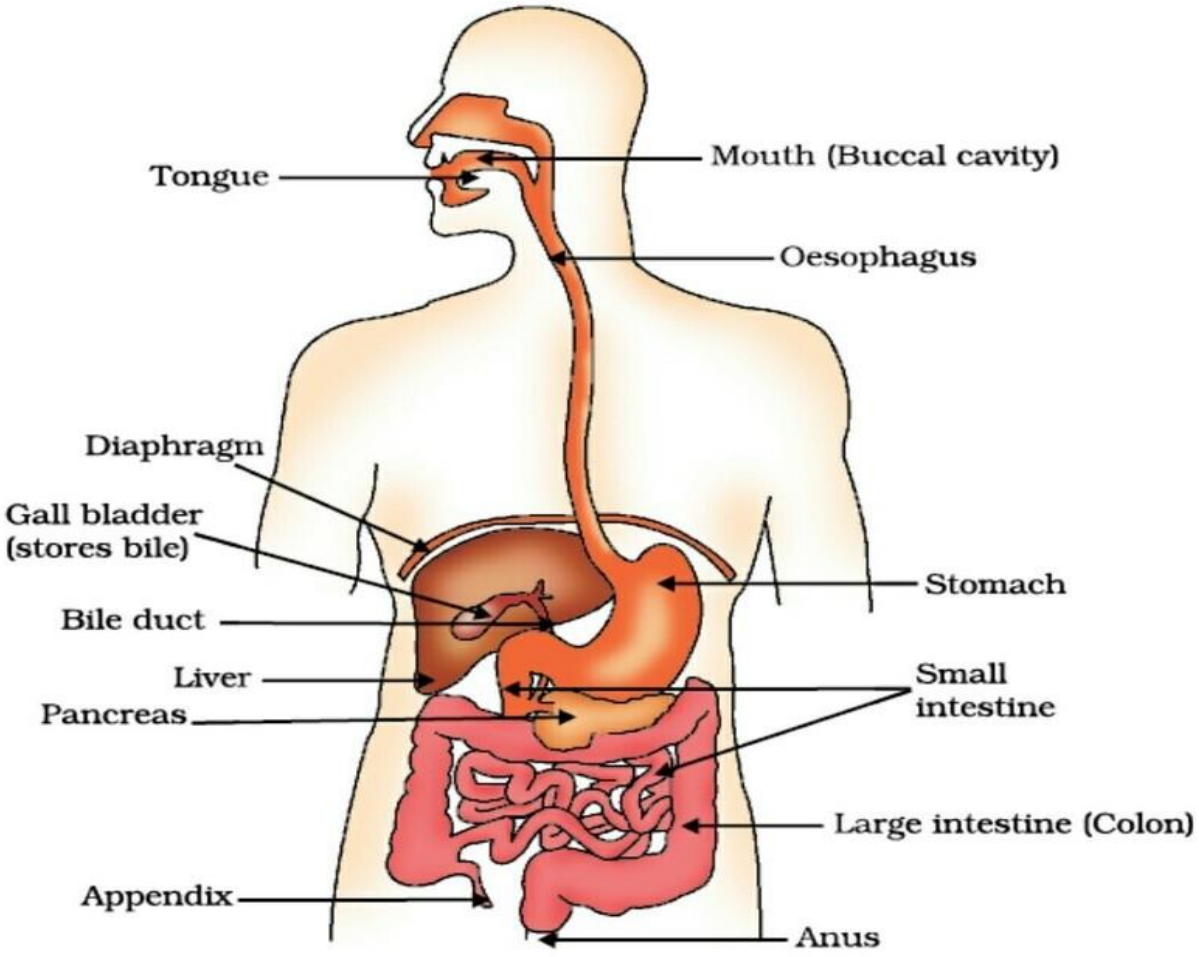
Answer Key

1	2	3	4	5
b	c	a	a	c

Organ System

Digestive System

The digestive system is a remarkable and complex network of organs and processes that allows our bodies to break down and absorb nutrients from the food we eat. It plays a vital role in providing the necessary energy and nutrients for our overall well-being.



The digestive system is responsible for processing food and converting it into essential nutrients, which our bodies can absorb and utilize.

It comprises a series of organs and structures working together to ensure proper digestion and absorption of nutrients.

Organs of the Digestive System

Mouth

The first stage of digestion occurs in the mouth.Teeth break down food into smaller pieces through chewing.Saliva contains enzymes that begin the digestion of carbohydrates.

Oesophagus / Food Pipe

A muscular tube connecting the mouth to the stomach.The food travels down the oesophagus through a rhythmic movement called peristalsis.

Stomach

The stomach is a muscular organ that further breaks down the food through mixing and churning. Gastric juices, including hydrochloric acid and enzymes, start the digestion of proteins.

Small Intestine

The majority of digestion and nutrient absorption take place in the small intestine.The liver and pancreas release digestive enzymes to break down fats, proteins, and carbohydrates.The inner lining of the small intestine has finger-like projections called villi, which increase surface area for nutrient absorption.

Liver

The liver produces bile, which aids in the digestion and absorption of fats.

It also plays a vital role in detoxification and nutrient storage.

Pancreas

The pancreas produces digestive enzymes and hormones like insulin, which regulate blood sugar levels.

Large Intestine (Colon)

The remaining undigested food and waste products move into the large intestine.

Importance of a Healthy Digestive System

A well-functioning digestive system is crucial for overall health and energy levels.It ensures that essential nutrients, vitamins, and minerals are absorbed for proper body functioning.

Tips for Maintaining a Healthy Digestive System

Eat a balanced diet with fibre-rich foods.Stay hydrated by drinking enough water.Chew food thoroughly to aid digestion.Avoid overeating and large, heavy meals.Engage in regular physical activity to promote digestion.

Practice Questions

1. What is the primary function of the digestive system?
A) Absorption of water and elimination of waste
B) Breaking down and absorbing nutrients from food
C) Pumping blood throughout the body
D) Producing hormones for growth and development

Answer: B) Breaking down and absorbing nutrients from food

2. Where does the first stage of digestion occur?
A) Stomach
B) Small intestine
C) Liver
D) Mouth
Answer: D) Mouth

3. Which of the following organs releases digestive enzymes and regulates blood sugar levels?
A) Liver
B) Pancreas
C) Stomach
D) Oesophagus
Answer: B) Pancreas

4. What is the rhythmic movement that pushes food down the oesophagus called?
A) Metabolism
B) Peristalsis
C) Circulation
D) Filtration
Answer: B) Peristalsis

5. What can individuals do to maintain a healthy digestive system?
A) Consume a balanced diet with plenty of fibre-rich foods
B) Limit water intake to improve digestion
C) Avoid physical activity to conserve energy
D) Eat large, heavy meals to feel full for longer periods
Answer: A) Consume a balanced diet with plenty of fibre-rich foods

Recent Developments In Science And Technology

Science and technology have been constantly changing and improving to make our lives better and more exciting. Let's take a look.

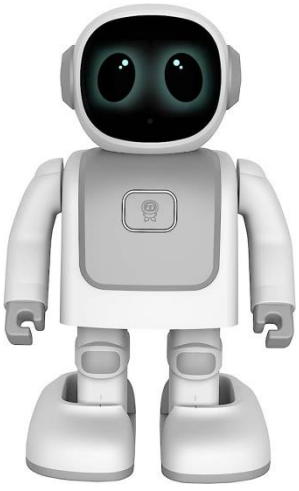
1. **Incredible Robots and AI:**
   Robots are amazing machines that can do anything with the help of Artificial Intelligence (AI). Scientists have made robots that can help us

with house chores, explore new places, and even assist doctors in surgeries.

2. **Clean Energy for the Future:**
   Scientists are working hard to find cleaner and safer ways to generate energy. They have invented solar panels, wind turbines to produce electricity and to greener our future.
3. **Space Exploration:**
   Space exploration is sending people or machineries into space to visit and inspect other planets and objects. Crewed missions to Mars and the Moon are in planning stage and they also predicted lives on surface of Mars by sending satellites and special rovers.
4. **Amazing Medical Progress:**
   Science has made great progress in medicine, helping doctors treat illnesses and make us healthier. Scientists are also working on creating new organs using 3D printing technology to help sick people get better faster.
5. **Super-Fast Internet:**
   The internet has made the world a smaller place! It lets us talk to people who live far away, learn new things, and play fun games.
6. **Electric Cars and Transportation:**
   The cars that do not need gasoline to run, instead they use electricity, which is much better for the environment.

Science and Technologies are always changing. There are many discoveries waiting, by learning about them we can dream big.

Wind Turbine



Robot

Practice Questions

1. Robots are used to help –
   a. Doctors b. Cricketer c. Gardeners

Ans: a.

2. Solar panel will help to crate

a. Plenty of light b. Greenery. c. Global warming

Ans : b.

3. Satellites are predict to discover-

a. Adventurous journey. b. Moonlight. c. Presence of life.

Ans: c.

4. Example of a clean energy for future would be –

a. Greenery. b. Wind turbines. c. Wind energy.

Ans: c.

5. 3D printing technology will help to –

a. Scene medicine. b. Sick people getting better. c. Doctors to operate.

Ans: b.

General Knowledge

Abbreviations and Acronyms

Sl.	Short form	Full form
1.	**AICTE**	All India Council Of Technical Education.
2.	**ASEAN**	Association Of South East Asian Nations.
3.	**BARC**	Bhabha Atomic Research Centre.
4.	**BHEL**	Bharat Heavy Electricals Ltd.
5.	**BIMSTEC**	Bangladesh, India, Myanmar, Srilanka, Thailand Economic Cooperation
6.	**CAG**	Comptroller and Auditor General Of India.
7.	**CBDT**	Central Board Of Direct Taxes.
8.	**DNA**	Deoxyribo-nucliec Acid
9.	**DTP**	Desktop Publishing
10.	**FIR**	First Information Report
11.	**GATE**	Graduate Aptitude Test in Engineering

12.	**GSLV**	Geo-Synchronous Satellite Launch Vehicle
13.	**GSM**	Global System for Mobile Communications
14.	**IPC**	Indian Penal Code
15.	**LASER**	Light Amplification by Stimulated Emmission of Radiation
16.	**NABARD**	National Bank for Agriculture and Rural Development.
17.	**NATO**	North Atlantic Treaty Organization.
18.	**ONGC**	Oil and Natural Gas Corporation.
19.	**SEBI**	Securities and Exchange Board of India.
20.	**WWW**	World Wide Web

Books and Authors

Sl.	**Book**	**Author**
1.	**Akbarnama**	AbulFazal
2.	**Chitra**	RabindraNath Tagore
3.	**Gitanjali**	RabindraNath Tagore
4.	**Godan**	Prem Chand
5.	**Guide**	R K Narayan
6.	**Hamlet**	William Shakespare
7.	**Harvest**	ManjulaPadmanabhan
8.	**Jungle Book**	Rudyard Kipling
9.	**Saket**	Maithili Sharan Gupta
10.	**The Dairy of a Young Girl**	Anne Frank

Important dates and days

Sl.	**Date**	**Event**
1.	**30 January**	Martyr's Day
2.	**22 March**	World Day for Water
3.	**7 April**	World Health Day
4.	**22 April**	Earth Day

5.	**11 July**	World Population Day
6.	**29 August**	National Sports Day
7.	**15 September**	Engineer's Day
8.	**27 September**	World Tourism Day
9.	**9 October**	World Post Day
10	**16 October**	World Food Day

Important awards and honors.

Sl.	Awards	Concerned Field
1.	**Bhartaiya Jnanpith Award**	Literary Award for Indian Languages
2.	**Sahitya Akademi Award**	Outstanding Literary Contribution
3.	**Saraswati Samman**	Outstanding Literary Contribution
4.	**Kalinga Prize**	Popularising Science
5.	**Dada Saheb Phalke Award**	Film
6.	**TulsiSamman**	Traditional and folk arts.
7.	**Arjuna Award**	Sports
8.	**Dronacharya Award**	Coaches to different games
9.	**Booker Prize**	Novels in English
10	**Roman Magsaysay Award**	Outstanding Contribution to Public Services.
11.	**Bharat Ratna**	Highest Civilian Award
12.	**Padma Awards**	Civilian Award
13.	**Param Vir Chakra**	India's Highest Military honour
14.	**Ashoka Chakra**	Peace Time military decoration award
15.	**Shaurya Chakra**	Third most prestigious peace time award
16.	**Kirti Chakra**	Second highest peace time gallantry award
17.	**Maha Vir Chakra**	War time award

Scientific Instruments and Uses

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

Union Territories of India

S.No.	Name of Union Territory
1	Ladakh
2	Jammu & Kashmir
3	Puducherry
4	Lakshadweep
5	Delhi
6	Chandigarh
7	Dadra and Nagar Haveli
8	Daman and Diu
9	Andaman and Nicobar Islands

States of India

S. No.	States	Capital
1	Andhra Pradesh	Amaravati
2	Arunachal Pradesh	Itaganar
3	Assam	Dispur
4	Bihar	Patna
5	Chhattisgarh	Raipur
6	Goa	Panaji
7	Gujarat	Gandhinagar
8	Haryana	Chandigarh
9	Himachal Pradesh	Shimla
10	Jharkhand	Ranchi
11	Karnataka	Bengaluru
12	Kerala	Trivandrum
13	Madhya Pradesh	Bhopal
14	Maharashtra	Mumbai
15	Manipur	Imphal
16	Meghalaya	Shillong
17	Mizoram	Aizawl
18	Nagaland	Kohima
19	Odisha	Bhubneshwar
20	Punjab	Chandigarh
21	Rajasthan	Jaipur
22	Sikkim	Gangtok
23	Tamil Nadu	Chennai
24	Telangana	Hyderabad
25	Tripura	Agartala
26	Uttar Pradesh	Lucknow
27	Uttarakhand	Dehradun
28	West Bengal	Kolkata

Important rivers in India

S. No.	Name of rivers	Touching States	Origin
1	Ganga	Uttrakhand, Uttar Pradesh, Bihar, Jharkhand, West Bengal.	Gangothri
2	Yamuna	Uttrakhand, Himachal Pradesh, Uttar Pradesh, Haryana, Delhi.	Garhwal in Yamunotri
3	Brahmaputra	Assam, Arunachal Pradesh, Tibet.	Lake Mansarovar
4	Mahanadi	Chhattisgarh, Odisha.	Amarkantak Plateau
5	Godavari	Maharashtra, Telangana, Chhattisgarh, Andra Pradesh, Puducherry.	Nasik Hills
6	Krishna	Maharashtra, Karnataka, Telangana, Andhra Pradesh.	Near Mahabaleshwar in Maharashtra
7	Narmada	Madhya Pradesh, Maharashtra, Gujarat.	Amarkantak Hills in Madhya Pradesh
8	Tapti	Madhya Pradesh, Maharashtra, Gujarat.	Bettul
9	Gomati	Uttar Pradesh, Gujarat.	Gomat Taal
10	Koshi	Bihar	Ganga

Historical Monuments of India

Sr. No.	Name of the Monument	State in which it is
1	Shalimar Garden	Jammu & Kashmir
2	Ajanta and Ellora Caves	Maharashtra
3	Victoria Memorial	Kolkata
4	Gateway of India	Maharashtra
5	City Palace	Udaipur,Rajasthan
6	Amber Fort	Jaipur, Rajasthan
7	Laxmi Vilas Palace	Vadodara, Gujarat
8	Mehrangarh Fort	Jodhpur, Rajasthan
9	Howrah Bridge	Kolkata, West Bengak

11	Nalanda University	Nalanda,Bihar
12	Shaniwar Wada	Pune, Maharashtra
13	Bara Imambara	Lucknow, Uttar Pradesh
14	Bastar Palace	Bastar,Chhattisgarh
15	Bhoramdeo Temple	Chhattisgarh

Practice Questions

Q.1. Who was the first woman Prime Minister of India?

(a) Mrs. Indira Gandhi (b) Mrs. Sonia Gandhi

(c) Mrs. Pratibha Patil (d) Mrs. Droupadi Murmu

Q.2. Who was the first Prime Minister of India?

(a) Dr. Rajendra Prasad (b)Morarji Desai

(c)Rajiv Gandhi (d)Pandit Jawahar Lal Nehru

Q.3. Which mission ISRO launched on 14th July 2023?

(a)Chandrayaan - 1 (b) Chandrayaan - 2

(c) Chandrayaan - 3 (d) Chandrayaan – 4

Q.4.Which is the famous folk dance of Chhattisgarh?

(a)Panthi Dance (b)Garba

(c)Dandiya (d)Kathak

Q.5. Which state is the largest state in terms of area in India?

(a)Goa (b)Bihar

(c)Maharashtra (d)Rajasthan

Answer Key

1	2	3	4	5
a	d	c	a	d