

# General Studies

Presented By

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# Semester - I

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# QUANTITATIVE APTITUDE

## BASIC CONCEPT

### I. NUMBERS

In Hindu-Arabic system, we have ten digits, namely 0,1,2,3,4,5,6,7,8 and 9.

A number is denoted by a group of digits, called **numeral**

For denoting a numeral, we use the place-value chart, given below.

	Ten Crores	Crores	Ten Lakhs	Lakhs	Ten Thousands	Thousands	Hundreds	Tens	Ones
(i)				5	2	8	6	7	9
(ii)			4	3	8	0	9	6	7
(iii)	3	5	2	1	8	0	0	9	
(iv)	5	6	1	3	0	7	0	9	0

The four numbers shown above may be written in words as:

1. Five lakh twenty-eight thousand six hundred seventy-nine
2. Forty-three lakh eighty thousand nine hundred sixty-seven
3. Three crore fifty-two lakh eighteen thousand nine
4. Fifty-six core thirteen lakh seven thousand ninety

Now, suppose we are given the following four numerals in words:

1. Nine crore four lakh six thousand two
2. Twelve crore seven lakh nine thousand two hundred seven
3. Four lakh four thousand forty
4. Twenty-one crore sixty lakh five thousand fourteen

Then, using the place-value chart, these may be written in figures as under:

	Ten Crores	Crores	Ten Lakhs	Lakhs	Ten Thousands	Thousands	Hundreds	Tens	Ones
(i)		9	0	4	0	6	0	0	2
(ii)	1	2	0	7	0	9	2	0	7
(iii)				4	0	4	0	4	0
(iv)	2	1	6	0	0	5	0	1	4

### II. FACE VALUE AND PLACE VALUE (OR LOCAL VALUE) OF A DIGIT IN A NUMERAL

1. The face value of a digit in a numeral is its own value, at whatever place it may be.

**Example :** In the numeral 6872, the face value of 2 is 2, the face value of 7 is 7, the value of 8 is 8 and the face value of 6 is 6

2. In a given numeral:

Place value of ones digit = (ones digit) $\times 1$

Place value of tens digit = (tens digit) $\times 10$

Place value of hundreds digit = (hundreds digit) $\times 100$  and so on

**Example :** In the numeral 70984, we have

Place value of 4 =  $(4 \times 1) = 4$

Place value of 8 =  $(8 \times 10) = 80$

Place value of 9 =  $(9 \times 100) = 900$

Place value of 7 =  $(7 \times 10000) = 70000$

**Note:** Place value of 0 in a given numeral is 0, at whatever place it may be.

### III. VARIOUS TYPES OF NUMBERS

**1. Natural Numbers :** Counting numbers are called natural numbers. Thus, 1,2,3,4,.....are all natural numbers.

**2. Whole Numbers:** All counting numbers, together with 0, form the set of whole numbers. Thus, 0,1,2,3,4,.....are all whole numbers.

**3. Integers:** All counting numbers, zero and negatives of counting numbers, form the set of integers. Thus,.....,3,-2,-1,0,1,2,3,.....are all integers.

Set of positive integers = {1,2,3,4,5,6,.....}

Set of negative integers = {-1,-2,-3,-4,-5,-6,.....}

Set of non-negative integers = {0,1,2,3,4,5,.....}

**4. Even Numbers :** A counting number divisible by 2 is called an even number.  
Thus, 0,2,4,6,8,10,12,.....etc. are all even numbers

**5. Odd Numbers :** A counting number not divisible by 2 is called an odd number. Thus, 1,3,5,7,9,11,13,.....etc. are all odd numbers

**6. Prime Numbers :** A counting number is called a prime number if it has exactly two factors, namely itself and 1.

**Example:** All prime numbers less than 100 are:  
 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97

**7. Composite Numbers:** All counting numbers which are not prime, are called composite numbers.

**8. Perfect Numbers :** A number, the sum of whose factors (except the number itself), is equal to the number is called a perfect number, e.g. 6, 28, 496.

The factors of 6 are 1, 2, 3 and 6. And,  $1 + 2 + 3 = 6$ .

The factors of 28 are 1, 2, 4, 7, 14 and 28. And,  $1 + 2 + 4 + 7 + 14 = 28$

**9. Co-primes (or Relative Primes) :** Two numbers whose H.C.F is 1 are called co-prime numbers.

**Example:** (2, 3), (8, 9) are pairs of co-primes.

**10. Twin Primes:** Two prime numbers whose difference is 2 are called twin-primes.

**Example :** (3, 5), (5, 7), (11, 13) are pairs of twin-primes.

**11. Rational Numbers :** Numbers which

can be expressed in the form  $\frac{p}{q}$ , where p and q are integers and  $q \neq 0$ , are called rational numbers.

**Example:**  $\frac{1}{8}, \frac{-8}{11}, 0, 6, 5 \frac{2}{3}$  etc.

**12. Irrational Numbers :** Numbers which when expressed in decimal would be in non-terminating and non-repeating form, are called irrational numbers.

**Example:**

$\sqrt{2}, \sqrt{3}, \sqrt{5}, \sqrt{7}, \pi, e, 0.231764735\ldots$

#### IV. IMPORTANT FACTS

1. All natural numbers are whole numbers.

2. All whole numbers are not natural numbers. 0 is a whole number which is not a natural number.

3. Even number + Even number = Even number

Odd number + Odd number = Even number

Even Number + Odd number = odd number

Even number – Even number = Even number

Odd number – Odd number = Even number

Even number – Odd number = Odd number

Odd number – Even number = Odd number

Even number × Even number = Even number

Odd number × Odd number = Odd number

Even number × Odd number = Even number

4. The smallest prime number is 2

5. The only even prime number is 2

6. The first odd prime number is 3

7. 1 is a unique number–neither prime nor composite

8. The least composite number is 4

9. The least odd composite number is 9

10. Test for a Number to be Prime:

Let p to be given number and let n be the smallest counting number such

that  $n^2 \geq p$ .

Now, test whether p is divisible by any of the prime numbers less than or equal to n. If yes, then p is not prime otherwise, p is prime.

**Example:** Test, which of the following are prime numbers?

(i) 137    (ii) 173    (iii) 319    (iv) 437

(v) 811

**Solution.:**

(i) We know that  $(12)^2 > 137$ .

Prime numbers less than 12 are 2, 3, 5, 7, 11.

Clearly, none of them divides 137.

$\therefore 137$  is a prime number

(ii) We know that  $(14)^2 > 173$

Prime numbers less than 14 are 2, 3, 5, 7, 11, 13

Clearly, none of them divides 173

$\therefore 173$  is a prime number

(iii) We know that  $(18)^2 > 319$

Prime numbers less than 18 are 2, 3, 5, 7, 11, 13, 17

Out of these prime numbers 11 divides 319 completely

$\therefore 319$  is not a prime number

(iv) We know that  $(21)^2 > 437$

Prime numbers less than 21 are 2, 3, 5, 7, 11, 13, 17, 19

Clearly 437 is divisible by 19

$\therefore 437$  is not a prime number

(v) We know that  $(30)^2 > 811$

Prime numbers less than 30. are 2, 3, 5, 7, 11, 13, 17, 19, 23, 29.

Clearly, none of these numbers divides 811.

$\therefore 811$  is a prime number.

#### V. IMPORTANT FORMULAE

1.  $(a + b)^2 = a^2 + b^2 + 2ab$
2.  $(a - b)^2 = a^2 + b^2 - 2ab$
3.  $(a + b)^2 + (a - b)^2 = 2(a^2 + b^2)$
4.  $(a + b)^2 - (a - b)^2 = 4ab$
5.  $(a + b)^3 = a^3 + b^3 + 3ab(a + b)$
6.  $(a - b)^3 = a^3 - b^3 - 3ab(a - b)$
7.  $a^2 - b^2 = (a + b)(a - b)$
8.  $(a + b + c)^2 = a^2 + b^2 + c^2 + 2(ab + bc + ca)$

$$9. a^3 + b^3 = (a + b)(a^2 + b^2 - ab)$$

$$10. a^3 - b^3 = (a - b)(a^2 + b^2 + ab)$$

$$11. a^3 + b^3 + c^3 - 3abc = (a + b + c)(a^2 + b^2 + c^2 - ab - bc - ca)$$

12. If  $a + b + c = 0$ , then

$$a^3 + b^3 + c^3 = 3abc$$

#### TEST OF DIVISIBILITY

1. **Divisibility By 2:** A number is divisible by 2 if its unit digit is any of 0, 2, 4, 6, 8

**Example :** 58694 is divisible by 2, while 86945 is not divisible by 2

2. **Divisibility By 3:** A number is divisible by 3 only when the sum of its digits is divisible by 3

**Example :**

O In the number 695421, the sum of digits = 27, which is divisible by 3  
 $\therefore 695421$  is divisible by 3

O In the number 948653, the sum of digits = 35, which is not divisible by 3  
 $\therefore 948653$  is not divisible by 3

3. **Divisibility By 9:** A number is divisible by 9 only when the sum of its digits is divisible by 9

**Example :**

O In the number 246591, the sum of

digits = 27, which is divisible by 9

$\therefore 246591$  is divisible by 9

O In the number 734519, the sum of digits = 29, which is not divisible by 9.  
 $\therefore 734519$  is not divisible by 9

4. **Divisibility By 4:** A number is divisible by 4 if the number formed by its last two digits is divisible by 4

**Example :**

O 6879376 is divisible by 4 since 76 is divisible by 4

O 496138 is not divisible by 4, since 38 is not divisible by 4

5. **Divisibility By 8:** A number is divisible by 8 if the number formed by its last three digits is divisible by 8

**Example :**

O In the number 16789352, the number formed by last 3 digits, namely 352 is divisible by 8.

$\therefore 16789352$  is divisible by 8

O In the number 576484, the number formed by last 3 digits, namely 484 is not divisible by 8.

$\therefore 576484$  is not divisible by 8

6. **Divisibility By 10:** A number is divisible by 10 only when its unit digit is 0

**Example :**

O 7849320 is divisible by 10, since its unit digit is 0

O 678405 is not divisible by 10, since its unit digit is not 0

7. **Divisibility By 5:** A number is divisible by 5 only when its unit digit is 0 or 5

**Example :**

O Each of the numbers 76895 and 68790 is divisible by 5

8. **Divisibility By 11:** A number is divisible by 11 if the difference between the sum of its digits at odd places and the sum of its digits at even places is either 0 or a number divisible by 11.

**Example :**

O Consider the number 29435417  
 $(\text{Sum of its digits at odd places}) - (\text{Sum of its digits at even places})$   
 $(7+4+3+9) - (1+5+4+2) = (23-12) = 11$ , which is divisible by 11.  
 $\therefore 29435417$  is divisible by 11

O Consider the number 57463822  
 $(\text{Sum of its digits at odd places}) - (\text{Sum of its digits at even places})$   
 $= (2+8+6+7) - (2+3+4+5) = (23-14) = 9$ , which is not divisible by 11  
 $\therefore 57463822$  is not divisible by 11

## **VI. MULTIPLICATION BY SHORTCUT METHODS**

1. Multiplication by Distributive Law:

$$(i) a \times (b + c) = a \times b + a \times c$$

$$(ii) a \times (b - c) = a \times b - a \times c$$

**Example:**

$$(i) 567958 \times 99999 =$$

$$= 567958 \times (100000 - 1)$$

$$= 567958 \times 100000 - 567958 \times 1$$

$$= (56795800000 - 567958) =$$

$$56795232042$$

$$(ii) 978 \times 184 + 978 \times 816$$

$$= 978 \times (184 + 816)$$

$$= 978 \times 1000 = 978000$$

## **VI. IMPORTANT FACTS**

1. (i)  $(x^n - a^n)$  is divisible by  $(x - a)$  for all values of n

(ii)  $(x^n - a^n)$  is divisible by  $(x + a)$  for all values of n

(iii)  $(x^n + a^n)$  is divisible by  $(x + a)$  for all odd values of n

2. To find the highest power of a prime number p is n!

Highest power of p in

$$n! = \left[ \frac{n}{p} \right] + \left[ \frac{n}{p^2} \right] + \left[ \frac{n}{p^3} \right] + \dots + \left[ \frac{n}{p^r} \right],$$

where  $p^r \leq n < p^{r+1}$

## **SOLVED EXAMPLES**

1. What value will replace the question mark in each of the following questions?

$$(i) 1936248 = 1635773$$

$$(ii) 9587 - ? = 7429 - 4358$$

**Solution:**

(i) Let  $x - 1936248 = 1635773$ . Then,  
 $x = 1635773 + 1936248 = 3572021$

1	2
5	P 9
3	R 7
2	Q 8
1	1 1 4

$$(ii) \text{Let } 9587 - x = 7429 - 4358.$$

$$\text{Then, } 9587 - x = 3071 \Rightarrow x = 9587 - 3071 = 6516$$

2. What could be the maximum value of Q in the following equation?

$$5P9 + 3R7 + 28 = 1114$$

**Solution:**

We may analyse the given equation as shown :

Clearly,  $2 + P + R + Q = 11$

So, the maximum value of Q can be  $(11 - 2)$ , i.e. 9 (when  $P = 0, R = 0$ ).

3. Simply : (i)  $5793405 \times 9999$

$$(ii) 839478 \times 625$$

**Solution:**

$$(i) 5793405 \times 9999 = 5793405 \times (10000 - 1) \\ = 57934050000 - 5793405 \\ = 57928256595$$

$$(ii) 839478 \times 625 = 839478 \times 5^4 = 839478$$

$$\times \left( \frac{10}{2} \right)^4 = \frac{839478 \times 10^4}{2^4} = \frac{8394780000}{16} \\ = 524673750$$

4. Evaluate : (i)  $986 \times 137 + 986 \times 863$

$$(ii) 983 \times 207 - 983 \times 107$$

**Solution:**

$$(i) 986 \times 137 + 863 = 986 \times (137 + 863) = 986 \times 1000 = 986000.$$

$$(ii) 983 \times 207 - 983 \times 107 = 983 \times (207 - 107) = 983 \times 100 = 98300.$$

5. Simplify (i)  $1605 \times 1605$

$$(ii) 1398 \times 1398$$

**Solution:**

$$(i) 1605 \times 1605 = (1605)^2 \\ = (1600 + 5)^2 = (1600)^2 + 5^2 + 2 \times 1600 \times 5 \\ 2560000 + 25 + 16000 = 2576025.$$

$$(ii) 1398 \times 1398 = (1398)^2$$

$$= (1400 - 2)^2 = (1400)^2$$

$$+ 2^2 - 2 \times 1400 \times 2$$

$$= 1960000 + 4 - 5600 = 1954404.$$

6. Evaluate : (i)  $475 \times 475 + 125 \times 125$

$$(ii) 796 \times 796 - 204 \times 204$$

**Solution:** (i) We have

$$(a^2 + b^2) = \frac{1}{2} [(a + b)^2 + (a - b)^2]$$

$$\begin{aligned} \therefore (475)^2 + (125)^2 &= \frac{1}{2} \\ &\quad [(475+125)^2 + (475-125)^2] \\ &= \frac{1}{2} \cdot [(600)^2 + (350)^2] \\ &= \frac{1}{2} \cdot [360000 + 122500] \\ &= \frac{1}{2} \times 482500 = 241250 \end{aligned}$$

$$\begin{aligned} (\text{i}) \quad 796 \times 796 - 204 \times 204 &= \\ (796)^2 - (204)^2 &= (796 + 204)(796 \\ - 204) \\ &= (1000 \times 592) = 592000 \end{aligned}$$

7. Simplify : (i)  $(387 \times 387 + 113 \times 113 + 2 \times 87 \times 61)$

$$(\text{ii}) \quad (87 \times 87 + 61 \times 61 - 2 \times 87 \times 61)$$

**Solution :** (i) Given Exp.

$$\begin{aligned} &= (387)^2 + (113)^2 + 2 \times 387 \times 113 = \\ &\quad (a^2 + b^2 + 2ab), \text{ where } a = 387 \text{ and } b \\ &= 113 \\ &= (a + b)^2 = (387 + 113)^2 = (500)^2 \\ &= 250000. \end{aligned}$$

$$\begin{aligned} (\text{ii}) \quad \text{Given Exp.} &= (87)^2 + (61)^2 - 2 \\ &\quad \times 87 \times 61 = (a^2 + b^2 - 2ab), \text{ where} \\ &\quad a = 87 \text{ and } b = 61 \\ &= (a - b)^2 = (87 \times 61)^2 = (26)^2 = \\ &\quad + 6^2 + 2 \times 20 \times 6 = (400 + 36 + 240) \\ &= 436 + 240 = 676 \end{aligned}$$

8. Find the square root of  $4a^2 + b^2 + c^2 + 4ab - 2bc - 4ac$

**Solution :**

$$\begin{aligned} &\sqrt{4a^2 + b^2 + c^2 + 4ab - 2bc - 4ac} \\ &= \sqrt{(2a)^2 + b^2 + (-c)^2 + 2 \times 2a \times b} \\ &\quad \sqrt{(2a)^2 + b^2 + (-c)^2 + 2 \times 2a \times b \times (-c) + \\ &\quad 2 \times (2a) \times (-c)} \\ &= \sqrt{(2a + b - c)^2} = (2a + b - c). \end{aligned}$$

9. A is counting the numbers from 1 to 31 and B from 31 to 1. A is counting the odd numbers only. The speed of both is the same. What will be the number which will be pronounced by A and B together?

Sol. The numbers pronounced by A and B in order are :

A	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31
B	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16

Clearly both A and B pronounce the number 21 together.

10. Simplify :

$$(\text{i}) \frac{789 \times 789 \times 789 + 211 \times 211 \times 211}{789 \times 789 - 789 \times 211 + 211 \times 211}$$

$$(\text{ii}) \frac{658 \times 658 \times 658 - 328 \times 328 \times 328}{658 \times 658 + 658 \times 328 + 328 \times 328}$$

**Solution:** (i) Given Exp.

$$\begin{aligned} &\frac{(789)^2 - (789 \times 211) + (211)^2}{(789)^2 + (211)^3} \\ &= \frac{a^3 + b^3}{a^2 - ab + b^2} \text{ (where } a = 789 \text{ and} \\ &b = 211 \\ &= (a + b) = (789 + 211) = 1000. \end{aligned}$$

- (ii) Given Exp.

$$\begin{aligned} &= \frac{(658)^3 - (328)^3}{(658)^2 + (658 \times 328) + (328)^2} \\ &= \frac{a^3 - b^3}{a^2 + ab + b^2} \text{ (where } a = 658 \text{ and } b = 328) \end{aligned}$$

$$11. \text{ Simplify : } \frac{(893 + 786)^2 - (893 - 786)^2}{(893 \times 786)}$$

**Solution:** Given Exp. =  $\frac{(a + b)^2 - (a - b)^2}{ab}$

$$\text{(where } a = 893, b = 786) = \frac{4ab}{ab} = 4$$

12. Which of the following are prime numbers?

- (i) 241 (ii) 337 (iii) 391 (iv) 571

**Solution:** (i) Clearly,  $16 > \sqrt{241}$ .

Prime numbers less than 16 are 2, 3, 5, 7, 11, 13.

241 is not divisible by any of them.

$\therefore 241$  is a prime number.

- (ii) Clearly,  $19 > \sqrt{337}$ . Prime numbers less than 19 are 2, 3, 5, 7, 11, 13, 17, 19. 337 is not divisible by any one of them.  
 $\therefore 337$  is a prime number.
- (iii) Clearly,  $20 > \sqrt{391}$ . Prime numbers less than 20 are 2, 3, 5, 7, 11, 13, 17, 19. We find that 391 is divisible by 17.  
 $\therefore 391$  is not a prime number.
- (iv) Clearly,  $24 > \sqrt{571}$ . Prime numbers less than 24 are 2, 3, 5, 7, 11, 13, 17, 19, 23. 571 is not divisible by any one of them.  
 $\therefore 571$  is a prime number.
13. If  $\Delta$  stands for the operation ‘adding first number to twice the second number’, then find the value of  $(1 \Delta 2) \Delta 3$ .
- Solution :**  $(1 \Delta 2) \Delta 3 = (1 + 2 \times 2) \Delta 3 = 5 \Delta 3 = 5 + 2 \times 3 = 5 + 6 = 11$ .
14. Given that  $1^2 + 2^2 + 3^2 + \dots + 10^2 = 385$ , then find the value of  $2^2 + 4^2 + 6^2 + \dots + 20^2$ .
- Solution :**  $2^2 + 4^2 + 6^2 + \dots + 20^2 = 2^2(1^2 + 2^2 + 3^2 + \dots + 10^2) = 2^2 \times 385 = 4 \times 385 = 1540$ .
15. Which of the following numbers is divisible by 3?
- (i) 541326      (ii) 5967013
- Solution :**
- (i) Sum of digits in 541326 =  $(5 + 4 + 1 + 3 + 2 + 6) = 21$ , which is divisible by 3. Hence, 541326 is divisible by 3.
  - (ii) Sum of digits in 5967013 =  $(5 + 9 + 6 + 7 + 0 + 1 + 3) = 31$ , which is not divisible by 3.
- Hence, 5967013 is not divisible by 3.
16. What least value must be assigned to \* so that the number 197\*5462 is divisible by 9?
- Solution :** Let the missing digit be x.  
Sum of digits =  $(1 + 9 + 7 + x + 5 + 4 + 6 + 2) = (34 + x)$ .  
For  $(34 + x)$  to be divisible by 9, x must be replaced by 2.
- Hence, the digit in place of \* must be 2.
17. Which of the following numbers is divisible by 4?
- (i) 67920594      (ii) 618703572
- Solution :**
- (i) The number formed by the last two digits in the given number is 94, which is not divisible by 4. Hence, 67920594 is not divisible by 4.
  - (ii) The number formed by the last two digits in the given number is 72, which is divisible by 4. Hence, 618703572 is divisible by 4.
18. Which digits should come in place of \* and \$ if the number 62684\* \$ is divisible by both 8 and 5?
- Solution :**  
Since the given number is divisible by 5, so 0 or 5 must come in place of \$. But, a number ending with 5 is never divisible by 8. So, 0 will replace \$.  
Now, the number formed by the last three digits is 4\*0, which becomes divisible by 8, if \* is replaced by 4.  
Hence, digits in place of \* and \$ are 4 and 0 respectively.
19. Show that 4832718 is divisible by 11.
- Solution :** (Sum of digits at odd places) – (Sum of digits at even places) =  $(8 + 7 + 3 + 4) - (1 + 2 + 8) = 11$ , which is divisible by 11.  
Hence, 4832718 is divisible by 11.
20. Is 52563744 divisible by 24?
- Solution :**  $24 = 3 \times 8$ , where 3 and 8 are co-primes.  
The sum of the divits in the given number is 36, which is divisible by 3. So, the given number is divisible by 3.  
The number formed by the last 3 digits of the given number is 744, which is divisible by 8. So, the given number is divisible by 8. Thus, the given number is divisible by both 3 and 8, where 3 and 8 are co-primes.  
So, it is divisible by  $3 \times 8$ , i.e. 24.
21. What are the values of M and N respectively if M39048458N is divisible by both 8 and 11, where M and N are single-digit integers?

**Solution :**

Since the given number is divisible by 8, it is obvious that the number formed by the last three digits, i.e. 58N is divisible by 8, which is possible only when N = 4.

Now, (sum of digits at even places) – (sum of digits at odd places)

$$= (8 + 4 + 4 + 9 + M) - (4 + 5 + 8 + 9 + 3)$$

$$= (25 + M) - 20 = M + 5, \text{ which must be divisible by 11.}$$

$$\text{So, } M = 6.$$

$$\text{Hence, } M = 6, N = 4.$$

22. Find the number of digits in the smallest number which is made up of digits 1 and 0 only and is divisible by 225.

**Solution :**

$225 = 9 \times 25$ , where 9 and 25 are co-primes.

Clearly, a number is divisible by 225 if it is divisible by both 9 and 25.

Now, a number is divisible by 9 if the sum of its digits is divisible by 9 and a number is divisible by 25 if the number formed by the last two digits is divisible by 25.

∴ The smallest number which is made up of digits 1 and 0 and divisible by 225 = 11111111100.

Hence, number of digits = 11.

23. If the number 3422213pq is divisible by 99, find the missing digits p and q.

**Solution:**  $99 = 9 \times 11$ , where 9 and 11 are co-primes.

Clearly, a number is divisible by 99 if it is divisible by both 9 and 11.

Since the number is divisible by 9, we have:

$(3 + 4 + 2 + 2 + 2 + 1 + 3 + p + q) = \text{a multiple of 9.}$

$$\Rightarrow 17 + (p + q) = 18 \text{ or } 27$$

$$\Rightarrow p + q = 1 \quad \dots \text{(i)}$$

Since the number is divisible by 11, we have:

$(q + 3 + 2 + 2 + 3) - (q + 1 + 2 + 4) = 0$  or a multiple of 11.

$$\Rightarrow (10 + q) - (7 + q) = 0 \text{ or } 11$$

$$\Rightarrow 3 + (q - p) = 0 \text{ or } 11$$

$$\Rightarrow q - p = -3$$

$$\Rightarrow p - q = 3 \quad \dots \text{(iii)}$$

$$\text{or } q - p = 8$$

$$\text{or } q - p = 8 \quad \dots \text{(iv)}$$

Clearly, if (i) holds, then neither (iii) or (iv) holds. So, (i) does not hold.

Also, solving (ii) and (iii) together, we get :  $p = 6.5$ , which is not possible.

Solving (ii) and (iv) together, we get :  $p = 1$ ,  $q = 9$ .

24. x is a positive integer such that  $x^2 + 12$  is exactly divisible by x. Find all the possible values of x.

**Solution :**  $\frac{x^2 + 12}{x} = \frac{x^2}{x} + \frac{12}{x} = x + \frac{12}{x}$

Clearly, 12 must be completely divisible by x.

So, the possible values of x are 1, 2, 3, 4, 6 and 12.

25. Find the smallest number to be added to 1000 so that 45 divides the sum exactly.

Sol. On dividing 1000 by 45, we get 10 as remainder.

$$\therefore \text{Number to be added} = (45 - 10) = 35.$$

26. What least number must be subtracted from 2000 to get a number exactly divisible by 17?

**Solution :**

On dividing 2000 by 17, we get 11 as remainder.

$$\therefore \text{Required number to be subtracted} = 11.$$

27. Find the number which is nearest to 3105 and is exactly divisible by 21.

**Solution :**

On dividing 3105 by 21, we get 18 as remainder.

$$\therefore \text{number to be added to 3105} = (21 - 18) = 3.$$

$$\text{Hence required number} = 3105 + 3 = 3108.$$

28. Find the smallest number of five digits which is exactly divisible by 476

**Solution :** Smallest number of 5 digits = 10000.

On dividing 10000 by 476, we get 4 as remainder.

$$\therefore \text{Number to be added} = (476 - 4) = 472.$$

$$\text{Hence, required number} = 10472.$$

29. Find the greatest number of five digits which is exactly divisible by 47.

**Solution :** Greatest number of 5 digits is 99999.

On dividing 99999 by 47, we get 30 as remainder.

∴ Required number =  $(99999 - 30) = 99969$ .

$$\begin{array}{r} 42735 \\ 13 \overline{)555555} \\ \underline{52} \\ 35 \\ \underline{26} \\ 95 \\ \underline{91} \\ 45 \\ \underline{39} \\ 65 \\ \underline{65} \\ \underline{x} \end{array}$$

30. When a certain number is multiplied by 13, the product consists entirely of fives. Find the smallest such number

**Solution :** Clearly, we keep on dividing 55555....by 13 till we get 0 as remainder.

∴ Required number = 42735.

$$\begin{array}{r} 12345679 \\ 18 \overline{)222222222} \\ \underline{18} \\ 42 \\ \underline{36} \\ 62 \\ \underline{54} \\ 82 \\ \underline{72} \\ 102 \\ \underline{90} \\ 122 \\ \underline{108} \\ \underline{142} \\ \underline{126} \\ 162 \\ \underline{162} \\ \underline{x} \end{array}$$

31. When a certain number is multiplied by 18, the product consists entirely of 2's. What is the minimum number of 2's in the product?

**Solution :** We keep on dividing 22222.....by 18 till we get 0 as remainder.

32. Find the smallest number which when multiplied by 9 gives the product as 1 followed by a certain number of 7s only.

**Solution :** The least number having 1 followed by 7s, which is divisible by 9, is 177777, as  $1 + 7 + 7 + 7 + 7 + 7 = 36$  (which is divisible by 9).

∴ Required number =  $177777 \div 9 = 19753$ .

33. What is the unit's digit in the product?

$$81 \times 82 \times 83 \times \dots \dots \times 89?$$

**Solution :** Required unit's digit = Unit's in the product  $1 \times 2 \times 3 \times \dots \dots \times 9 = 0$   
 $[\because 2 \times 5 = 10]$

34. Find the unit's digit in the product

$$(2467)^{153} \times (341)^{72}.$$

**Solution :** Clearly, unit's digit in the given product = unit's digit in  $7^{153} \times 1^{72}$

Now,  $7^4$  gives unit digit 1.

∴  $7^{152}$  gives unit digit 1.

∴  $7^{153}$  gives unit digit  $(1 \times 7) = 7$ . Also,

$1^{72}$  gives unit digit 1.

Hence, unit digit in the product =  $(7 \times 1) = 7$ .

35. Simplify :

$$10\frac{1}{2} - \left[ 8\frac{1}{2} + \left\{ 7 - \overline{6-4} \right\} \overline{6-4} \right] = 2(v)$$

- (1) -3      (2) -2      (3) 1      (4) 4

- (5) None of these

**Solution. (1) :**

$$\begin{aligned} x &= 10\frac{1}{2} - \left[ 8\frac{1}{2} + (7-2) \right] \\ &= 10\frac{1}{2} - \left[ 8\frac{1}{2} + 5 \right] \end{aligned}$$

$$= 10\frac{1}{2} - 13\frac{1}{2} = -3$$

36.  $44.60 \times 2.50 = ?$

- (1) 11.15      (2) 1.115

- (3) 1115      (4) 0.1115

- (5) None of these

**Solution. (5) :**  $44.60 \times 2.50 = ?$

Putting x for (?) we get

$$x = 44.60 \times 2.50x = 44.60 \times \frac{10}{4}$$

$$(\text{Since } 2.50 = \frac{10}{4})$$

$$x = 11.15 \times 10$$

$$x = 111.5$$

37.  $54 \div 66 \div 33 = ?$

- (1)  $\frac{1}{121}$       (2)  $\frac{2}{121}$  (c)  $\frac{3}{121}$  (3)  $\frac{4}{121}$

- (5) None of these

**Solution. (3) :**  $54 \div 66 \div 33 = ?$

$$\frac{54}{66} \div 33$$

$$= \frac{9}{11} \div 33 = \frac{9}{11} \times \frac{1}{33} = \frac{3}{121}$$

38. If  $3x + 7 = x^2 + P = 7x + 5$ , what is the value of P

(1)  $\frac{1}{2}$       (2)  $8\frac{1}{4}$       (3)  $8\frac{1}{2}$

(4) Can't be determined  
(5) None of these

**Solution. (2) :**

$$3x + 7 = 7x + 5 \Rightarrow 7x - 3x = 2 \Rightarrow$$

$$4x = 2 \Rightarrow x = \frac{1}{2}$$

$$\text{Now, } 3x + 7 = x^2 + P \Rightarrow \frac{3}{2} + 7 = \frac{1}{4} + P$$

$$\Rightarrow P = \frac{33}{4} = 8\frac{1}{4}$$

39. If  $2 = x + 1 + \frac{\frac{1}{1}}{3 + \frac{1}{4}}$  then the value of x is

(1)  $\frac{12}{17}$       (2)  $\frac{13}{17}$       (3)  $\frac{18}{17}$       (4)  $\frac{21}{17}$

(5) None of these

**Solution. (4) :**

$$x = 2 - \frac{1}{1 + \frac{4}{13}} = 2 - \frac{1}{(17/13)}$$

$$= 2 - \frac{13}{17} = \frac{21}{17}$$

$$\frac{1}{2} \div \frac{1}{2} \text{ of } \frac{1}{2}$$

40. The value of  $\frac{\frac{1}{2} + \frac{1}{2} \text{ of } \frac{1}{2}}{2 + \frac{1}{2} \text{ of } \frac{1}{2}}$  is

(1)  $1\frac{1}{2}$       (2) 2      (3)  $2\frac{2}{3}$       (4) 3

(5) None of these

**Solution. (3) :**

$$\frac{\frac{1}{2} \div \frac{1}{4}}{\frac{1}{2} + \frac{1}{4}} = \frac{\frac{1}{2} \times 4}{\frac{2+1}{4}} = 2 \times \frac{4}{3} = \frac{8}{3} = 2\frac{2}{3}$$

41.  $\left(2\frac{1}{3}\right) + \left(1\frac{3}{4}\right)$  is equal to

(1)  $\frac{7}{14}$       (2)  $\frac{12}{49}$       (3)  $4\frac{1}{12}$       (4)  $12\frac{1}{4}$

(5) None of these

**Solution. (5) :**

$$42. \frac{2}{3} - \frac{\frac{1}{2} - \frac{1}{3}}{\frac{1}{2} + \frac{1}{3}} \times 3\frac{1}{3} + \frac{5}{6} = ?$$

(1)  $\frac{7}{18}$       (2)  $\frac{5}{3}$       (3)  $\frac{2}{3}$       (4)  $\frac{23}{63}$

(5) None of these

**Solution. (3) :**

$$= \frac{3}{4} \div \frac{9}{4} \text{ of } \frac{2}{3} - \frac{\left(\frac{3-2}{6}\right)}{\frac{3+2}{6}} \times \frac{10}{3} + \frac{5}{6}$$

$$= \frac{3}{4} \div \frac{3}{2} - \frac{1}{6} \times \frac{6}{5} \times \frac{10}{3} + \frac{5}{6}$$

$$= \frac{3}{4} \times \frac{2}{3} - \frac{2}{3} + \frac{5}{6} = \left(\frac{1}{2} - \frac{2}{3} + \frac{5}{6}\right)$$

$$= \left(\frac{3-4+5}{6}\right) = \frac{4}{6} = \frac{2}{3}$$

43. Simplify :

$$\frac{\frac{1}{3} + \frac{3}{4} \left( \frac{3}{2} - \frac{1}{3} \right)}{1\frac{2}{3} \text{ of } \frac{3}{4} - \frac{1}{4} \text{ of } \frac{4}{5}}$$

(1)  $\frac{1}{63}$       (2)  $\frac{23}{40}$       (3)  $\frac{23}{55}$       (4)  $\frac{23}{63}$

(5) None of these

**Solution. (4) :**

$$\frac{\frac{1}{3} + \frac{3}{4} \left( \frac{6-5}{15} \right)}{\frac{5}{3} \times \frac{3}{4} - \frac{1}{4} \times \frac{4}{5}} = \frac{\frac{1}{3} + \frac{3}{60}}{\frac{5}{4} - \frac{1}{5}} = \frac{\frac{20+3}{60}}{\frac{25-4}{20}}$$

$$= \frac{23}{60} \times \frac{20}{21} = \frac{23}{63}$$

44.  $0.2 + 0.2 - 0.2 \div 0.2 \times (0.2 \times 0.2)$ , on simplification, gives

(1) 0.04      (2) 0.2      (3) 0.36      (4) 1

(5) None of these

**Solution. (3) :**

$$= 0.2 + 0.2 - 1 \times 0.04 = 0.4 - 0.04 = 0.36$$

45.  $2176 \times 316 = ?$

(1) 687616      (2) 768661

(3) 687166      (4) 786166

(5) None of these

**Solution :**  $2176 \times 316 = 687616$

46.  $2164 \div 4 \times 3 = ?$

(1) 1632      (2) 1623      (3) 1263      (4) 2163

(5) None of these

**Solution. (2) :**  $\frac{2164}{4} \times 3 = 1623$

47.  $4 + 44 + 444 + 4444 + 44444 = ?$

- (1) 49308      (2) 49380

- (3) 40398      (4) 49083

- (5) None of these

**Solution. (2) :**  $12345 \times 4 = 49380$

48.  $23.70 + 87.87 + 63.37 = ?$

- (1) 174.49      (2) 174.94

- (3) 170.49      (4) 174.40

- (5) None of these

**Solution. (2) :**  $23.70 + 87.87 + 63.37 = 174.94$

49.  $4\frac{1}{2} \times 4\frac{1}{3} - 8\frac{1}{3} \div 5\frac{2}{3} = ?$

- (1)  $\frac{7}{17}$       (2)  $\frac{33}{34}$       (3) 8      (4)  $18\frac{1}{34}$

- (5) None of these

**Solution. (4) :**

$$\frac{9}{2} \times \frac{13}{3} - \frac{25}{3} \div \frac{17}{3} = \frac{9}{2} \times \frac{13}{3} - \frac{25}{3} \times \frac{3}{17}$$

$$= \frac{39}{2} - \frac{25}{17} = \frac{663 - 50}{34} = \frac{613}{34} = 18\frac{1}{34}$$

50.  $8\frac{1}{4} - 4\frac{1}{5} + 2.8 + \frac{4}{?} - 2.32 = 5.33$

- (1) 0.05      (2) 0.5      (3) 5      (4) 1

- (5) None of these

**Solution. (3) :** Let

$$8.25 - 4.20 + 2.8 + \frac{4}{x} - 2.32 = 5.33$$

Then,

$$\frac{4}{x} (5.33 + 4.20 + 2.32) - (8.25 + 2.8)$$

$$\Leftrightarrow x = \frac{4}{0.80} = \frac{40}{8} = 5$$

51. If  $(2a + 3b)(2c - 3d) = (2a - 3b)(2c + 3d)$  then

(1)  $\frac{a}{b} = \frac{c}{d}$

(2)  $\frac{a}{d} = \frac{c}{b}$

(3)  $\frac{a}{b} = \frac{d}{c}$

(4)  $\frac{b}{a} = \frac{c}{d}$

- (5) None of these

**Solution. (1) :** If  $(2a+3b)(2c-3d) = (2a-3b)(2c+3d)$

$$\frac{(2a + 3b)}{2a - 3b} = \frac{(2c + 3d)}{(2c - 3d)}$$

$$4ac - 6ad + 6bc - 9bd = 4ac + 6ad - 6bc - 9bd$$

$$12bc = 12ad$$

$$\frac{a}{b} = \frac{c}{d}$$

52. The value of

$$0.008 \times 0.01 \times 0.0072 \div (0.12 \times 0.0004) \text{ is :}$$

- (1) 0.012      (2) 0.12      (3) 1.02      (4) 1.2

- (5) None of these

**Solution. (1) :**

$$= 0.008 \times 0.01 \times 0.0072 \div 0.000048$$

$$= 0.00008 \times \frac{0.0072}{0.000048} = \frac{8}{48} \times \frac{72}{1000}$$

$$= 0.012$$

53. If  $\frac{a}{3} = \frac{b}{4} = \frac{c}{7}$ , then the value of

$$\frac{a+b+c}{c}$$
 is

$$(1) \frac{1}{\sqrt{7}} \quad (2) \sqrt{2} \quad (3) 2 \quad (4) 7$$

- (5) None of these

**Solution. (3) :**  $\frac{a}{3} = \frac{b}{4} = \frac{c}{7} = k$  (say)

Then,  $a = 3k \times b = 4k, c = 7k$

$$\frac{a+b+c}{c} = \frac{3k+4k+7k}{7k} = \frac{14k}{7k} = 2$$

54. Find the sum:

$$\frac{1}{2} + \frac{1}{6} + \frac{1}{12} + \frac{1}{20} + \frac{1}{30} + \frac{1}{42} +$$

$$\frac{1}{56} + \frac{1}{72} + \frac{1}{90} + \frac{1}{110} + \frac{1}{132}$$

$$(1) \frac{7}{8} \quad (2) \frac{11}{12} \quad (3) \frac{15}{16} \quad (4) \frac{17}{18}$$

- (5) None of these

**Solution. (2) :**

$$= \left(1 - \frac{1}{2}\right) + \left(\frac{1}{2} - \frac{1}{3}\right) + \left(\frac{1}{3} - \frac{1}{4}\right) + \left(\frac{1}{4} - \frac{1}{5}\right) +$$

$$\dots + \left(\frac{1}{11} - \frac{1}{12}\right) = \left(1 - \frac{1}{12}\right) = \frac{11}{12}$$

55.  $\left(\frac{?}{18}\right) \times \left(\frac{?}{162}\right) = 1$

- (1) 9      (2) 18      (3) 54      (4) 36

- (5) None of these

**Solution. (3) :**  $\left(\frac{?}{18}\right) \times \left(\frac{?}{162}\right) = 1$

Putting x for (?) and solving it for x,  
we get

$$\frac{x}{18} \times \frac{x}{162} = 1$$

$$x^2 = 18 \times 162$$

$$x^2 = 18 \times 18 \times 9x = 18 \times 3$$

$$\therefore x = 54$$

56.  $\frac{0.1+0.75}{2.5+0.05} \div \left(0.125 + \frac{1}{4.8}\right) = ?$

- (1) 5      (2) 4      (3) 3      (4) 2  
(5) None of these

**Solution. (5) :**

$$\frac{0.1+0.75}{2.5+0.05} \div \left(0.125 + \frac{1}{4.8}\right) = ?$$

Putting x for (?)

$$\Rightarrow x = \frac{0.85}{2.55} \div \left(\frac{1}{8} + \frac{10}{48}\right) \Rightarrow x = \frac{1}{3} \div \left(\frac{16}{48}\right)$$

$$\Rightarrow x = 1$$

57.  $1 + \frac{1}{2} + \frac{1}{4} + \frac{1}{7} + \frac{1}{14} + \frac{1}{28}$  is equal to  
(1) 2      (2) 2.5      (3) 3      (4) 3.5  
(5) None of these

**Solution. (1) :**

$$\frac{28+14+7+4+2+1}{28} = \frac{56}{28} = 2$$

58. The simplified value of  $\frac{\frac{1}{3} \div \frac{1}{3} \times \frac{1}{3}}{\frac{1}{3} \div \frac{1}{3} \text{ of } \frac{1}{3}} - \frac{1}{9}$

- (1) 0      (2) 1/9      (3) 1/3      (4) 1  
(5) None of these

**Solution. (1) :**  $\frac{\frac{1}{3} \times 3 \times \frac{1}{3}}{\frac{1}{3} \div \frac{1}{9}} - \frac{1}{9} =$

$$\frac{\frac{1}{3}}{\frac{1}{3} \times 9} - \frac{1}{9} = \frac{1}{3} \times \frac{1}{3} - \frac{1}{9} = \frac{1}{9} - \frac{1}{9} = 0$$

59. When simplified, the product

$$\left(2 - \frac{1}{3}\right) \left(2 - \frac{2}{3}\right) \left(2 - \frac{5}{7}\right) \dots \left(2 - \frac{999}{1001}\right)$$

is equal to

(1)  $\frac{991}{1001}$       (2)  $\frac{1001}{13}$       (3)  $\frac{1003}{13}$

(4)  $\frac{100}{991}$       (5) None of these

**Solution. (5) :**  $= \frac{5}{3} \times \frac{7}{5} \times \frac{9}{7} \times \dots \times \frac{1003}{1001} = \frac{1003}{3}$

<b>Answers   QUANTITATIVE APTITUDE - [Quant Foundation-Solved Examples]</b>					
1. (i) 3572021 (ii) 6516	2. (9)	3. (i) 57928256595 (ii) 524673750	4. (i) 986000 (ii) 98300	5. (i) 2576025 (ii) 1954404	6. (i) 241250 (ii) 592000
7. (i) 250000 (ii) 676	8. $\sqrt{(2a+b-c)^2} = (2a+b-c)$	9. (21)	10. (i) 1000 (ii) a=658, b=328	11. (4)	12. (i) 241 (i) 337 (iii) 391 (iv) 571
13. (11)	14. (1540)	15. (i) 541326 (ii) 5967013	16. (2)	17. (i) 67920594 (ii) 618703572	18. (4,0)
19.	20. (24)	21. (M=6, N=4)	22. (ii)	23. p=1, q=9	24. 1,2,3,4,6 and 12
25. (35)	26. (11)	27. (3108)	28. (10472)	29. (99969)	30. (42735)
31. (0)	32. (19753)	33. (10)	34. (7)		
35. (1)	36. 5	37. (3)	38. (2)	39. (4)	40. (3)
41. (5)	42. (3)	43. (4)	44. (3)	45. (1)	46. (2)
47. (2)	48. (2)	49. (4)	50. (3)	51. (1)	52. (1)
53. (3)	54. (2)	55. (3)	56. (5)	57. (1)	58. (1)
59. (5)					

# PERCENTAGE

## BASIC CONCEPT

### PERCENTAGE

Percent implies “for every hundred”. In other words, a fraction with denominator 100 is called a per cent.

- Also the percentage is a value that represents the proportion of one number to another number.
- The sign % is read as percentage and  $x\%$  is read as  $x$  per cent.

### Why do we study percentage?

#### 1. To Know “how much” or “how many”.

A percentage value helps in calculating exactly what's the amount or figure one is talking about. For instance, let's say that Ravi is spending 60% of his salary; it implies that Ravi is spending Rs 60 for every Rs 100 he has been earning. So, how much Ravi is actually spending if salary is Rs 60000 per month?

We know that Ravi spends 60% of his salary. Replacing 60% by  $60/100$  for calculating the amount, therefore, the amount Ravi is spending =  $(60/100) \times 60000 = \text{Rs } 36,000$

#### 2. To compare fractions

Fractions can be converted into percentages to create a simple picture for the comparison. This is particularly useful when the denominator values of two fractions are not the same. For instance, Amar ate  $3/5$ th of a pizza and Dinesh ate  $5/8$ th of the other pizza of similar size. So, if we have to find who ate more, we need to compare by simply converting fractions into the percentage.

Amar ate  $(3/5) \times 100 = 60\%$  of the pizza. And Dinesh ate  $(5/8) \times 100 = 62.5\%$  of the pizza

As we convert the ratios into percentages, it becomes instantly clear that Dinesh ate more pizza than Amar.

#### 3. To Find the percentage increase or decrease

This application of using percentage is particularly important in analyzing or comparing performances and progress. The application particularly becomes even more

useful when the base criterion of comparison is different. For instance, let's say that in the mid-term exam, Rohit scored a total of 310 out of 500.

In the finals, he scored 430 out of 500. Clearly, the marks scored in the finals are higher than that scored in the mid-term exams. Therefore, there is an increment in the performance with the base value of 500.

$(\text{Change in the performance}/\text{The base value}) \times 100 \leq$  denotes the percentage change.

Here, the increment in the performance =  $430 - 310 = 120$ .

$$\therefore \text{Percentage increment} = (120/500) \times 100 = 24\%$$

Let's go through the formulas used in percentage:

1. To calculate  $p\%$  of  $y$ :  

$$(p/100) \times y = (p \times y)/100$$
  

$$p\% \text{ of } y = y\% \text{ of } p$$
2. To find what percentage of  $x$  is  $y$ :  

$$= y/x \times 100$$
3. To calculate percentage change in value  

$$\text{Percentage change} = \{\text{change}/(\text{initial value})\} \times 100$$
4. Percentage point change = Difference of two percentage figures.
5. Increase  $N$  by  $S\% = N(1 + S/100)$
6. Decrease  $N$  by  $S\% = N(1 - S/100)$
7. If A is  $R\%$  more than B, then B is less than A by =  $\{R/(100 + R) \times 100\}\%$
8. If A is  $R\%$  less than B, then B is more than A by =  $\{R/(100 - R) \times 100\}\%$
9. If the price of a commodity increases by  $P\%$ , then the reduction in consumption so as not to increase the expenditure is  $\{P/(100 + P) \times 100\}\%$
10. If the price of a commodity decreases by  $P\%$ , then the increase in consumption so as not to increase the expenditure is  $\{P/(100 - P) \times 100\}\%$
11. If there are two successive percentage increases of  $a\%$  and  $b\%$ , the effective percentage increase is:  

$$\{(a + b + (ab/100))\}\%$$

12. If there are two successive percentage decreases of a % and b%, the effective percentage decrease is:  

$$\{(-a - b + (ab/100))\%\}$$
13. If there is percentage increase and percentage decrease of a % and b % respectively, the effective percentage change is:  $\{(a - b - (ab/100))\%\}$
14. Percentage – Ratio Equivalence:

$1/3 \times 100 = 33.33\%$	$1/10 \times 100 = 10\%$
$1/4 \times 100 = 25\%$	$1/11 \times 100 = 9.09\%$
$1/5 \times 100 = 20\%$	$1/12 \times 100 = 8.33\%$
$1/6 \times 100 = 16.66\%$	$1/13 \times 100 = 7.69\%$
$1/7 \times 100 = 14.28\%$	$1/14 \times 100 = 7.14\%$
$1/8 \times 100 = 12.5\%$	$1/15 \times 100 = 6.66\%$
$1/9 \times 100 = 11.11\%$	$1/16 \times 100 = 6.25\%$

N is Numerator

D is the Denominator

15. Product Stability Ratio:

$$A \times B = P$$

If A is increased by a certain percentage, then B is required to be decreased by a certain percentage to keep the product P stable.

Expressing the percentage figures in ratios:

Change in A (INCREASE)	Change in B (DECREASE)	Change in P
$\frac{1}{1}$	$\frac{1}{2}$	0
$\frac{1}{2}$	$\frac{1}{3}$	0
$\frac{1}{3}$	$\frac{1}{4}$	0
$\frac{1}{4}$	$\frac{1}{5}$	0

16. Results on Population.

Let the population of a town be P now and suppose it increases at the rate of R% per annum, then:

- Population after n years =  $P (1 + R/100)^n$
- Population n years ago =  $P / (1 + R/100)^n$

17. Results on depreciation

Let the present value of a machine be P. Suppose it depreciates at the rate of R% per annum, then:

- Value of the machine after n years =  $P (1 - R/100)^n$
- Value of the machine n years ago =  $P / (1 - R/100)^n$

18. If a reduction of p % in the price of an article enables a person to buy y kg more for Rs R, then we can arrive at

the following results:

Reduced price=> Rp/100y per kg

Original prices per kg= Rp/(100-p)y per kg

Let's take some examples to understand percentage better :-

**Question 1:** When 75 is added to 75% of a number, the answer is the number. Find 40% of that number.

**Solution :** Let the number be p.

$$75\% \text{ of } p + 75 = p$$

$$\Rightarrow (75/100)p + 75 = p$$

$$\Rightarrow 75 = p - (75p/100)$$

$$\Rightarrow 75 = (25p/100)$$

$$\Rightarrow p = 75 \times 4 = 300$$

$$\therefore 40\% \text{ of } p = (40/100) \times 300 = 120.$$

**Question 2 :** A fruit seller had some apples. He sells 40% apples and still has 420 apples. Originally, he had

**Solution :** Let the fruit seller originally have y apples.

According to the question,

$$\text{Total apples} - \text{sold apples} = \text{left apples}$$

$$y - 40\% \text{ of } y = 420$$

$$y - (40/100)x y = 420$$

$$y - (2y/5) = 420$$

$$\{(5y - 2y)/5\} = 420$$

$$3y/5 = 420$$

$$y = (420 \times 5)/3 = 700$$

**Question 3 :** B got 20% marks less than A. What percent marks did A get more than B ?

**Solution :** Using the formula:

If a number is p % less than other number, then the other number is more than the first number by

$$\{p/(100-p)\} \times 100 \%$$

$$p = 20\%$$

$$\text{Required Percent} = \{(p/100 - p) \times 100\}$$

$$= \{20/(100 - 20)\} \times 100$$

$$= (20/80) \times 100 = 25\%$$

**Question 4 :** A's salary is increased by 10% and then decreased by 10%. The change in salary is

**Solution:** Percentage change formula when x is positive and y is negative=  $\{x - y - (xy/100)\}\%$

$$\text{Here, } x = 10, y = 10$$

$$= \{10 - 10 - (10 \times 10)/100\} = -1\%$$

As negative sign shows a decrease, hence the final salary is decreased by 1%.

**Question 5 :** If the numerator of a fraction is increased by 20% and the denominator is decreased by 5%, the value of the new fraction become  $5/2$ . The original fraction is:

**Solution :** Let original fraction be p/y

According to the question,

$$\{(120/100)p/(95/100)y\} = 5/2$$

$$120p/95y = 5/2$$

$$\Rightarrow p/y = (5/2) \times (95/120) = 95/48.$$

**Question 6 :** A reduction of 21% in the price of an item enables a person to buy 3 kg more for 100. The reduced price of item per kg is:

**Solution :** Reduced price will be:

$$Rp/100y \text{ per kg}$$

In our case R= Rs. 100, p=21%, y=3kg

$$\{(100 \times 21)/(100 \times 3)\} = \text{Rs. } 7$$

**Question 7 :** A vessel has 60 L of solution of acid and water having 80% acid. How much water is to be added to make it solution in which acid forms 60%?

**Solution:** Given, percentage of acid = 80%

Then, percentage of water = 20%

$$\text{In } 60\text{L of solution, water} = (60 \times 20)/100 = 12\text{L}$$

Let p liter of water is to be added.

According to the question,

$$\Rightarrow \{(12 + p)/(60 + p)\} \times 100 = 40 \quad (5^{\circ} \quad 100 - 60 = 40\% \text{ water})$$

$$\Rightarrow 1200 + 100p = 2400 + 40p$$

$$\Rightarrow 60p = 1200$$

$$p = 20\text{L}$$

**Question 8 :** Kishan spends 30% of his salary on food and donates 3% in a Charitable Trust. He spends Rs. 2310 on these two items, then total salary for that month is:

**Solution :** Let the salary of Kishan be Rs. p.

Total expenditure in percentage = 30+3 =33%

According to the question, 33% of p = Rs 2310

$$p = (2310 \times 100)/33 = \text{Rs. } 7000$$

**Question 9 :** Two numbers are less than a third number by 30% and 37%, respectively. The second number is less than the first by

**Solution :** Let the third number be 100.

So, first number = 70

First number = 63

$$\text{So, required percent} = \{(70 - 63)/70\} \times 100 = 10\%$$

**Question 10 :** The value of lathe machine depreciates at the rate of 10 % per annum. If the cost of machine at present is Rs. 160,000, then what will be its worth after 2 years?

**Solution :** Given,

Present amount = Rs. 1,60,000

Rate of depreciation = 10 %

Substituting the given values, we get

The value of machine after n years =  $P(1-R/100)^n$

$$1,60,000(1 - 10/100) = \text{Rs. } 129,600$$

I hope, your concept would have been cleared and you now evolve better understanding about it and will be able to solve questions on your

own. The above given combinations are just few types, there could many like that, you will get better hold of it if you practice them.

- Also the percentage is a value that represents the proportion of one number to another number.
- The sign % is read as percentage and x % is read as x per cent.

### Why do we study percentage?

1. To Know "how much" or "how many".

A percentage value helps in calculating exactly what's the amount or figure one is talking about. For instance, let's say that Ravi is spending 60% of his salary; it implies that Ravi is spending Rs 60 for every Rs 100 he has been earning. So, how much Ravi is actually spending if salary is Rs 60000 per month?

We know that Ravi spends 60% of his salary. Replacing 60% by 60/100 for calculating the amount, therefore, the amount Ravi is spending =  $(60/100) \times 60000 = \text{Rs } 36,000$

2. To compare fractions

Fractions can be converted into percentages to create a simple picture for the comparison. This is particularly useful when the denominator values of two fractions are not the same. For instance, Amar ate  $3/5$ th of a pizza and Dinesh ate  $5/8$ th of the other pizza of similar size. So, if we have to find who ate more, we need to compare by simply converting fractions into the percentage.

Amar ate  $(3/5) \times 100 = 60\%$  of the pizza. And Dinesh ate  $(5/8) \times 100 = 62.5\%$  of the pizza

As we convert the ratios into percentages, it becomes instantly clear that Dinesh ate more pizza than Amar.

3. To Find the percentage increase or decrease

This application of using percentage is particularly important in analyzing or comparing performances and progress. The application particularly becomes even more useful when the base criterion of comparison is different. For instance, let's say that in the mid-term exam, Rohit scored a total of 310 out of 500.

In the finals, he scored 430 out of 500. Clearly, the marks scored in the finals are higher than that scored in the mid-term exams. Therefore, there is an increment in the performance with the base value of 500.

$(\text{Change in the performance/The base value}) \times 100 \Leftarrow \text{denotes the percentage change}$

Here, the increment in the performance =  $430 - 310 = 120$ .

$$\therefore \text{Percentage increment} = (120/500) \times 100 = 24\%$$

### Let's go through the formulas used in percentage :-

1. To calculate p % of y:  
 $(p/100) \times y = (p \times y)/100$   
p% of y = y % of p
2. To find what percentage of x is y:  
 $= y/x \times 100$
3. To calculate percentage change in value  
Percentage change =  $\{\text{change}/(\text{initial value})\} \times 100$
4. Percentage point change = Difference of two percentage figures.
5. Increase N by S% =  $N(1 + S/100)$
6. Decrease N by S% =  $N(1 - S/100)$
7. If A is R% more than B, then B is less than A by =  $\{R/(100 + R) \times 100\}\%$
8. If A is R% less than B, then B is more than A by =  $\{R/(100 - R) \times 100\}\%$
9. If the price of a commodity increases by P%, then the reduction in consumption so as not to increase the expenditure is  $\{P/(100 + P) \times 100\}\%$
10. If the price of a commodity decreases by P%, then the increase in consumption so as not to increase the expenditure is  $\{P/(100 - P) \times 100\}\%$
11. If there are two successive percentage increases of a% and b%, the effective percentage increase is:  
 $\{(a + b + (ab/100))\%\}$

12. If there are two successive percentage decreases of a % and b%, the effective percentage decrease is:  
 $\{(-a - b + (ab/100))\%\}$

13. If there is percentage increase and percentage decrease of a % and b % respectively, the effective percentage change is:  
 $\{(a - b - (ab/100))\%\}$

14. Percentage – Ratio Equivalence:  
N is Numerator  
D is the Denominator

### 15. Results on Population.

Let the population of a town be P now and suppose it increases at the rate of R% per annum, then:

- Population after n years =  $P(1 + R/100)^n$
- Population n years ago =  $P / (1 + R/100)^n$

### 16. Results on depreciation

Let the present value of a machine be P. Suppose it depreciates at the rate of R% per annum, then:

- Value of the machine after n years =  $P(1 - R/100)^n$
- Value of the machine n years ago =  $P / (1 - R/100)^n$

17. If a reduction of p % in the price of an article enables a person to buy y kg more for Rs R, then we can arrive at the following results:

Reduced price =>  $R/(100 + p)y$  per kg  
Original price per kg =  $R/(100 - p)y$  per kg

## SOLVED EXAMPLES

### Mark (✓) against the correct answer:

1. A number reduced by 25% becomes 225. What percent should it be increased so that it becomes 390?  
(a) 22% (b) 30% (c) 10% (d) None

**Sol. (b) :** Let the number be x

Then,  $x - 25\% \text{ of } x = 225$

$$\Rightarrow x - \frac{25}{100}x = 225 \Rightarrow \frac{75}{100}x = 225$$

$$\Rightarrow x = \left( \frac{225 \times 100}{75} \right) = 300$$

$$\text{Required increase} = (300 - 225) = 90$$

$$\therefore \text{Increase \%} = \left( \frac{90}{300} \times 100 \right)\% = 30\%$$

2. The sum of two numbers is  $\frac{28}{25}$  of the first number. The second number is what percent of the first?  
(a) 12% (b) 10% (c) 25% (d) 30%

**Sol.(a) :** Let the number be x and y. Then,

$$x + y = \frac{28}{25}x \Leftrightarrow y = \frac{28}{25}x - x$$

$$\Leftrightarrow y = \frac{3}{25}x \Leftrightarrow \frac{y}{x} = \left( \frac{3}{25} \times 100 \right)\% = 12\%$$

3. What percent decrease in salaries would exactly cancel out the 20 percent increase?  
(a)  $16\frac{2}{3}\%$  (b) 10% (c)  $15\frac{2}{3}\%$  (d) None

**Sol.(a) :** Let original salary = Rs. 100. New salary = Rs. 120.

Decrease on 120 = 20

$$\text{Decrease on } 100 = \left( \frac{20}{120} \times 100 \right) \% = 16\frac{2}{3}\%$$

**Sol. (a) :** Let the number be x and y. Then,

$$x + y = \frac{28}{25}x \Leftrightarrow y = \frac{28}{25}x - x$$

$$\Leftrightarrow y = \frac{3}{25}x \Leftrightarrow \frac{y}{x} = \left( \frac{3}{25} \times 100 \right) \% = 12\%$$

4. The price of wheat falls by 16%. By what percentage a person can increase the consumption of wheat so that this overall budget does not change?

(a) 11% (b) 55% (c) 21% (d) 19%

**Sol.(d) :** Increasing in consumption

$$= \left[ \frac{R}{(100-R)} \times 100 \right] \%$$

$$= \left( \frac{16}{84} \times 100 \right) \%$$

$$= \frac{400}{21} \% = 19.04\% = 19\%$$

**Sol. (a) :** Let original salary = Rs. 100. New salary = Rs. 120.

Decrease on 120 = 20

$$\text{Decrease on } 100 = \left( \frac{20}{120} \times 100 \right) \% = 16\frac{2}{3}\%$$

5. A number is increased by 20% and then again by 20%. By what percent should the increased number be reduced so as to get back the original number?

- (a)  $11\frac{22}{10}\%$  (b)  $30\frac{5}{9}\%$   
 (c) 22% (d) 19%

**Sol.(b) :** Let original number = 100

New number = 120% of 120% of 100

$$= \left( \frac{120}{100} \times \frac{120}{100} \times 100 \right) = 144$$

Decrease on 144 = 44. Decrease on 100

$$= \left( \frac{44}{144} \times 100 \right) \% = 30\frac{5}{9}\%$$

6. How is  $\frac{3}{4}$  expressed as percentage?  
 (a) 70% (b) 5.5% (c) 75% (d) 65%

$$\text{Sol.(c) : } \frac{3}{4} = \left( \frac{3}{4} \times 100 \right) \% = 75\%$$

7. When expressed as a fraction 64% would mean  
 (a)  $16/25$  (b)  $13/10$  (c)  $3/14$  (d) None

$$\text{Sol.(a) : } 64\% = \frac{64}{100} = \frac{16}{25}$$

8. The ratio 5:4 expressed as a percent equals  
 (a) 75% (b) 100% (c) 79% (d) 125%

$$\text{Sol.(d) : } 5:4 = \frac{5}{4} = \left( \frac{5}{4} \times 100 \right) \% = 125\%$$

9. What percent of 88 is 33?  
 (a) 30.25% (b) 14.5%  
 (c) 35.39% (d) 37.5%

**Sol.(d) :** Required percentage

$$\left( \frac{33}{88} \times 100 \right) \% = \frac{75}{2} \% = 37.5\%$$

10. The following table gives the marks obtained by a student in the first and second semester examinations in four subjects in a given year.

Subjects	1st semester	2nd semester	Maximum Marks
Physics	35	30	50
Chemistry	30	25	50
Mathematics	65	45	100
Social Science	80	85	100

The aggregate percentage of marks obtained by the student in the given year is nearly

- (a) 33 (b) 55 (c) 60 (d) 66

**Sol.(d) :** Total marks obtained

$$= (35+30+30+25+65+45+80+85) = 395$$

Maximum marks =

$$(50 \times 2 + 50 \times 2 + 100 \times 2 + 100 \times 2) = 600$$

∴ Percentage of marks

$$= \left( \frac{395}{600} \times 100 \right) \% = 65.8\% = 66\%$$

11. 140% of 56+56% of 140%=?

- (a) 145.2% (b) 150.58%  
 (c) 156.8% (d) None

**Sol.(c) :** 140% of 56+56% of 140

$$= \left( \frac{140}{100} \times 56 \right) + \left( \frac{56}{100} \times 140 \right)$$

$$= 78.4 + 78.4 = 156.8$$

12. In a year, a man manages to sell only 65% of the chicken he owns. How many chicken should the man own to sell 47775 chicken in a year?  
 (a) 7300 (b) 73500 (c) 5500 (d) 7500

**Sol. (b) :** Let the required number of chicken be x

Then, 65% of x = 47775

$$\Rightarrow \frac{65}{100}x = 47775$$

$$\Rightarrow x = \frac{47775 \times 100}{65} = 73500$$

13. Antony got 76 percent marks and Sharmila got 480 marks in a test. The maximum marks of the test are equal to the marks obtained by Antony and Sharmila together. How many marks did Antony score in the test?  
 (a) 1200 (b) 1520 (c) 1540 (d) 1250

**Sol.(b) :** Let the maximum marks be x

Then, 76% of x + 480

$$= x \Rightarrow x - 76\% \text{ of } x = 480 \Rightarrow 24\% \text{ of } x = 480$$

$$\Rightarrow \frac{24x}{100} = 480 \Rightarrow x = \left( \frac{480 \times 100}{24} \right) = 2000$$

∴ Marks scored by Antony = 76% of 2000

$$= \left( \frac{76}{100} \times 2000 \right) = 1520$$

14. Two numbers A and B are such that the sum of 5% of A and 4% of B is two-thirds of the sum of 6% of A and 8% of B. Find the ratio of A : B?  
 (a) 2:5 (b) 1.5 (c) 3.4 (d) 4:3

**Sol.(d) :** 5% of A + 4% of

$$B = \frac{2}{3} (6\% \text{ of } A + 8\% \text{ of } B)$$

$$\Leftrightarrow \frac{5}{100} A + \frac{4}{100} B = \frac{2}{3} \left( \frac{6}{100} A + \frac{8}{100} B \right)$$

$$\Leftrightarrow \frac{1}{20} A + \frac{1}{25} B = \frac{1}{25} A + \frac{4}{75} B$$

$$\Leftrightarrow \left( \frac{1}{20} - \frac{1}{25} \right) A = \left( \frac{4}{75} - \frac{1}{25} \right) B$$

$$\Leftrightarrow \frac{1}{100} A = \frac{1}{75} B \Leftrightarrow \frac{A}{B} = \frac{100}{75} = \frac{4}{3}$$

15. 5 kg of tea and 8 kg of sugar together cost Rs. 172. The price of tea has risen by 20% and that of sugar by 10%. Hence the same quantities of tea and sugar now cost Rs. 199.20. What is the original price of tea per kg?  
 (a) Rs. 17 (b) Rs. 35  
 (c) Rs. 20 (d) Rs. 32

**Sol. (c) :** Let the original price of tea be Rs. x per kg and that of sugar be Rs. y per kg. Then,

$$5x + 8y = 172 \Leftrightarrow 15x + 24y = 516 \dots (i)$$

And,

$$120\% \text{ of } 5x + 110\% \text{ of } 8y = 199.20$$

$$\Rightarrow 600x + 880y = 19920 \Rightarrow 15x + 22y = 498 \dots (ii)$$

Subtracting (ii) from (i), we get  $2y = 18$   
 or  $y = 9$

Putting  $y = 9$  in (i) we get,  $x = 20$ .

16. The quantity of water (in ml.) needed to reduce 9 ml. shaving lotion containing 50% alcohol to a lotion containing 30% alcohol, is

(a) 9 (b) 6 (c) 8 (d) 10

17. Solve: 105.27% of 1200.11 + 11.80% of 2360.85 = 21.99%

(a) 250 (b) 154 (c) 550 (d) 650

**Sol.(b) :** Quantity of alcohol in 9 ml. lotion

$$= \left( \frac{50}{100} \times 9 \right) \text{ ml} = 4.5 \text{ ml}$$

Let the water to be added be x ml.

Then,

$$\frac{4.5}{9+x} = \frac{30}{100} \Leftrightarrow 270 + 30x = 450 \Leftrightarrow x = 6 \text{ ml.}$$

**Sol.(c) :** 105.27% of 1200.11 + 11.80% of 2360.85 = 21.99% of (?) + 1420.99

105% of 1200 + 12% of 2360

= 22% of (?) + 1421

$$\frac{105 \times 1200}{100} + \frac{12 \times 2360}{100} = \frac{22 \times ?}{100} + 1421$$

$$\text{Or, } \frac{22 \times (?)}{100} = 1260 + 283.20 - 1421$$

$$\Rightarrow \frac{22 \times (?)}{100} = 1543 - 1421 \Rightarrow \frac{22 \times (?)}{100} = 121$$

$$\therefore ? = \frac{122 \times 100}{22} = \frac{122 \times 50}{11} = \frac{6100}{11} = 554.5 = 550$$

18. 6 c.c of 20% solution of alcohol in water is mixed with 4 c.c of a 60% solution of alcohol in water. The alcoholic strength of the mixture is

(a) 36% (b) 56% (c) 33% (d) None

**Sol.(a) :** Quantity of alcohol in 10 c.c solution

$$= (20\% \text{ of } 6 + 60\% \text{ of } 4) \text{ c.c.}$$

$$= \left( \frac{20}{100} \times 6 + \frac{60}{100} \times 4 \right) \text{ c.c}$$

$$= (1.2 + 2.4) \text{ c.c} = 3.6 \text{ c.c}$$

∴ Required strength

$$= \left( \frac{3.6}{10} \times 100 \right) \% = 36\%$$

19. ? + 30.01% of 651 ÷ 25.05% of 59.98 = 135

(a) 122.6 (c) 155 (c) 1235.6 (d) 128.5

**Sol. (d) :** Given (?) + (30.01% of 651) ÷ (25.05% of 59.98) = 135

$$\Rightarrow (?) + (30\% \text{ of } 650) \div (25\% \text{ of } 60) = 135$$

$$\Rightarrow (?) + \left( \frac{30 \times 650}{100} \right) \div \left( \frac{25 \times 60}{100} \right) = 135$$

$$\Rightarrow (?) + (195 \div 15) = 135$$

$$\Rightarrow (?) + 13 = 135$$

$$\Rightarrow (?) + (135 - 13) = 122$$

20.  $(12\% \text{ of } 555) + (15\% \text{ of } 666) = ?$

- (a) 166.5      (b) 135.66  
(c) 155.65      (d) 140.58

**Sol.(a) :** Given 12% of 555+15% of 666

$$\Rightarrow (?) = \left( \frac{12}{100} \times 555 \right) + \left( \frac{15}{100} \times 666 \right)$$

$$(66.6 + 99.9) = 166.5$$

21. Solve:  $[180\% \text{ of } (?)] \div 2 = 504$

- (a) 350      (b) 450      (c) 560      (d) 500

**Sol.(c) :** Given  $(180\% \text{ of } ?) \div 2 = 504$

$$\Rightarrow \left( ? \times \frac{180}{100} \right) \div 2 = 504$$

$$\Rightarrow ? \times \frac{180}{100} = 504 \times 2$$

$$\Rightarrow ? \times \frac{180}{100} = 1008$$

$$? = \frac{1008 \times 100}{180} = 560$$

22. The population of a town is 1771561. If it had been increasing at 10% per annum, its population 6 years ago was

- (a) 1000000      (b) 12000000  
(c) 1220000      (d) None

**Sol.(a) :** Population 6 years ago

$$= \left[ \frac{1771561}{\left( 1 + \frac{10}{100} \right)^6} \right]$$

$$= 1771561 \times \left( \frac{10}{11} \right)^6 = \frac{1771561 \times 1000000}{1771561} = 1000000$$

23. In the year 2010, 5000 students were admitted in a college. It is found that the

number of students admitted is constantly increasing by 24 percent per year. How many students will be admitted in the college in the year 2012?

- (a) 7500      (b) 74500  
(c) 7688      (d) 76000

**Sol.(c) :** Number of students admitted in 2012

$$= 5000 \left( 1 + \frac{24}{100} \right)^2 = \left( 5000 \times \frac{31}{25} \times \frac{31}{25} \right) = 7688$$

24. At a special sale, 5 tickets can be purchased for the price of 3 tickets. If 5 tickets are purchased at the sale, the amount saved will be what percent of the original price of the 5 tickets?

- (a)  $22\frac{1}{2}\%$       (b) 25%      (c) 40%      (d) 75%

**Sol.(c) :** Let the original price of each ticket be Rs. 100

Then, original price of 5 tickets = Rs. 500

Sale price of 5 tickets = Rs. 300

Amount saved = Rs.  $(500 - 300) = \text{Rs. } 200$

$\therefore$  Required percentage

$$= \left( \frac{200}{500} \times 100 \right) \% = 40\%$$

25. A housewife saved Rs. 2.50 in buying an item on sale. If she spent Rs. 25 for the item, approximately how much percent she saved in the transaction?

- (a) 14%      (b) 33%      (c) 9%      (d) 10%

**Sol.(c) :** Actual price = (Rs.  $25 + 2.50$ )  
= Rs. 27.50

$\therefore$  Saving

$$= \left( \frac{2.50}{27.50} \times 100 \right) \% = \frac{100}{11} \% = 9\frac{1}{11} \% = 9\%$$

### Practice set questions

- If 75% of a number is added to 75, the result is the number itself. Then the number is  
(a) 300      (b) 400      (c) 450      (d) 600
- Subtracting 40% of a number from the number, we get the result as 30, the number is  
(a) 100      (b) 75      (c) 50      (d) 40
- If three fifth of a number is 40 more than 40% of the same number. What is the number  
(a) 150      (b) 350      (c) 200      (d) 250
- A number on subtracting 15 from it, reduces to its 80% what is 40% of that number?  
(a) 75      (b) 30      (c) 60      (d) 45
- Calculation shows that an angle is  $37\frac{1}{2}\%$ . The size obtained by drawing and measurement is 36%. The error percent is  
(a) 5%      (b) 10%      (c) 2.5%      (d) 4%
- If x is 90% of Y, what percent of x is y?  
(a) 100.1%      (b) 111.1%  
(c) 90.9%      (d) 100.1%

7. If  $x\%$  of  $y$  is the  $4/5$  of 80, then the value of  $xy$  is  
 (a) 3600 (b) 6000 (c) 5600 (d) 6400
8. When a number is increased by 20% then it becomes 720. Find the number?  
 (a) 600 (b) 500 (c) 700 (d) 800
9. If 8% of  $x = 4\%$  of  $y$ , then 20% of  $x$  is  
 (a) 20% of  $y$  (b) 40 % of  $y$   
 (c) 30 % of  $y$  (d) 10 % of  $y$
10. The number which when decreased by  $27\frac{1}{2}\%$  then it becomes 87. The number is  
 (a) 240 (b) 180 (c) 150 (d) 120
11. 40 Quintal is what percent of 2 metric tones?  
 (a) 100% (b) 200% (c) 400% (d) 50 %
12. It is known that 20% of the mangoes are rotten. If the number of rotten mangoes is 35, then the total number of mangoes is  
 (a) 175 (b) 200 (c) 125 (d) 225
13. If 70% of students in a school are boys and the number of girls is 504, the number of boys is  
 (a) 1100 (b) 1176 (c) 1170 (d) 1178
14. A student has to secure 40% marks to pass. He gets 178 marks and failed by 22 marks. The maximum marks are :  
 (a) 500 (b) 450 (c) 1000 (d) 400
15. Of the total amount received by Kiran, 20% was spent on purchases and 5% of the remaining on transportation. If he is left with Rs.1520, the initial amount was  
 (a) 1000 (b) 1500 (c) 1980 (d) 2000
16. In a library 20% books are in Hindi, 50% of the remaining are in English and the remaining 9000 are in various other languages. What is the total number of books?  
 (a) 22500 (b) 15600 (c) 25600 (d) 36500
17. Rent of the house is increased from '7000 to '7700. Express the increase in price as a percentage of the original rent.  
 (a) 20% (b) 10% (c) 40% (d) 5%
18. Veena bought a watch costing Rs. 1404 including sales tax at 8%. She asked the shopkeeper to reduce the price of the watch so that she can save the amount equal to the tax. The reduction of the price of the watch is?  
 (a) Rs.108 (b) Rs.104  
 (c) Rs.112 (d) Rs.120
19. A Sales Executive gets a commission on total sales at 8%. If the sale is exceeded Rs.10,000 he gets an additional commission as a bonus of 4% on the excess of sales over Rs.10,000. If he gets the total commission of Rs.950, then the bonus he received is?  
 (a) 40 (b) 50 (c) 36 (d) 48
20. In a College there are 1800 students. Last day except 4% of the boys all the students were present in the college. Today except 5% of the girls all the students are present in the college, but in both the days number of students present in the college, were same. The number of girls in the college is?  
 (a) 1000 (b) 400 (c) 800 (d) 600
21. In a library 60% of the books are in Hindi, 60% of the remaining books are in English rest of the books are in Malayalam. If there are 4800 books in English, then the total number of books in Malayalam are?  
 (a) 3400 (b) 3500 (c) 3100 (d) 3200
22. 80% of a small number is 4 less than 40% of a larger number. The larger number is 125 greater than the smaller one. The sum of these two numbers is  
 (a) 325 (b) 345 (c) 355 (d) 365
23. In a private company 60% of the employees are men and 48% of the employees are Engineer and 66.6% of Engineers are men. The percentage of women who are not engineers is?  
 (a) 60% (b) 50% (c) 55% (d) 65%
24. Initially, Suresh has Rs.200 in his paytm wallet then he increased it by 20%. Once again he increased his amount by 25%. The final value of money in his wallet will be how much % greater than the initial amount?  
 (a) 40% (b) 50% (c) 80% (d) 60%
25. Mr.Ramesh gives 10% of some amount to his wife and 10% of the remaining to hospital expenses and again 10% of the remaining amount to charity. Then he has only Rs.7290 with him. What is the initial sum of money with that person?  
 (a) Rs.8000 (b) Rs.9000  
 (c) Rs.10000 (d) Rs.20000
26. Initially, a shopkeeper had "x" pens. A customer bought 10% of pens from "x" then another customer bought 20% of the remaining pens after that one more customer purchased 25% of the remaining pens. Finally, shopkeeper is left with 270 pens in his shop. How many pens were there initially in his shop?  
 (a) 500 (b) 800 (c) 400 (d) 600

27. The cost of packaging of the oranges is 20% the cost of fresh oranges themselves. The cost of oranges increased by 30% but the cost of packaging decreased by 50%, then the percentage change of the cost of packed oranges, if the cost of packed oranges is equal to the sum of the cost of fresh oranges and cost of packaging
- (a) 14.5%                         (b) 16.66%  
(c) 14.33%                         (d) 13.66%
28. Cost Price of two laptops is same. One of the laptops is sold at a profit of 15% and the Selling Price of another one laptop is Rs. 3400 more than the first one. The net profit is 20%. What is the Cost Price of Each laptop?  
(a)36000 (b)40000 (c)48000 (d)34000
29. In an office there are 40% female employees. 50% of the male employees are UG graduates. The total 52% of employees are UG graduates out of 1800 employees. What is the number of female employees who are UG graduates?
- (a) 362      (b) 412      (c) 396      (d) 428
30. Ravi got 70% in English and 56% in Biology and the maximum marks of both papers is 100. What percent does he score in Maths, if he scores 60% marks in all the three subjects?. Maximum Marks of Maths paper is 200.
- (a) 30%      (b) 40%      (c) 45%      (d) 57%

## **Answers**

## **PERCENTAGE**

1. (a)   2. (c)   3. (c)   4. (b)   5. (d)   6. (b)   7. (d)   8. (a)   9. (d)   10. (d)  
11. (b)   12. (a)   13. (b)   14. (a)   15. (d)   16. (a)   17. (b)   18. (b)   19. (b)   20. (c)  
21. (d)   22. (c)   23. (a)   24. (b)   25. (c)   26. (a)   27. (b)   28. (d)   29. (c)   30. (d)

# RATIO PROPORTION

## BASIC CONCEPT

### INTRODUCTION OF RATIO AND PROPORTION :

**RATIO** : Ratio is a comparison of two quantities by division. Ratio represents the relation that one quantity bears to the other. It is represented as  $a:b$ . In any ratio  $a:b$ ,  $a$  is called Antecedent and  $B$  is called Consequent. It is an abstract (without units) quantity.

- A ratio remains unaltered if its numerator and denominator are multiplied or divided by the same number, e.g.  $4:3$  is the same as the  $(4 \times 10) : (3 \times 10)$  ie  $40:30$ .

**PROPORTION:** Proportion is a statement that two ratios are similar. When two ratios are equal, they make a proportion, i.e. if  $a/b = c/d$ , then  $a, b, c$  and  $d$  are in proportion. This is represented as  $a:b :: c:d$ . When  $a, b, c$  and  $d$  are in proportion, then  $a$  and  $d$  are called the Extremes and  $b$  and  $c$  are called the Means, also Product of the Means = Product of the Extremes i.e.  $bc = ad$ .

### DIFFERENT TYPES OF RATIOS :

- **Duplicate Ratio:**  $a^2 : b^2$  is called duplicate ratio of  $a : b$ .
- **TriPLICATE Ratio:**  $a^3 : b^3$  is called triplicate ratio of  $a : b$ .
- **Sub - Duplicate Ratio:**  $\sqrt{a} : \sqrt{b}$  is called sub-duplicate ratio of  $a : b$ .
- **Sub - TriPLICATE Ratio:**  $\sqrt[3]{a} : \sqrt[3]{b}$  is called sub-triplicate ratio of  $a : b$ .
- **Compound Ratio:**  $ab : cd$  is the compound ratio of  $a : c$  and  $b : d$ . It is the ratio of the product of the antecedents to that of the consequents of two or more given ratios.
- **Inverse Ratio:**  $1/a : 1/b$  is the inverse ratio of  $a : b$ .
- **Componendo and Dividendo:** If  $a/b = c/d$ , then  $(a+b)/(a-b) = (c+d)/(c-d)$

### DIFFERENT TYPES OF PROPORTIONS :

- **Continued Proportion:** If these quantities  $a, b$  and  $c$  are such that  $a:b :: b:c$ , then  $b^2 = ac$  and  $a, b$  and  $c$  are in continued proportion. Also the quantity  $c$  is called the third proportion of  $a$  and  $b$ .
- **Fourth Proportion:** If four quantities  $a, b, c$  and  $x$  are such that  $a:b :: c:x$ , then  $ax = bc$  and  $x$  is called the fourth proportion of  $a, b$  and  $c$ .

- **Mean or second Proportion:** If three quantities  $a, b$  and  $x$  are such that  $a:x :: x:b$ , then  $x^2 = ab$  and  $x$  is called the mean of  $a$  and  $b$ . Also, if  $a:b = c:d$ , then the following properties holds good.

- (i)  $b:a = d:c$  (Invertendo)
- (ii)  $a:c = b:d$  (Alternendo)
- (iii)  $(a + b) : b = (c + d) : d$  (Componendo)
- (iv)  $(a - b) : b = (c - d) : d$  (Divendendo)
- (v)  $(a + b)/(a - b) = (c + d)/(c - d)$  (Componendo – Divendendo)

- **Variation:** If two quantities  $x$  and  $y$  are related in such a way that as the quantity  $x$  changes it also brings a change in the second quantity  $y$ , then the two quantities are in variation.

**Direct Variation:** The quantity  $x$  is in direct variation to  $y$ , if an increase in  $x$  makes  $y$  to increase proportionally. Also decrease in  $x$  makes  $y$  to decrease proportionally it can be expressed as  $x = ky$ , where  $k$  is called the constant of proportionality.

Eg: Cost is directly proportional to the number of articles bought.

- **Inverse Variation:** The quantity  $x$  is in inverse variation to  $y$ , if an increase in  $x$  makes  $y$  to decrease proportionally. Also a decrease in  $x$  makes  $y$  to increase proportionally. It can be expressed as  $x = k/y$ , where  $k$  is a constant of proportionality.

Eg: The time taken by a vehicle in covering a certain distance is inversely proportional to the speed of the vehicle.

- **Joint Variation:** If there are more than two quantities  $x, y$  and  $z$  and  $x$  varies with both  $y$  and  $z$ , then  $x$  is in joint variation to  $y$  and  $z$ . It can be expressed as  $kyz$ , where  $k$  is constant of proportionality.

Eg: Men doing a work in some number of days working certain hours a day.

- **Distribution of Amount:** If an amount  $A$  is distributed in the ratio  $a:b$ , then First part =  $a/(a+b) \times A$ ; Second Part =  $b/(a+b) \times A$

### FORMULAE USED IN RATIO AND PROPORTION :

- (1) If  $a:b :: b:c$ , then  $a/b = b/c \Rightarrow c = b^2/a$
- (2) If  $a:b :: c:d$ , then  $a/b = c/d \Rightarrow d = bc/a$

- (3) If  $a:x :: x:b$ , then  $x = \sqrt{ab}$  ( $x$  is mean proportional)
- (4) If  $x/y = 1$ , then  $(x+a)/(y+a) = 1$  and  $(x-a)/(y-a) = 1$
- (5) If  $x/y > 1$ , then  $(x+a)/(y+a) < x/y$  and  $(x-a)/(y-a) > x/y$
- (6) If  $x/y < 1$ , then  $(x+a)/(y+a) > x/y$  and  $(x-a)/(y-a) < x/y$
- (7) If  $a/b = c/d = e/f = \dots = k$  (constant), then  $(a+c+e+\dots)/(b+d+f+\dots) = k$

Let's go through some examples to have a better understanding of Ratio and Proportion :

**Question 1 :** The ratio of two numbers is 7 : 4. If 5 is added to the greater number and 5 is subtracted from the smaller number, the greater number becomes twice the smaller one. Find the numbers.

**Solution :** Given,

Present ratio = 7 : 4.

$\therefore$  actual values are  $7x$  and  $4x$ .

Hence  $7x + 5 : 4x - 5 = 2 : 1 \Rightarrow x = 15$ .

$\therefore$  numbers are  $7(15) = 105$  and  $4(15) = 60$ .

**Question 2 :** Find the ratio of the diagonal of a square of side 20 cm, to its side.

**Solution :** Given,

The side of the square = 20cm

And Diagonal of a square =  $\sqrt{2}$  side.

So, the required ratio is  $20\sqrt{2} : 20 = \sqrt{2} : 1$ .

**Question 3 :** The ratio of A's salary to B's was 2 : 3. A's salary is increased by 20% and B's by 10%, what is the ratio of their salaries now?

**Solution :** Given,

The present ratio = 2 : 3

After increase in A's salary by 20% and in B's salary by 10%, the new ratio =  $(20 + 4)/(30 + 3) = 24/33$  or  $8/11$ .

So, the new ratio is 8 : 11.

**Question 4 :** Divide Rs. 460 among 3 persons A, B and C such that A's share, 3 times B's share and 5 times C's share are all equal. The shares of A, B and C are respectively:

**Solution :** Given,

$A = 3B = 5C$ . Also  $A + B + C = 460$

$\therefore 3B + B + 3B/5 = 460$

$\Rightarrow (15 + 5 + 3)B = 460 \times 5$

$\Rightarrow A = 300$ ,  $B = 100$  and  $C = 60$

**Question 5 :** If  $a:b = 2:3$ ,  $b:c = 4:5$ ,  $c:d = 5:7$ , find  $a:d$ ?

**Solution :**  $a/d = (2/3)*(4/5)*(5/7) \Rightarrow 8/21$

So, the required ratio is 8:21.

**Question 6 :** The inverse ratio of 5: 4: 3 is?

**Solution :** The inverse ratio is :

$$1/5: 1/4: 1/3 = 12 : 15 : 20.$$

**Question 7 :** In a bag there are coins of 50 paisa, 25 paisa and one rupee in the proportion 4:5:2. If there are in all Rs.21, the number of 25 paisa coins is?

**Solution :** Let the number of 50paisa coins be  $4x$ , 25 paisa coins be  $5x$  and one rupee coin be  $2x$ .

So, the total value of coins =  $200x + 125x + 200x = 2100$

$$\Rightarrow 525x = 2100$$

$$x = 4$$

So, the number of 25 paisa coins is 20.

**Question 8 :** 125 liters of a mixture of milk and water contains in the ratio 3:2. How much water should now be added so that the ratio of milk and water becomes 3:4?

**Solution :** Amount of milk in the mixture =  $3/5 * 125 = 75$  liters

So, amount of water = 50 liters

According to the question,

$$75 : (50+P) = 3:4$$

$$150 + 3P = 400 \Rightarrow P = 50$$

50 liters of water is to be added for the ratio become 3:4.

**Question 9 :** The food in a camp lasts for 20 men for 40 days. If twenty more men join, how many days will the food last?

**Solution :** one man can consume the same food in  $20*40 = 800$  days.

10 more men join, the total number of men = 40  
The number of days the food will last =  $800/40 = 20$  days.

**Question 10 :** 10 camels cost as much as 20 horses, 16 horses cost as much as 8 oxen and 4 oxen as much as 2 elephants. If the cost of 20 elephants is Rs.80000, find the cost of a camel?

**Solution :** Let the cost of a camel be Rs x.

According to the question,

10 camels = 20 horses

16 horses = 8 oxen

4 oxen = 2 elephants

20 elephants = Rs.80000

So,  $P = \text{Rs.}[(20 * 8 * 2 * 80000)/(10 * 16 * 4 * 20)] \Rightarrow \text{Rs.}2000$ .

So, the cost of a camel is Rs.2000.

I hope, your concept would have been cleared and you now evolve better understanding about it and will be able to solve questions on your own. The above given combinations are just few types, there could many like that, you will get better hold of it if you practice them.

## SOLVED EXAMPLES

- Directions : Mark (✓) against the correct answer:**

**Q. Nos. (1-3) : These questions are based on the following information:**

Given that  $a : b = 5 : 3$  and  $b : c = 2 : 5$

1. Which of the following is true?  
 (a)  $a < b < c$  (b)  $b < a < c$  (c)  $c > a > b$  (d)  $b < c > a$

**Sol.(b) :**  $a : b = 5 : 3, b : c = 2 : 5 =$

$$\left(2 \times \frac{3}{2}\right) : \left(5 \times \frac{3}{2}\right) = 3 : \frac{15}{2}$$

$$\text{So, } a : b : c = 5 : 3 : \frac{15}{2} = 10 : 6 : 15$$

Clearly,  $b < a < c$

2. If  $c = 50$ , the value of  $a+b+c$  will be  
 (a) More than 50 but less than 100  
 (b) More than 100 but less than 103  
 (c) More than 103 but less than 105  
 (d) More than 105

**Sol. (c) :** Let  $a = 10x, b = 6x, c = 15x$ .

$$\text{Then, } 15x = 50 \text{ or } x = \frac{10}{3}$$

$$\therefore a + b + c = 10x + 6x + 15x = 31x$$

$$= \left(31 \times \frac{10}{3}\right) = 103.33 > 103$$

3.  $(c - a)$  will be equal to

I.  $10(a+c)$  II.  $10a + 25b$

- (a) Only I is true  
 (b) Only II is true  
 (c) Both I and II are true  
 (d) Both I and II are false

**Sol.(d) :**  $(c - a) = (15x - 10x) = 5x$

$$\begin{aligned} \text{I. } 10(a+c) &= 10(10x+15x) \\ &= 10 \times 25x = 250x \end{aligned}$$

$$\begin{aligned} \text{II. } 10a + 25b &= 10 \times 10x + 25 \times 6x \\ &= 100x + 150x = 250x \end{aligned}$$

4. The ratio of incomes of two persons is 5:3 and that of their expenditure is 9:5. If they save Rs. 2600 and Rs. 1800 respectively, their incomes are  
 (a) Rs. 7000, Rs. 7500  
 (b) Rs. 6000, Rs. 4500  
 (c) Rs. 4000, Rs. 6500  
 (d) Rs. 8000, Rs. 4800

**Sol.(d) :** Let the incomes of the two persons be  $5x$  and  $3x$  and their expenditures be  $9y$  and  $5y$  respectively.

$$\text{Then, } 5x - 9y = 2600 \quad \dots(\text{i})$$

$$\text{and } 3x - 5y = 1800 \quad \dots(\text{ii})$$

Multiplying (i) by 3 and (ii) by 5, we get,

$$15x - 27y = 7800 \quad \dots(\text{iii})$$

$$\text{and } 15x - 25y = 9000 \quad \dots(\text{iv})$$

Subtracting (iii) from (iv), we get,  
 $2y = 1200$  or  $y = 600$

Putting  $y = 600$  in (i), we get  $5x = 8000$

$$\text{or } x = 1600$$

$\therefore$  Their income are Rs.  $(5 \times 1600)$  and  
 $\text{Rs. } (3 \times 1600)$  i.e., Rs. 8000  
 and Rs. 4800 respectively.

5. The average age of three boys is 25 years and their ages are in the proportion 3:5:7.  
 The age of the youngest boy is  
 (a) 7 years (b) 15 years  
 (c) 21 years (d) 16 years

**Sol.(b) :** Sum of ages of 3 boys  $= (25 \times 3)$  years  $= 75$  years

$\therefore$  Age of the youngest boy

$$= \left(75 \times \frac{3}{15}\right) \text{ years} = 15 \text{ years}$$

6. The cost of a table and a chair are in the ratio of 5 : 7. If the cost of chair and table is increased by 20% and 10% respectively, then what will be the new ratio?  
 (a) 12 : 15 (b) 55 : 84  
 (c) 17 : 21 (d) 19 : 25

**Sol.(b) :** Let the cost of the table and chair be Rs.  $5x$  and Rs.  $7x$  respectively

New cost of chair  $= 120\%$  of Rs.  $7x$

$$= \text{Rs. } \left(\frac{6}{5} \times 7x\right) = \text{Rs. } \frac{42x}{5}$$

New cost of table  $= 110\%$  of Rs.  $5x$

$$= \text{Rs. } \left(\frac{11}{10} \times 5x\right) = \text{Rs. } \frac{55x}{10}$$

$$\therefore \text{New Ratio} = \frac{55x}{10} : \frac{42x}{5} = 55 : 84$$

7. Find the third proportional to 25 and 30  
 (a) 36 (b) 30 (c) 26 (d) 33

**Sol.(a) :** Let third proportional be  $x$

$$\Rightarrow 25 : 30 :: 30 : x \Rightarrow 25 \times x = 30 \times 30$$

$$\Rightarrow x = \frac{30 \times 30}{25} = 36$$

8. Seeta and Geeta have two glasses of equal volumes. Both have some milk in their glasses. Seeta says to Geeta, "Give me half the milk in your glass so that my glass will be full of milk." Geeta says to Seeta, "Instead you give me one-fourth of the milk in your glass so that my glass will be full of milk." Find the ratio of volumes of milk in their glasses.  
 (a) 2 : 2 (b) 3 : 0 (c) 4 : 3 (d) 2 : 3

**Sol.(d) :** Let the capacity of each glass be  $z$ .  
Let  $x$  and  $y$  denote the quantities of milk in glasses of Seeta and Geeta respectively.

$$\text{Then, } x + \frac{1}{2}y = z \text{ and } y + \frac{1}{4}x = z$$

$$\text{So, } x + \frac{1}{2}y = y + \frac{1}{4}x$$

$$\Rightarrow \frac{3}{4}x = \frac{1}{2}y \Rightarrow \frac{x}{y} = \frac{1}{2} \times \frac{4}{3} = \frac{2}{3}$$

Hence, required ratio =  $2 : 3$

9.  $x$  and  $y$  vary inversely with each other. When  $x$  is 12,  $y$  is 9. The pair which is not a possible pair of corresponding values of  $x$  and  $y$  is
- (a) 7 and 10      (b) 15 and 11  
(c) 24 and 18      (d) None

**Sol.(c) :**  $\frac{1}{y} \alpha \frac{1}{x} \Rightarrow x = \frac{k}{y}$ . When  $x = 12, y = 9$ ,  
 $k = xy = 12 \times 9 = 108$

Clearly,  $xy \neq 108$  for  $x = 24, y = 18$

10. Monthly consumption of kerosene oil in a certain household along with price variations is given below:

Rate of kerosene of (Rs.)	15	2	30	45
Consumption(in ltrs.)	60	45	30	20

When the price goes up to Rs. 6 per ltr., what is likely consumption of kerosene

- (a) 5.6 ltrs.      (b) 8 ltrs.  
(c) 12.6 ltrs.      (d) 15 ltrs.

**Sol.(d) :** Let the required consumption be  $x$  ltrs.

Clearly,

$$1.5 \times 60 = 2 \times 45 = 3 \times 30 = 4.5 \times 20 = 6x$$

$$\therefore 6x = 90 \Rightarrow x = 15$$

11. The ratio of milk to water in 80 ltrs. of a mixture is  $7 : 3$ . The water (in ltrs.) to be added to it to make the ratio  $2 : 1$  is
- (a) 4      (b) 9      (c) 7      (d) 11

**Sol.(a) :** Quantity of milk =  $\left(80 \times \frac{7}{10}\right)$  ltrs  
= 56 ltrs.

$$\text{Quantity of water} = (80 - 56) \text{ ltrs}$$

$$= 24 \text{ ltrs.}$$

Let the quantity of water to be added be  $x$  ltrs.

$$\text{Then, } \frac{56}{24+x} = \frac{2}{1} \Rightarrow 48 + 2x = 56$$

$$\Rightarrow 2x - 8 \Rightarrow x = 4$$

12. The ratio of boys and girls in sections A, B, C and D of class VI is respectively  $7 : 5, 5 : 3, 3 : 2$  and  $2 : 1$ . If the number of students in each of the section is equal, then maximum number of boys are enrolled in section

- (a) A      (b) B      (c) C      (d) D

**Sol.(d) :** Ratio of boys in the four sections are as under

$$A \rightarrow \frac{7}{12} = 0.58; B \rightarrow \frac{5}{8} = 0.625,$$

$$C \rightarrow \frac{3}{5} = 0.6; D \rightarrow \frac{2}{3} = 0.66$$

Clearly, maximum number of boys are enrolled in section D.

13. If Rs. 1066 are divided among A, B, C and D such that  $A : B = 3 : 4, B : C = 5 : 6$  and  $C : D = 7 : 5$ , who will get the maximum?

- (a) A      (b) B      (c) C      (d) D

**Sol.(c) :**  $A : B = 3 : 4, B : C = 5 : 6 =$

$$\left(5 \times \frac{4}{5}\right) : \left(6 \times \frac{4}{5}\right) = 4 : \frac{24}{5},$$

$$C : D = 7 : 5 = \left(7 \times \frac{24}{35}\right) : \left(5 \times \frac{24}{35}\right) = \frac{24}{5} : \frac{24}{7}$$

$$\therefore A : B : C : D = 3 : 4 : \frac{24}{5} : \frac{24}{7}$$

$$= 105 : 140 : 168 : 120$$

Clearly, C will get the maximum.

14. If  $a : b = 2 : 3$  and  $b : c = 4 : 5$ , then  $(a+b) : (b+c)$  is equal to

- (a) 5 : 6      (b) 7 : 9  
(c) 20 : 27      (d) 22 : 25

**Sol.(c) :**  $a : b = 2 : 3, b : c = 4 : 5 =$

$$4 \times \frac{3}{4} : 5 \times \frac{3}{4} = 3 : \frac{15}{4}$$

$$\text{So, } a : b : c = 2 : 3 : \frac{15}{4} = 8 : 12 : 15$$

Let  $a = 8k, b = 12k, c = 15k$

$$\text{Then, } \frac{(a+b)}{(b+c)} = \frac{(8k+12k)}{(12k+15k)} = \frac{20k}{27k} = \frac{20}{27}$$

15. If  $W_1 : W_2 = 2 : 3$  and  $W_1 : W_3 = 1 : 2$ , then

$W_2 : W_3$  is

- (a) 3 : 4      (b) 2 : 3      (c) 5 : 4      (d) 4 : 3

**Sol.(a) :**  $\frac{W_2}{W_1} = \frac{3}{2}$  and  $\frac{W_1}{W_3} = \frac{1}{2}$

$$\Rightarrow \frac{W_2}{W_3} = \left( \frac{W_2}{W_1} \times \frac{W_1}{W_3} \right) = \frac{3}{2} \times \frac{1}{2} = \frac{3}{4}$$

$$\Rightarrow W_2 : W_3 = 3 : 4$$

16. If  $x:y = 3:4$ , then  $(2x+3y):(3y-2x)$  would be equal to  
 (a)  $3:2$     (b)  $3:1$     (c)  $1:3$     (d)  $4:5$

$$\text{Sol.(b)}: \frac{x}{y} = \frac{3}{4} \Rightarrow \frac{2x+3y}{3y-2x}$$

$$= \frac{2\left(\frac{x}{y}\right) + 3}{3 - 2\left(\frac{x}{y}\right)} = \frac{2 \times \frac{3}{4} + 3}{3 - 2 \times \frac{3}{4}} = \frac{9}{2} \times \frac{2}{3} = 3$$

$$\Rightarrow (2x+3y):(3y-2x) = 3:1$$

17. If  $a:b:c = 2:3:4$  and  $2a-3b+4c = 33$  then the value of  $c$  is  
 (a) 5    (b) 7    (c) 12    (d) 11

**Sol.(c)**: Let  $a = 2k, b = 3k, c = 4k$

$$\text{Then, } 2a - 3b + 4c = 33$$

$$\Rightarrow 2 \times 2k - 3 \times 3k + 4 \times 4k = 33$$

$$\Rightarrow 4k - 9k + 16k = 33$$

$$\Rightarrow 11k = 33 \Rightarrow k = 3$$

18. If  $a:b = b:c$ , then  $a^4:b^4$  would be equal to

- (a)  $ac:b^2$     (b)  $a^2:c^2$   
 (c)  $ab:ac^2$     (d) None of these

$$\text{Sol.(b)}: \frac{a}{b} = \frac{b}{c} \Rightarrow b^2 = ac$$

$$\Rightarrow \frac{a^4}{b^4} = \frac{a^4}{(ac)^2} = \frac{a^4}{a^2c^2} = \frac{a^2}{c^2}$$

19. If 60% of  $A = \frac{3}{4}$  of  $B$ , then  $A:B$  is  
 (a)  $3:5$     (b)  $5:4$     (c)  $5:3$     (d)  $3:4$

$$\text{Sol.(b)}: 60\% \text{ of } A = \frac{3}{4} \text{ of } B$$

$$B \Rightarrow \frac{60}{100}A = \frac{3}{4}B \Rightarrow \frac{3}{5}A = \frac{3}{4}B \Rightarrow \frac{A}{B} = \frac{3}{4} \times \frac{5}{3} = \frac{5}{4}$$

20. If  $\sqrt{2}:(1+\sqrt{3})::\sqrt{6}:x$ , then  $x$  is equal to  
 (a)  $\sqrt{3}+3$     (b)  $\sqrt{3}-3$   
 (c)  $-3+\sqrt{3}$     (d) None of these

$$\text{Sol.(a)}: \sqrt{2}:(1+\sqrt{3})::\sqrt{6}:x \Leftrightarrow \sqrt{2}x$$

$$= \sqrt{6}(1+\sqrt{3})$$

$$\Leftrightarrow x = \frac{\sqrt{6}(1+\sqrt{3})}{\sqrt{2}} = \sqrt{3}(1+\sqrt{3}) = \sqrt{3}+3$$

21. 25% of A's income is equal to 35% of B's income. The ratio of the incomes of A and B is  
 (a)  $6:5$     (b)  $7:5$     (c)  $5:7$     (d)  $6:7$

**Sol.(b)**: 25% of A = 35% of

$$B \Rightarrow \frac{25}{100}A = \frac{35}{100}B \Rightarrow \frac{A}{4} = \frac{7B}{20}$$

$$\Rightarrow \frac{A}{B} = \frac{7}{5} \times 4 = \frac{7}{5} \Rightarrow A:B = 7:5$$

22. If  $x = \frac{1}{3}y$  and  $y = \frac{1}{2}z$ , then  $x:y:z$  is equal to

- (a)  $1:2:6$     (b)  $1:3:6$   
 (c)  $2:3:4$     (d)  $1:3:4$

$$\text{Sol.(b)}: x = \frac{1}{3}y = \frac{1}{3} \times \frac{1}{2}z = \frac{1}{6}z$$

$$\text{Let } x = \frac{1}{3}y = \frac{1}{6}z = k$$

$$\text{Then, } x = k, y = 3k, z = 6k$$

$$\therefore x:y:z = k:3k:6k = 1:3:6$$

23. In a business, the ratio of the capitals of A and B is  $2:1$ , that of B and C is  $4:3$  and that of D and C is  $6:5$ . Then the ratio of the capitals of A and D is

- (a)  $20:8$     (b)  $15:3$     (c)  $8:3$     (d)  $20:9$

$$\text{Sol. (d)}: \frac{A}{B} = \frac{2}{1}, \frac{B}{C} = \frac{4}{3}, \frac{C}{D} = \frac{5}{6} \Rightarrow \frac{A}{D}$$

$$= \left( \frac{A}{B} \times \frac{B}{C} \times \frac{C}{D} \right) = \left( \frac{2}{1} \times \frac{4}{3} \times \frac{5}{6} \right) = \frac{20}{9}$$

$$\Rightarrow A:D = 20:9$$

24. In a ratio which is equal to  $7:8$ , if the antecedent is 35, what is the consequent?

- (a) 22    (b) 40    (c) 30    (d) 50

**Sol.(b)**: Let the consequent be  $x$

$$\text{Then, } \frac{7}{8} = \frac{35}{x} \Rightarrow 7x = 35 \times 8$$

$$\Rightarrow x = \frac{35 \times 8}{7} = 40$$

25. If  $\frac{a}{b} = \frac{c}{c} = \frac{d}{d}$ , then  $\frac{b^3+c^3+d^3}{a^3+b^3+c^3}$  will be equal to

- (a)  $\frac{a}{b}$     (b)  $\frac{c}{b}$     (c)  $\frac{d}{c}$     (d)  $\frac{d}{a}$

$$\text{Sol.(a)}: \text{Let } \frac{a}{b} = \frac{b}{c} = \frac{c}{d} = k$$

$$\text{Then, } a = bk, b = ck, c = dk$$

$$\text{Also, } \frac{a}{b} \times \frac{b}{c} \times \frac{c}{d} = k^3 \Rightarrow k^3 = \frac{a}{d}$$

$$\therefore \frac{b^3+c^3+d^3}{a^3+b^3+c^3} = \frac{b^3+c^3+d^3}{(bk)^3+(ck)^3+(dk)^3}$$

$$= \frac{b^3+c^3+d^3}{k^3 + (b^3+c^3+d^3)} = \frac{1}{k^3} = \frac{d}{a}$$

**Practice set questions**

1. Two numbers are in the ratio 3 : 5. If 3 is added to the smaller number, the new numbers are in the ratio 1 : 2. The smaller number is:  
 (a) 45    (b) 27    (c) 18    (d) 72
2. In a bag, there are coins of 25 p, 10 p and 5 p in the ratio of 2 : 3 : 6. If there is Rs. 33 in all, how many 10 p coins are there?  
 (a) 1500    (b) 900    (c) 1200    (d) 850
3.  $x$  varies inversely as cube of  $y$ . Given that  $y = 3$  for  $x = 2$ . The value of  $x$  for  $y = 2$  will be equal to:  
 (a) 54    (b) 27    (c)  $27/4$     (d)  $54/3$
4. If 30% of  $x$  = 50% of  $y$ , then  $x:y$  is equal to:  
 (a) 3:5    (b) 3:4    (c) 5:3    (d) 2:7
5. The salaries A, B, C are in the ratio 4:5:7. If the increments of 20%, 10% and 30% are allowed respectively in their salaries, then what will be new ratio of their salaries?  
 (a) 55:48:91    (b) 91:48:55  
 (c) 48:91:55    (d) 48:55:91
6. The ratio of the number of boys and girls in a college is 8:9. If the percentage increase in the number of boys and girls be 25% and 20% respectively. What will be the new ratio?  
 (a) 25:27    (b) 27:25    (c) 5:9    (d) 9:5
7. A sum of money is to be distributed among A, B, C, D in the proportion of 4:3:5:7. If D gets Rs. 750 more than A, what is C's share?  
 (a) 1000    (b) 750    (c) 1250    (d) 1750
8. The sum of three numbers is 1020. If the ratio of the first to the second is 3:4. And that of the second to the third is 2:5, then the first number is:  
 (a) 180    (b) 240    (c) 600    (d) 420
9. If  $A:B:C = 3:4:5$ , then  $A/B : B/C : C/A$  is equal to:  
 (a) 44:48:100    (b) 48:45:100  
 (c) 45:48:100    (d) 100:48:45
10. If  $x:y = 6:5$ , then  $(5x + 3y):(4x + 2y)$  is :  
 (a) 45:34    (b) 34:45    (c) 45:40    (d) 33:45
11. In a fort, there are 1000 soldiers. If each soldier consumes 4 kg per day, the provisions available in the fort will last for 50 days. If some more soldiers join, the provisions available will last for 40 days given each soldier consumes 2 kg per day. Find the number of soldiers joining the fort in that case.  
 (a) 1200    (b) 1500    (c) 1300    (d) 1250
12. The incomes of two persons A and B are in the ratio 4 : 5. If each saves Rs.100 per month, the ratio of their expenditures is Rs. 2:3. Find their incomes.  
 (a) 250 and 300    (b) 300 and 400  
 (c) 200 and 250    (d) 200 and 300
13. One year ago the ratio between Mita's and Shweta's salary was 4 : 5. The ratios of their individual salaries between last year's and this year's salaries are 2 : 3 and 3 : 4 respectively. At present the total of their salary is Rs. 4800. The salary of Shweta now is?  
 (a) 3300    (b) 3000    (c) 4000    (d) 3200
14. 50 boys and 35 girls form a group for social work. During their membership drive, the same number of boys and girls joined the group. How many members does the group have now, if the ratio of boys to girls is 5 : 4?  
 (a) 130    (b) 135    (c) 120    (d) None
15. A, B and C have amounts in the ratio of 5: 6:7. First C gives  $1/7$ th to A and  $1/7$ th to B then A gives  $1/6$ th to B. Find the final ratio of amount of A, B and C respectively.  
 (a) 8:5:5    (b) 5:8:5  
 (c) 5:5:8    (d) Data inadequate
16. A mixture contains alcohol and water in the ratio 5:4. If 4 liters of water is added to the mixture, the ratio becomes 3:4. Find the quantity of alcohol in the given mixture.  
 (a) 6L    (b) 7.5L    (c) 6l    (d) None
17. Two solutions have milk & water in the ratio 3:4 and 5:8. Find the proportion in which these two solutions should be mixed so that the resulting solution has 1 part milk and 3 parts water ?  
 (a) 1:2    (b) 2:1    (c) 1:3    (d) 3:1
18. A sum is divided among A, B and C in such a way that for each rupee A gets, B gets 30 paisa and C gets 20 paisa. If the share of B is Rs. 15, what is the total amount?  
 (a) 75    (b) 45    (c) 65    (d) None
19. The ratio of the angles of a triangle is 4:5:6. The three angles of a quadrilateral is equal to three angles of this triangle. What is the sum of the second largest angle and smallest angle of the quadrilateral ?  
 (a)  $120^\circ$     (b)  $132^\circ$   
 (c)  $108^\circ$     (d) Data inadequate
20. What is the equivalent compound ratio of 4:5::6:7::3:4 ?  
 (a) 35:18    (b) 18:33    (c) 18:35    (d) 33:18
21. If  $(3a + 4b)/(6a - 2b) = 5/3$ , then the value of  $ba$  is?

- (a) 440 (b) 462 (c) 430 (d) None
22. At a casino in Kolkata, there are three tables A, B and C. The payoffs at A is 15:1, at B is 20:1 and at C is 25:1. If a man bets Rs 100 at each table and win at two of the tables, what is the maximum and minimum difference between his earnings can be?  
 (a) 2000 (b) 8800  
 (c) 6800 (d) Data inadequate
23. Out of 150 applicants for a post, 70 are graduates and 85 have experience. What is the ratio of minimum to maximum number of graduates having experience?  
 (a) 1:17 (b) 1:14 (c) 1:16 (d) 1:15
24. A man spend Rs. 900 in buying trouser at Rs. 50 each and shirt at Rs. 30 each. What will be the ratio of trouser and shirt when the maximum number of trouser is purchased ?  
 (a) 3:1 (b) 1:3  
 (c) 1:4 (d) Data inadequate
25. The ratio between the number of Cows and the number of horses at a Stewar farm is 3 to 20. If each of horse is fed 90 ounces of horse food per day and the farm needs a total 27000 ounces of horse food per day. what is number cows in the farm ?  
 (a) 300 (b) 45 (c) 345 (d) None
26. Rs. 9600 is divided among 4 ladies, 2 gents and 3 girls. The ratio of share of a lady, a gent and a girl is 5: 5: 6. What is the share of each gent ?
- (a) 2000 (b) 200 (c) 4000 (d) 360
27. The sum of three numbers is 177. If the ratio of the first to the second is 3:4 and that of the second to the third is 5:6, then the difference between square of the second number and that of first is:  
 (a) 3600 (b) 3555 (c) 1575 (d) 15
28. A, B and C have some jems with each of them. Three times the number of jems with A equals nine times the number of jems with B while four times the number of jems with B equals seven times the number of jems with C. What is the minimum number of jems that can be there with all three of them put together ?  
 (a) 36:12:63 (b) 12:63:36  
 (c) 12:36:63 (d) None of these
29. In a cricket match total number of runs scored by Virat, Dhoni and Rohit is 720. The ratio of the number of runs scored by Virat and Rohit is 3 : 4 and that of the runs scored by Rohit and Dhoni is also 4 : 5. The number of runs scored by Virat and Dhoni in that match?  
 (a) 180 (b) 241 (c) 480 (d) 420
30. Tea worth Rs. 130 per kg and Rs. 140 per kg are mixed with a third variety in the ratio 1 : 1 : 3. If the mixture is worth Rs. 180 per kg, then the price of third variety of tea per kg?  
 (a) 210 (b) 270 (c) 315 (d) None

## **Answers**

## **RATIO PROPORTION**

1. (b) 2. (b) 3. (c) 4. (c) 5. (d) 6. (a) 7. (c) 8. (a) 9. (c) 10. (a)  
 11. (b) 12. (c) 13. (b) 14. (b) 15. (b) 16. (b) 17. (a) 18. (a) 19. (a) 20. (c)  
 21. (b) 22. (a) 23. (b) 24. (a) 25. (b) 26. (b) 27. (b) 28. (c) 29. (c) 30. (a)

# PROFIT AND LOSS

## BASIC CONCEPT

**Cost Price (CP):** The price, which is paid to acquire a product, is called cost price. All the overhead expenses (transportation, taxes etc.) are also included in the cost price.

**Selling Price (SP):** The sum of money, which is finally received for the product i.e. the price at which the product is finally disposed off is called the Selling price.

**Marked Price (MP):** The price, which is listed or marked on the product, is also known as quotation price/printed price/catalogue price/invoice price.

**Profit:** If selling price is greater than Cost price, then excess of SP to CP is called Gain or Profit.

**PROFIT = SELLING PRICE – COST PRICE**

E.g. Let the cost price of a saree be Rs 2000 and the shopkeeper sells the same for Rs 3125 per quintal, then profit =  $3125 - 2000 = \text{Rs. } 1125$  per saree.

**Loss:** If selling price is less than Cost price, then excess of CP to SP is called Loss.

**LOSS = COST PRICE – SELLING PRICE**

E.g. Let the cost price of a shirt be Rs. 1220. If

the shopkeeper sells 3 shirts for Rs. 3600 then he sells each shirt for Rs. 1200 and hence suffers  $(1220 - 1200) = \text{Rs. } 20$  Loss on each shirt

## IMPORTANT FORMULA

$$1. \quad \text{Gain} = (\text{S.P.}) - (\text{C.P.})$$

$$2. \quad \text{Loss} = (\text{C.P.}) - (\text{S.P.})$$

3. **Loss of gain is always calculated on C.P.**

$$4. \quad \text{Gain Percentage} = \frac{\text{Gain}}{\text{C.P.}} \times 100$$

$$5. \quad \text{Loss Percentage} = \frac{\text{Loss}}{\text{C.P.}} \times 100$$

$$6. \quad \text{Selling Price} = (100 + \text{Gain \%}) \times \text{C.P}/100$$

$$7. \quad \text{Selling Price} = (100 - \text{Loss \%}) \times \text{C.P}/100$$

$$8. \quad \text{Cost Price} = 100 \times \text{S. P} / (100 + \text{Gain \%})$$

$$9. \quad \text{Cost Price} = 100 \times \text{S. P} / (100 - \text{Loss \%})$$

## SOLVED EXAMPLES

**Directions : Mark (✓) against the correct answer:**

1. A trader sells an article and loses  $12\frac{1}{2}\%$ . The ratio of cost price to the selling price is

(a) 6:8      (b) 5:6      (c) 8:7      (d) None

**Sol.(c) :** Let C.P. = Rs. X. Loss =  $12\frac{1}{2}\%$

S.P. =  $87\frac{1}{2}\%$  of Rs. X

$$= \text{Rs. } \left( \frac{175}{2} \times \frac{1}{100} \times X \right)$$

$$= \text{Rs. } \frac{7X}{8}$$

2. A man buys 10 articles for Rs. 8 and sells them at the rate of Rs. 1.25 per article. His profit is

(a)  $12\frac{1}{2}\%$       (b)  $10\frac{1}{4}\%$   
(c)  $23\frac{1}{2}\%$       (d)  $56\frac{1}{4}\%$

**Sol.(d) :** C.P. of 10 articles = Rs. 8.

$$\begin{aligned} \text{S.P. of 10 articles} \\ = \text{Rs. } (1.25 \times 10) = \text{Rs. } 12.5 \end{aligned}$$

$$\text{Profit} = \text{Rs. } (12.5 - 8) = \text{Rs. } 4.50$$

$$\therefore \text{Profit \%} = \left( \frac{45}{8} \times 100 \right)\% = 56\frac{1}{4}\%$$

3. An item was bought for Rs. X and sold for Rs. Y, thereby earning a profit of 20%. Had the value of X been 15 less and the value of Y Rs. 76 less, a profit of 30% would have been earned. What was the value of 'X'?

(a) Rs. 100      (b) Rs. 400  
(c) Rs. 600      (d) Rs. 800

**Sol. (d) :** The cost price of the item is Rs. X And S.P. = Rs. Y

Given, Y = Rs.  $1.2X$

If the cost price of the item 15% less

$$\text{Then, C.P.} = 0.85 \times X = \text{Rs. } 0.85 X$$

According to the questions,

$$0.85X \times \frac{130}{100} = 1.2X - 76$$

$$\frac{85X}{100} \times \frac{130}{100} = \frac{12X}{10} - 76$$

$$\frac{11050}{10000} = \frac{12x}{10} - 76$$

$$11.05X = 12x - 760$$

$$0.95X = 760$$

$$\therefore X = \frac{760}{0.95} = \text{Rs.} 800$$

4. A box is bought of Rs. 75 and sold at a gain of 8%. Find its selling price.

(a) 81      (b) 71      (c) 91      (d) 86

**Sol.(a) :** Cost price of box = Rs. 75

Gain % = 8%

Now, required selling price or S.P

$$= (108\% \text{ of Rs. } 75)$$

$$= \text{Rs. } \left( \frac{75 \times 108}{100} \right)$$

$$= \text{Rs. } 81$$

5. Mr. Kashyap purchased an air-conditioner for Rs. 12000 and sold it for Rs. 15000. What was the profit percentage?

(a) 25%    (b) 20%    (c) 45%    (d) 19%

**Sol.(a) :** C.P. = Rs. 12000, S.P. = Rs. 15000.

$$\text{Profit} = \text{Rs. } (15000 - 12000) = \text{Rs. } 3000$$

$$\therefore \text{Profit \%} = \left( \frac{3000}{12000} \times 100 \right) \% = 25\%$$

6. 100 oranges are bought at the rate of Rs. 350 and sold at the rate of Rs. 48 per dozen. The percentage of profit or loss is

(a)  $14\frac{2}{7}\%$  gain    (b)  $10\frac{2}{7}\%$  gain  
(c) loss                (d) loss

**Sol.(a) :** C.P. of 1 orange

$$= \text{Rs. } \left( \frac{350}{100} \right) = \text{Rs. } 3.50$$

$$\text{S.P. of 1 orange} = \text{Rs. } \left( \frac{48}{12} \right) = \text{Rs. } 4$$

$$\therefore \text{Gain \%} = \left( \frac{0.50}{3.50} \times 100 \right) \% = \frac{100}{7}\% = 14\frac{2}{7}\%$$

7. By selling an article, Michael earned a profit equal to one-fourth of the price he bought it. If he sold it for Rs. 375, what was the cost price?

(a) Rs. 275.50      (b) Rs. 300  
(c) Rs. 250.75      (d) None

$$\text{Sol.(b) : S.P.} = \text{C.P.} + \frac{1}{4} \text{C.P.} = \text{Rs. } \frac{5}{4} \text{C.P.}$$

$$\therefore \frac{5}{4} \text{C.P.} = 375 \Rightarrow \text{C.P.} = \text{Rs. } \left( 375 \times \frac{4}{5} \right)$$

$$= \text{Rs. } 300$$

8. A dishonest dealer uses a scale of 90 cm instead of a metre scale and claims to sell at cost price. His profit is

(a) 75%    (b)  $4\frac{1}{9}\%$     (c) 79%    (d)  $11\frac{1}{9}\%$

$$\text{Sol.(d) : Gain \%} = \left( \frac{10}{90} \times 100 \right) \% = 11\frac{1}{9}\%$$

9. A merchant professes to lose 4% on a certain tea but he uses a weight equal to 840g instead of 1 kg. Find his real loss of gain percent.

(a) 30.25% loss      (b) loss  
(c) loss                (d) 37.5% gain

**Sol.(b) :** Percentage deduction in weight

$$= \left( \frac{160}{1000} \times 100 \right) \% = 16\%$$

$\therefore \text{Gain/Loss \%}$

$$= \left[ \left( \frac{y-x}{100-y} \right) \times 100 \right] \% = \left( \frac{16-4}{100-16} \times 100 \right) \%$$

$$= \left( \frac{12}{84} \times 100 \right) \% = \frac{100}{7}\% = 14\frac{2}{7}\%$$

10. A man sells two articles for Rs. 240 each. On one he gains 20% and on the other he loses 20%. What is the gain or loss percent in the entire transaction was?

(a) 3% gain      (b) 3% loss  
(c) 4% gain      (d) 4% loss

**Sol.(d) :** Loss%

$$= \left( \frac{\text{Common Gain \& Loss \%}}{10} \right)^2 \% \\ = \left( \frac{20}{10} \right)^2 \% = 4\%$$

11. A farmer sold a cow and an ox for Rs. 800 and got a profit of 20% on the cow and 25% on the ox. If he sells the cow and the ox for Rs. 820 he gets a profit of 25% on the cow and 20% on the ox. The individual cost price of the cow and the ox is

(a) Rs. 530.60, Rs. 130.60 (approx)  
(b) Rs. 431.85, Rs. 125.50 (Approx)  
(c) Rs. 331.75, Rs. 140.85 (Approx)  
(d) Rs. 531.15, Rs. 115.85 (Approx)

1. (a) : Let the C.P. of the cow be Rs. X and that of the ox be Rs. Y

Then, 120% of x + 125% of y = 800

$$\Rightarrow \frac{6x}{5} + \frac{5y}{4} = 800$$

$$\Rightarrow 24x + 25y = 16000 \quad \dots(i)$$

And, 125% of x + 120% of y = 820

$$\Rightarrow \frac{5x}{4} + \frac{6y}{5} = 820$$

$$\Rightarrow 25x + 24y = 16400 \quad \dots(\text{ii})$$

Adding (i) and (ii) we get,

$$49x + 49y = 32400$$

$$\Rightarrow x + y = \frac{32400}{49} \quad \dots(\text{iii})$$

Subtracting (i) from (ii) we get

$$x - y = 400 \quad \dots(\text{iv})$$

Adding (iii) and (iv), we get,

$$2x = \frac{32400}{49} + 400 = \frac{52000}{49}$$

$$\Rightarrow x = \frac{26000}{49} = 530.60$$

Putting  $x = \frac{26000}{49}$  in (iii) we get,

$$y = \frac{32400}{49} - \frac{26000}{49} = \frac{6400}{49} = 130.60$$

12. A discount of 15% on one article is the same as a discount of 20% on another article. The costs of the two articles can be  
 (a) Rs. 30, Rs. 20      (b) Rs. 50, Rs. 30  
 (c) Rs. 80, Rs. 60      (d) Rs. 60, Rs. 55

**Sol.(c)** : Let the cost of the two articles be x and y

Then, 15% of x = 20% of y

$$\Rightarrow \frac{x}{y} = \frac{20}{15} = 4 : 3$$

So, x and y must be in the ratio of 4:3

13. A discount series of p% of q% on an invoice is the same as a single discount of

$$(a) \left[ p + q + \frac{pq}{100} \right] \% \quad (b) \left[ p - q + \frac{pq}{100} \right] \%$$

$$(c) \left[ p + q - \frac{pq}{100} \right] \% \quad (d) \left[ p + q + \frac{-pq}{100} \right] %$$

**Sol.(c)** : Let marked price be Rs. 100

Then, S.P. = (100-q)% of (100-p)% of Rs. 100

$$= \text{Rs.} \left[ \frac{100-q}{100} \times \frac{100-p}{100} \times 100 \right]$$

$$= \text{Rs.} \left[ \frac{(100-q)(100-p)}{100} \right]$$

∴ Single discount

$$= \left\{ 100 - \left[ \frac{(100-q)(100-p)}{100} \right] \right\} \%$$

$$= \left( p + q - \frac{pq}{100} \right) \%$$

14. Venkat bought a camera and paid 20% less than its original price. He sold it at 40% profit on the price he had paid. The percentage of profit earned by Venkat on the original price was

- (a) 112      (b) 110      (c) 32      (d) 40

**Sol.(a)** : Let the original price of the camera be Rs. 100

Discounted price = Rs. 80

Profit = 40%

∴ S.P. = 140% of Rs. 80

$$= \text{Rs.} \left( \frac{140}{100} \times 80 \right) = \text{Rs.} 112$$

15. Find the selling price of an article if a shopkeeper allows two successive discounts of 5% each on the marked price of Rs. 80.

- (a) Rs. 78.80      (b) Rs. 66.75  
 (c) Rs. 75.85      (d) Rs. 72.20

**Sol.(d)** : S.P. = 95% of 95% of Rs. 80

$$= \text{Rs.} \left( \frac{95}{100} \times \frac{95}{100} \times 80 \right) = \text{Rs.} 72.20$$

16. A man sells a book at a profit of 20%. If he had bought it at 20% less and sold it for Rs. 18 less, he would have gained 25%. The cost price of the book is

- (a) Rs. 55      (b) Rs. 65      (c) Rs. 85      (d) Rs. 90

**Sol.(d)** : Let the C.P. be Rs. 100

Then, profit = 20%. S.P. = Rs. 120

New C.P. = 20% less = Rs. 80

$$\text{If gain is 25% then S.P.} = \text{Rs.} \left( \frac{125}{100} \times 80 \right)$$

$$= \text{Rs.} 100$$

Difference in S.P. = Rs. (120-100)

$$= \text{Rs.} 20$$

If difference in S.P. is Rs. 20, then C.P. = Rs. = 100

If difference in S.P. is Rs. 18, then C.P. = Rs.  $\left( \frac{100}{20} \times 18 \right) = \text{Rs.} 20$

17. A dishonest dealer sells the goods at 20% loss on cost price but uses 15% less weight. What is his percentage profit or loss?

- (a) loss      (b) loss      (c) gain      (d) gain

**Sol.(b)** : Gain/Loss%

$$= \left\{ \left( \frac{y-x}{100-y} \right) \times 100 \right\} \% = \left\{ \left( \frac{15-20}{100-15} \right) \times 100 \right\} %$$

$$= \left( \frac{-5}{85} \times 100 \right) \% = -\frac{100}{17} \%$$

$$= -5\frac{15}{17} \%$$

18. A fair price shopkeeper takes 10% profit on his goods. He lost 20% goods during theft. His loss percent is  
 (a) 36    (b) 56    (c) 10    (d) 12

**Sol.(d) :** Suppose he has 100 items  
 Let C.P. of each item be Rs. 1

Total cost = Rs. 100

Number of items left after theft = 80

S.P. of each item = Rs. 1.10

∴ Total sale = Rs.  $(1.10 \times 80)$  = Rs. 88

$$\text{Hence Loss\%} = \left( \frac{12}{100} \times 100 \right)\% = 12\%$$

19. A milkman cheats his customer in two ways. He mixes 10% water in pure milk and increases the price of milk by 10%. He purchases 20 kg pure milk at a rate of Rs. 15 per kg. His total profit by selling it is  
 (a) Rs. 30    (b) Rs. 63    (c) Rs. 75    (d) Rs. 90

**Sol.(b) :** C.P. of 20 kg milk = Rs.  $(20 \times 15)$  = Rs. 300

Quantity of water added = 10% of 20 kg = 2 kg

S.P. of 1 kg mixture = 110% of Rs. 15 = Rs. 16.50

S.P. of 22 kg mixture = Rs.  $(22 \times 16.50)$  = Rs. 363

∴ Profit = Rs.  $(363 - 300)$  = Rs. 63

20. If the cost price of 15 books is equal to the selling price of 20 books, the loss percent is  
 (a) 15%    (b) 13%    (c) 20%    (d) 25%

**Sol.(d) :** Let C.P. of each book be Rs. 1

Then, C.P. of 20 books = Rs. 20

S.P. of 20 books = Rs. 15

$$\therefore \text{Loss\%} = \left( \frac{5}{20} \times 100 \right)\% = 25\%$$

21. On selling 17 balls at Rs. 720, there is a loss equal to the cost price of 5 balls. The cost price of a ball is  
 (a) Rs. 55    (b) Rs. 45    (c) Rs. 65    (d) Rs. 60

**Sol.(d) :** (C.P. of 17 balls) – (S.P. of 17 balls) = (C.P. of 5 balls)

$$\Rightarrow \text{C.P. of 12 balls} = \text{S.P. of 17 balls} = \text{Rs. } 720$$

$$\Rightarrow \text{C.P. of 1 ball} = \text{Rs. } \left( \frac{720}{12} \right) = \text{Rs. } 60$$

22. If loss is  $1/3$  of S.P., the loss percentage is

$$(a) 15\frac{2}{5}\% \quad (b) 12\% \quad (c) 25\% \quad (d) 22\frac{2}{5}\%$$

**Sol.(c) :** Let S.P. = Rs. X.

$$\text{Then Loss} = \text{Rs. } \frac{X}{3}$$

$$\text{C.P.} = \text{Rs. } \left( X + \frac{X}{3} \right) = \text{Rs. } \frac{4X}{3}$$

$$\therefore \text{Loss\%} = \left( \frac{\frac{X}{3}}{\frac{4X}{3}} \times 100 \right)\% = 25\%$$

23. The C.P. of an article is 40% of the S.P. the percent that the S.P. is of C.P. is  
 (a) 250    (b) 150    (c) 300    (d) 500

$$\text{Sol.(a) : C.P.} = \frac{40}{100} \times \text{S.P} \Rightarrow \text{S.P.} = \frac{5}{2}$$

$$\text{C.P.} = \left( \frac{5}{2} \times 100 \right)\% \text{ of C.P.} = 250\% \text{ of C.P.}$$

24. A property dealer sells a house for Rs. 6,30,000 and in the bargain makes a profit of 5%. Had he sold it for Rs. 5,00,000, then what percentage of loss or gain he would have made?

$$(a) \text{gain} \qquad \qquad \qquad (b) 25\% \text{ loss}$$

$$(c) \text{loss} \qquad \qquad \qquad (d) \text{loss}$$

$$\text{Sol.(d) : C.P.} = \text{Rs. } \left( \frac{100}{105} \times 630000 \right)$$

$$= \text{Rs. } 600000$$

$$\therefore \text{Required loss\%} = \left( \frac{100000}{600000} \times 100 \right)\%$$

$$= 16\frac{2}{3}\%$$

25. The ratio between the sale price and the cost price of an article is 7:5. What is the ratio between the profit and the cost price of that article?

$$(a) 2:5 \quad (b) 3:7 \quad (c) 4:5 \quad (d) 5:4$$

**Sol. (a) :** Let C.P. = Rs.  $\%x$  and S.P. = Rs.  $7x$   
 Then, Gain = Rs.  $2x$

$$\therefore \text{Required ratio} = 2x : 5x = 2:5$$

#### Practice set questions

- The cost price of 20 articles is the same as the selling price of  $x$  articles. If the profit is 25%, then the value of  $x$  is:  
 (a) 15    (b) 16    (c) 18    (d) 25
- In a certain store, the profit is 320% of the cost. If the cost increases by 25% but the selling price remains constant, ap-

proximately what percentage of the selling price is the profit?

$$(a) 30\% \quad (b) 70\% \quad (c) 100\% \quad (d) 250\%$$

- A vendor bought toffees at 6 for a rupee. How many for a rupee must he sell to gain 20%?

$$(a) 3 \quad (b) 4 \quad (c) 5 \quad (d) 6$$

4. A shopkeeper expects a gain of 22.5% on his cost price. If in a week, his sale was of Rs. 392, what was his profit?  
 (a) Rs. 18.20      (b) Rs. 70  
 (c) Rs. 72      (d) Rs. 88.25
5. A trader mixes 26 kg of rice at Rs. 20 per kg with 30 kg of rice of other variety at Rs. 36 per kg and sells the mixture at Rs. 30 per kg. His profit percent is:  
 (a) No profit, no loss      (b) 5%  
 (c) 8%      (d) 10%
6. If selling price is doubled, the profit triples. Find the profit percent ?  
 (a) 100%      (b) 200%      (c) 300%      (d) 400%
7. A shopkeeper cheats to the extent of 10% while buying and selling, by using false weights. His total gain is.  
 (a) 20%      (b) 21%      (c) 22%      (d) 23%
8. By selling 45 lemons for Rs 40, a man loses 20%. How many should he sell for Rs 24 to gain 20% in the transaction ?  
 (a) 16      (b) 18      (c) 20      (d) 22
9. If the cost price of 12 pens is equal to the selling price of 8 pens, the gain percent is?  
 (a) 12%      (b) 30%      (c) 50%      (d) 60%
10. A milkman purchases the milk at Rs. x per litre and sells it at Rs. 2x per litre still he mixes 2 litres water with every 6 litres of pure milk. What is the profit percentage?  
 (a) 116%      (b) 166.66%  
 (c) 60%      (d) 100%
11. The percentage profit earned by selling an article for Rs. 1920 is equal to the percentage loss incurred by selling the same article for Rs. 1280. At what price should the article be sold to make 25% profit?  
 (a) Rs. 2000      (b) Rs. 2200  
 (c) Rs. 2400      (d) Data inadequate
12. If books bought at prices ranging from Rs. 200 to Rs. 350 are sold at prices ranging from Rs. 300 to Rs. 425, what is the greatest possible profit that might be made in selling eight books ?  
 (a) 600      (b) 1200  
 (c) 1800      (d) none of these
13. If the cost price is 25% of selling price. Then what is the profit percent.  
 (a) 150%      (b) 200%      (c) 300%      (d) 350%
14. Tarun got 30% concession on the labeled price of an article and sold it for Rs. 8750 with 25% profit on the price he bought. What was the labeled price ?  
 (a) 10000      (b) 12000  
 (c) 13000      (d) 14000
15. Due to reduction of 25% in price of oranges a customer can purchase 4 oranges more for Rs. 16. what is original price of an orange?  
 (a) Rs 1      (b) Rs 1.33  
 (c) Rs 1.5      (d) Rs 1.6
16. A man buys oranges at Rs 5 a dozen and an equal number at Rs 4 a dozen. He sells them at Rs 5.50 a dozen and makes a profit of Rs 50. How many oranges does he buy?  
 (a) 30 dozens      (b) 40 dozens  
 (c) 50 dozens      (d) 60 dozens
17. A person incurs a loss of 5% be selling a watch for Rs. 1140. At what price should the watch be sold to earn 5% profit.  
 (a) Rs.1200      (b) Rs.1230  
 (c) Rs.1260      (d) Rs.1290
18. The cost price of 20 articles is the same as the selling price of x articles. If the profit is 25%, then the value of x is:  
 (a) 15      (b) 16      (c) 18      (d) 25
19. In a scheme, a pack of three soaps with MRP Rs.45 is available for Rs.42. If it still gives a profit of 5% to the shopkeeper, then the cost price of the pack is ?  
 (a) 38      (b) 39      (c) 40      (d) 41
20. A Shopkeeper sells two articles at Rs.1000 each, making a profit of 20% on the first article and a loss of 20% on the second article. Find the net Profit or loss that he makes?  
 (a) 4%      (b) 5%      (c) 6%      (d) 8%
21. A cycle is bought for Rs.900 and sold for Rs.1080, find the gain percent?  
 (a)  $16\frac{2}{3}\%$       (b) 20%      (c) 18%      (d) 25%
22. An article is bought for Rs.675 and sold for Rs.900, find the gain percent?  
 (a)  $16\frac{2}{3}\%$       (b) 30%  
 (c)  $33\frac{1}{3}\%$       (d)  $33\frac{1}{6}\%$
23. An article is bought for Rs.600 and sold for Rs.500, find the loss percent?  
 (a)  $16\frac{2}{3}\%$       (b)  $100\frac{1}{3}\%$   
 (c) 16%      (d)  $16\frac{2}{3}\%$
24. The cost price of a radio is Rs.1500 and it was sold for Rs.1230, find the loss %?  
 (a) 18%      (b) 9%      (c) 15%      (d) 6%
25. A watch was sold at a loss of 10%. If it was sold for Rs.140 more, there would have been a gain of 4%. What is the cost price?  
 (a) Rs.1000      (b) Rs.1140  
 (c) Rs.860      (d) Rs.760

26. The sale price sarees listed for Rs.400 after successive discount is 10% and 5% is?  
(a) Rs.357      (b) Rs.340  
(c) Rs.342      (d) Rs.338
27. The list price of an article is Rs.65. A customer pays Rs.56.16 for it. He was given two successive discounts, one of them being 10%. The other discount is?  
(a) 3%      (b) 4%      (c) 5%      (d) 6%
28. A single discount equivalent to the discount series of 20%, 10% and 5% is?  
(a) 25%      (b) 30%      (c) 31.6% (d) 33.5%
29. What profit percent is made by selling an article at a certain price, if by selling at  $\frac{2}{3}$ rd of that price, there would be a loss of 20%?  
(a) 20%      (b) 25%  
(c)  $13\frac{1}{3}\%$       (d) 12%
30. A trader bought a car at 20% discount on its original price. He sold it at a 40% increase on the price he bought it. What percent of profit did he make on the original price?  
(a) 10%      (b) 11%      (c) 12%      (d) 15%

## **Answers**

## **PROFIT AND LOSS**

1. (b)    2. (b)    3. (c)    4. (c)    5. (b)    6. (a)    7. (b)    8. (b)    9. (c)    10. (b)  
11. (a)    12. (c)    13. (c)    14. (a)    15. (b)    16. (c)    17. (c)    18. (b)    19. (c)    20. (a)  
21. (b)    22. (c)    23. (d)    24. (a)    25. (a)    26. (c)    27. (b)    28. (c)    29. (a)    30. (c)

# CODING DECODING

## BASIC CONCEPT

Coding Decoding is simplest and scoring chapter of Reasoning. To be expertise on this chapter one has to be expert in remembering all the alphabets.

So in order to be expertise on this we need to remember positioning (in numerical value) and opposite of all alphabets. The below given diagram explain itself:

26	1	A	Z	26	1
25	2	B	Y	25	2
24	3	C	X	24	3
23	4	D	W	23	4
22	5	E	V	22	5
21	6	F	U	21	6
20	7	G	T	20	7
19	8	H	S	19	8
18	9	I	R	18	9
17	10	J	Q	17	10
16	11	K	P	16	11
15	12	L	O	15	12
14	13	M	N	14	13

Table showing forward & backward positions of Alphabets

Fig 1

In the above table (**Fig 1**) we have jotted down all 26 alphabets into 13 pair of letters. Now in this 13 pairs, we can get every alphabet's **forward and backward position** along with **opposite pair of letters**. Solving the coding decoding problems faster , depends how quickly one can remember alphabets positions.

### Types of Coding-Decoding

1. Letter coding
2. Coding by Analogy
3. Coding in Fictitious Language
4. Coding by substitution
5. Coding by shifting words
6. Coding based on conditions
7. Mathematical operation Based coding

### 1. LETTER CODING

- (i) Coding by shifting letters

**Example :** In a certain code language the word METAL is coded as LDSZK. How will

the word ZINC be written in that language?

**Solution :** M E T A L  
-1 -1 -1 -1 -1  
L D S Z K

**Similarly,**

Z	I	N	C
-1	-1	-1	-1
Y	H	M	B

### (ii) Coding by re-arranging letters

**Example :** In a certain code language the word NUMERICAL is written as LMUIREACN. How will be the word PUBLISHED be written in that language?

**Solution :**

NUMERICL => LMUIREACN  
1 2 3 4 5 6 7 8 9 => 9 3 2 6 5 4 8 7 1

**Therefore,**

PUBLISHED => DBUSILEHP  
1 2 3 4 5 6 7 8 9 => 9 3 2 6 5 4 8 7 1

### 3. Coding by Analogy

- (i) Coding by shifting letters

**Example :** In a certain code language PEAR is written as RCCP and AUNT is written as CSPR. How is LAND written in that code?

**Solution :** P E A R                    A U N T  
+2 -2 +2 -2        and +2 -2 +2 -2  
R C C P                    C S P R

**Similarly,** L A N D

+2	-2	+2	-2
N	Y	P	B

### 4. Coding by Shifting Words

**Example :** If the sentence 'layman can practice successful psychotherapy without great training is written as 'practice without successful layman training psychotherapy can great' in a certain code, then how will' I would have to think all the time' be written in that code?

**Solution :** Layman can practice successful psychotherapy without great training

1 2 3 4 5 6 7 8

Then after coding

3 6 4 1 8 5 2 7



### Number Coding:

2. If 7, 15, 15, 4 is GOOD and 2, 1, 20, 20, 5, 18 is BATTER, what number represent BEST?  
 (a) 2, 5, 19, 20      (b) 2, 19, 4, 20  
 (c) 2, 4, 19, 20      (d) 2, 5, 20, 19

**Sol. (a);** Letters are coded according to their place value in English alphabet, So, BEST ® 2, 5, 19, 20.

### Substitution:

3. If white is called blue, blue is called red, red is called yellow, yellow is called green, green is called black, black is called violet and violet is called orange, what would be the colour of human blood?  
 (a) Red      (b) Green      (c) yellow      (d) violet

**Sol. (c);** Yellow

The colour of human blood is 'red' and as it is given that 'red' is called 'yellow'. So, the colour of human blood is 'yellow'.

### Mixed letter coding:

4. In a certain code language:  
 (1) 'pod na joc' means 'very bright boy';  
 (2) 'tam nu pod' means 'the boy comes';  
 (3) 'nu per ton' means 'keep the doll';  
 (4) 'joc ton su' means 'very good doll'.

Which of the following means 'bright' in the same code language?.

- (a) joc      (b) pod      (c) ton      (d) na

**Sol. (d);** na

From statement 1 and 2, pod is common and the common word is 'boy' So, 'Pod' stands for 'boy'.

From statement 1 and 4, joc is common and the common word is 'very'

So 'joc' stands for 'very'.

So, 'na' stands for 'bright'

### Mixed number coding:

5. In a certain code,  
 '786' means 'study very hard'  
 '958' means 'hard work pays'  
 '645' means 'study and work'.

Which of the following is the code for 'very'?

- (a) 7      (b) 5      (c) 8      (d) 6

**Sol. (a);** 7

In first and second statements, the common word is 'hard' and the common code digit is '8'. So, '8' means 'hard'.

In the first and third statements, the common word is 'study' and the common code digit is '6'. So, '6' means study. Thus, in the first statement '7' means 'very'.

### Exercise

1. If in a certain code, LUTE is written as MUTE and FATE is written as GATE, then how will BLUE be written in that code?  
 (a) CLUE      (b) GLUE      (c) FLUE      (d) SLUE
2. If in a certain language, MADRAS is coded as NBESBT, how BOMBAY coded in that language?  
 (a) CPNCBX      (b) CPNCBZ  
 (c) CPOCBZ      (d) CQOCBZ
3. If FISH is written as EHRG in a certain code, how would JUNGLE be written in that code?  
 (a) ITMFKD      (b) ITNFKD  
 (c) KVOHMF      (d) TIMFKD
4. In a certain code, TWINKLE is written as SVHOJKD then how would FILTERS be written in that code?  
 (a) EHKSDQR      (b) EHKUDQR  
 (c) EGHUDQR      (d) GJMSFST
5. In a certain code, ROAD is written as URDG. How is SWAN written in that code?  
 (a) VXDQ      (b) VZDQ      (c) VZCP      (d) UXDQ
6. If in a certain code, FAVOUR is written as EBUPTS. How is DANGER written in that code?  
 (a) JOWJTJCMF      (b) JOWJTHAKD  
 (c) HMUHTJCMF      (d) HMUHTHAKD
7. In a certain code, FAVOUR is written as EBUPTS. How is DANGER written in that code?  
 (a) CBFFDS      (b) CBMHDS  
 (c) EBFHDS      (d) EBHHFS
8. In a certain code "CERTAIN" is written as "QDBVOJB". How is "RELATED" written in that code.  
 (a) QDKCVF      (b) KDQCEF  
 (c) DKCQEFG      (d) KDQCVFE
9. In a certain code "MADRAS" is written as "NZEQBR" then "CALCUTTA" will be written as.  
 (a) OZMBVSUB      (b) BBKBTVSB  
 (c) DZMBVUUZ      (d) DZMBVSUZ
10. In a certain code "BROWN" is written "ZPMUL" then "VIOLET" will be written as.  
 (a) TGMTCR      (b) SGMTCQ  
 (c) TGMJCQ      (d) TGWCQ
11. If "BRASS" is coded as "CTBUT", "AMIT" is coded as "BOJV" then what will be code of "ADITYA".  
 (a) BEJUZZ      (b) CEKVZB  
 (c) BFJZVC      (d) BFJVZC
12. In a certain code "UNDER" is written as "6152@" and "DEAF" is written as "52#7". How "FRAUD" is written in that code  
 (a) 7@#6#5      (b) 72#65      (c) 7@#65      (d) 6@#7#5

13. In a certain code language, 'coll tip mot' means 'singing is appreciable', 'mot baj min' means 'dancing is good' and 'tip nop baj' mean 'singing and dancing', which of the following means 'good' in that code language?
- (a) Not    (b) min  
(c) baj    (d) Cannot be determined
14. In a certain code language, 'mink yang pe' means 'fruits are ripe', 'pe lao may mink' means 'oranges are not ripe' and 'may pe nue mink' means 'mangoes are not ripe'. Which word in that language means 'mangoes'?
- (a) May    (b) pe    (c) nue    (d) mink
15. If white is called blue, blue is called red, red is called green and green is called saffron. What is the color of Indian flag's first (top)?
- (a) white    (b) Cannot be determined  
(c) Red    (d) green
16. If white is called 'blue', blue is called 'red', red is called 'yellow', yellow is called 'green', green is called 'black', black is called 'violet' and violet is called 'orange', what would be the color of human blood?
- (a) Red    (b) Green    (c) Yellow    (d) Violet
17. If orange is called 'butter', butter is called 'soap', soap is called 'ink', ink is called 'honey' and honey is called 'orange' which of the following is used for washing clothes?
- (a) Ink    (b) Butter    (c) Orange    (d) Soap
18. If blue means 'green', green means 'white', white means 'yellow', yellow means 'black', black means 'red', red means 'brown', then what is the color of milk?
- (a) Black    (b) Brown    (c) Blue    (d) Yellow
19. If black means red, red means green, green means yellow, yellow means blue, blue means pink, pink means violet. Then what is color of human blood.
- (a) red    (b) blue    (c) green    (d) white
20. In a certain code, RELIEF is written as QFKKDI. How is WELCOME written in that code?
- (a) VDKCNLM    (b) VFKENMF  
(c) VFKENPD    (d) VFKENPF
21. If in a certain language, CRASH is code as XMVNC, which word would be coded as TRAIN?
- (a) YUDNQ    (b) YWFNS  
(c) YVERIP    (d) YMVIZR
22. If BANKING is coded as LMJROMP, then how will KING be coded?
- (a) ROMQ    (b) MJRO  
(c) ROML    (d) ROMP
23. In in a certain code, RAT = 39 and CHAT = 32, then how will you code TWITTER?
- (a) 111    (b) 112    (c) 114    (d) 115
24. If COBRA can be written as 3152181, how can GORILLA be written?
- (a) 71516912121    (b) 71418912121  
(c) 71518912121    (d) 71518712121
25. If MOBILITY is coded as 46293927, then EXAMINATION is coded as
- (a) 45038401854    (b) 56149512965  
(c) 57159413955    (d) 67250623076
26. In a code language, DKFJVG is written as a DFKVJG. How will KDJFGH be written as in that language
- (a) KJDHFH    (b) KDJGHG  
(c) KJDGFH    (d) HJDGFK
27. In a code language, DSFKNS is written as a 10526104. How will KLDFJG be written as in that language
- (a) 710643    (b) 243652  
(c) 745642    (d) 716432
28. If 'GLOSSAR' is coded as 9753356 and 'EOGRAPHY' = 15968402, then 'EOLOGY' can be coded as
- (a) 15692    (b) 157592  
(c) 057592    (d) 157591
29. In a certain code language, '123' means 'bright little boy', '145' means 'tall big boy' and '637' means 'beautiful little flower'. Which digit in that language means 'flower'?
- (a) 1    (b) 3  
(c) 5    (d) none of the above
30. In a certain code, '786' means 'study very hard', '958' means 'hard work pays' and '645' means 'study and work'. Which of the following is the code 'work'?
- (a) 8    (b) 5    (c) 9    (d) 4

## Answers

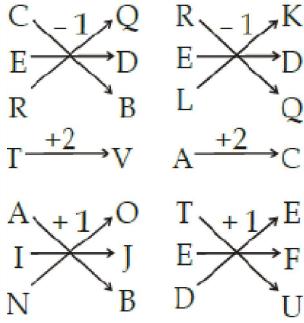
## CODING DECODING -Exercise

1. (a) 2. (b) 3. (a) 4. (b) 5. (b) 6. (c) 7. (b) 8. (b) 9. (d) 10. (c)  
 11. (b) 12. (c) 13. (b) 14. (c) 15. (b) 16. (c) 17. (a) 18. (d) 19. (c) 20. (c)  
 21. (b) 22. (d) 23. (d) 24. (c) 25. (b) 26. (c) 27. (d) 28. (b) 29. (d) 30. (b)

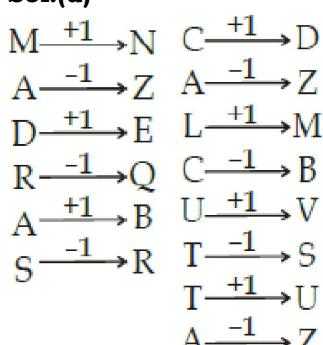
**EXERCISE - SOLUTIONS**

1. **Sol.(a)** The first letter of the word is moved one step forward to obtain the first letter of the code, while the other letters remain unaltered. So here Ans is a.
2. **Sol.(b)** Each letter in the word is moved one step forward to obtain the corresponding letter of the code. So here ans is b
3. **Sol.(a)** Each letter in the word is moved one step backward to obtain the corresponding letter of the code. So here answer is a
4. **Sol.(b)** Each letter in the word, except the middle letter, is moved one step backward while the middle letter is moved one step forward to obtain the corresponding letter of the code. So here Answer is b
5. **Sol.(b)** Each letter in the word is moved three steps forward to obtain the corresponding letter of the code. So here Answer is b
6. **Sol.(c)** Each of the first four letters in the word is moved one step backward, while each of the last five letters is moved one step forward to obtain the corresponding letter of the code. So here Answer is c
7. **Sol.(b)** Each first, third and fifth letters are each moved one step backward, while the second , fourth and sixth letters are each moved one step forward to obtain the corresponding letter of the code. So here Answer is b

8. **Sol.(b)**

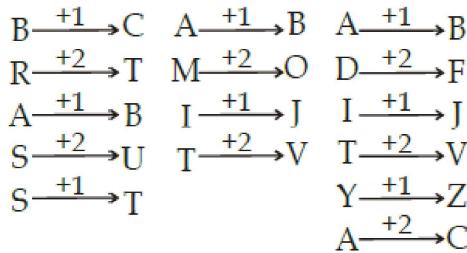


9. **Sol.(d)**



10. **Sol.(c)** Each letter of the word BROWN has been coded two letters behind in the alphabetic order. So code of VIOLET is TGMJCR. So here answer is c

11. **Sol.(b)**



So here answer is b

12. **Sol.(c)** compare UNDER and DEAF you see that DE is common and in code "52" is common in same pattern you find that code as follows:

U → 6	D → 5	F → 7
N → 1	E → 2	R → @
D → 5	A → #	A → #
E → 2	F → 7	V → 6
R → @		D → 5

So here answer is c

13. **Sol.(b)**

col tip mot => singing is appreciable ... (i)  
 Mot baj min => dancing is good ... (ii)  
 Tip nop baj => singing and dancing ... (iii)  
 Code of good is in equation (2) there are two other words dancing and is from (1) and (2) together we see that "mot" and "is" common in both cases means not is code of is. Similarly from (2) and (3) we see that "baj" and "dancing" are common means code of baj should be dancing. So we found after this process code for good be min. So here answer is b.

14. **Sol.(c)** If we take the common between words we will see mangoes possess the code of nue.

15. **Sol.(b)** As we know top of Indian flag fs colour is saffron. But here no colour of saffron is mentioned. So that is why it can't be determined.

16. **Sol.(c)** The color of the human blood is 'red' and as given, 'red' is called 'yellow'. So, the color of human blood is 'yellow'

17. **Sol.(a)** Clearly, 'soap' is used for washing the clothes. But, 'soap' is called 'ink'. So, 'ink' is used for washing the clothes.

18. **Sol.(d)** The color of milk is 'white'. But, as given, 'white' means 'yellow'. So, the color of milk is 'yellow'.

19. **Sol.(c)** We know that color of blood is Red. But here Red is coded as Green. So our answer will be Green.

20. **Sol.(c)** The first, third, fifth and seventh letters of the word are each moved one step backward; the second, fourth, and sixth letters are moved one, two and three steps forward respectively to obtain the corresponding letters of the code. So here Ans is c.

21. **Sol.(b)** Each letter of the word is five steps ahead of the corresponding letter of the code. So here ans is b.

Letter	B	A	N	K	I	N	G
Code	L	M	J	R	O	M	P

The code for KING is ROMP

23. **Sol.(d)**

A = 1, B = 2, ...., Z = 26.

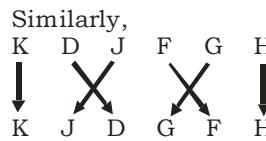
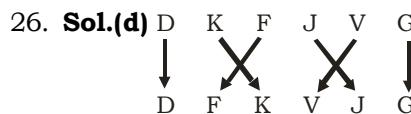
So, TWITTER = 20+23+9+20+20+5+18 = 115.

24. **Sol.(c)**

Putting A = 1, B = 2, C = 3, ..... X = 24, Y = 25, Z = 26, we have: COBRA → C/O/B/R/A → 3/15/2/18/1 → 3152181

GORILLA → G/O/R/I/L/L/A → 7/15/18/9/12/12/1 → 71518912121

25. **Sol.(b)** Let A = 1, B = 2, C = 3, c c, X = 24, Y = 25, Z = 26 Then, M = 13 = 1 + 3 = 4; O = 15 = 1 + 5 = 6; B = 2; I = 9; L = 12 = 1 + 2 = 3 T = 20 = 2 + 0 = 2; Y = 25 = 2 + 5 = 7 So, MOBILITY = 46293927. Similarly, X = 24 = 2 + 4 = 6; N = 14 = 1 + 4 = 5. So, EXAMINATION = 56149512965



Clearly here we can see how this shifting of letters has been done.

27. **Sol.(d)**

D	S	F	K	N	S
↓	↓	↓	↓	↓	↓
4	19	6	11	14	19
1+9		1+1	1+1	1+4	1+9
4	10	6	2	5	10

Reverse the sequence 10526104

KLDFJG=>716432

28. **Sol.(b)** Now if see closely the word 'EOLOGY', it can be coded by using given two code. So here Answer will be B.

29. **Sol.(d)**

'123' -> 'bright little boy' .....(i)

'145' -> 'tall big boy' .....(ii)

'637' -> 'beautiful little flower' .....(iii)

From (i) & (iii) we get '3' means 'little'. Thus, either '6' or '7' can represent 'flower'. So here answer is D.

30. **Sol.(b)**

'786'-> 'study very hard' .....(i)

'958'-> 'hard work pays'.....(ii)

'645'-> 'study and work' ....(iii)

From (ii) & (iii) we get '5' f means 'work'.

### Practice set

- If in a certain code, LUTE is written as MUTE and FATE is written as GATE, then how will BLUE be written in that code?  
(a) CLUE (b) GLUE (c) FLUE (d) SLUE
- If in a certain language, MADRAS is coded as NBESBT, how BOMBAY coded in that language?  
(a) CPNCBX (b) CPNCBZ  
(c) CPOCBZ (d) CQOCBZ
- If FISH is written as EHRG in a certain code, how would JUNGLE be written in that code?  
(a) ITMFKD (b) ITNFKD  
(c) KVOHMF (d) TIMFKD
- In a certain code, TWINKLE is written as SVHOJKD then how would FILTERS be written in that code?  
(a) EHKSDQR (b) EHKUDQR  
(c) EGHUDQR (d) GJMSFST
- In a certain code, ROAD is written as URDG. How is SWAN written in that code?  
(a) VXDQ (b) VZDQ (c) VZCP (d) UXDQ
- If in a certain language, OPERATION is written as NODQBUJPO. How is INVISIBLE written in that language?  
(a) JOWJTJCMF (b) JOWJTHAKD  
(c) HMUHTJCMF (d) HMUHTHAKD
- In a certain code, FAVOUR is written as EBUPTS. How is DANGER written in that code?  
(a) CBFFDS (b) CBMHDS  
(c) EBFHDS (d) EBHHFS
- If SUMMER is coded as RUNNER , the code for WINTER will be  
(a) SUITER (b) VIOUER  
(c) WALKER (d) SUFFER

9. In a certain code, PRODUCTIONS is written as QQPCVEUHPMT. How is ORIENTATION written in that code?  
 (a) PQJDOVBSJNO (b) PQJDOUBUJPO  
 (c) PSJFOVBSJNO (d) NSHFMVBSJN
10. If in a code, MIND becomes KGLB and AR-GUE becomes YPESC, then what will DIAGRAM be in that code?  
 (a) BGYPEYK (b) BGYPYEK  
 (c) GLPEYKB (d) LKBGYPK
11. If 'EARN' is written as 'RANE' in a certain code and 'BOND' is written as 'NODB' then how would 'TEAR' be written in the same code?  
 (a) EART (b) ATRE (c) AERT (d) REAT
12. If 'PAGES' is written as 'RDIHU' in a certain code and 'WRITE' is written as 'YUKWG' then how would 'OTHER' be written in that same code?  
 (a) PWIHS (b) RVKGU  
 (c) RWJHU (d) QWJHT
13. If in a certain language 'SPORADIC' is coded as 'QNORDJEB' then how would 'TROUBLES' be coded in that same language?  
 (a) SQTNTFMC (b) TNQSRDKA  
 (c) TNQSTFMC (d) TFQSCMFT
14. If in a certain language 'LAWN' is coded as 'JCUP' then how would 'SLIT' be coded in that same language?  
 (a) QNGV (b) QJGV (c) QNVG (d) NJGV
15. If code for 'SATELLITE' is FUBTLDSSHK, then what would be the code for 'LAUNCHING'?  
 (a) DOUBFGMHQ (b) OVBMCFMHG  
 (c) OVMBCFMHG (d) DOUBCFMHG
16. In a coded language 'FORMATION' is written as 'ZSXTJOBSL' and 'RACIAL' is written as 'XJNBJQ'. How will 'RATIONAL' be written in that same code language?  
 (a) XJOBSLJQ (b) JXOBLSLJQ  
 (c) XJOBSJLQ (d) JXOBSJLQ
17. In a coding system, 'KINETIC' is written as 'TICDKIN'. How is 'MACHINE' written in that same code?  
 (a) ENIGMAC (b) INEGMAC  
 (c) INEGCAM (d) ENIGCAM
18. In a certain language 'DESCRIBE' is coded as 'FCJSDTDE', then how 'CONSIDER' coded in that same language?  
 (a) SFEJJOPED (b) SEFJTOPED  
 (c) QFETJOPD (d) None of these
19. If A = 1, BAN = 17, then INDIA = ?  
 (a) 37 (b) 36 (c) 35 (d) 9
20. If 'Y' is coded as 2, PEN is coded as = 11-22-13 then what word can we get from 10-6-18-24-16 = ?  
 (a) QUICK (b) QUITE (c) JFRXP (d) QUACK
21. If 'GEAR' is coded as '5914' and 'ROUTE' is coded as '47289' then 'GATE' may be coded as  
 (a) 5187 (b) 5189 (c) 5289 (d) 5429
22. In a certain code, 'EAT' is written as '318' and 'CHAIR' is written as '24156', then how 'TEACHER' be written in that code language?  
 (a) 8313426 (b) 8312436  
 (c) 8321436 (d) 8312346
23. In a certain language, 'spread red carpet' means '247', 'dust one carpet' means '236', 'one red carpet' means '234'. Which of the following means 'dust' in that language?  
 (a) 2 (b) 3  
 (c) 6 (d) None of these
- Directions (24 - 27):** Here English letters are given from A to Z. Every capital letter is coded by a small letter.
- |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | B | C | D | E | F | G | H | I | J | K | L |
| j | n | l | r | i | x | a | v | e | s | o | y |
- |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| d | q | m | t | g | u | c | z | w | h | p | k | b | f |
- Below there is a group of six letter as a question and given four column. a, b, c, d already coded. You should use these column as an answer. Read carefully the letters of group and give the answer.
- |        |        |        |        |
|--------|--------|--------|--------|
| (a)    | (b)    | (c)    | (d)    |
| uhmvrj | nywgea | kegsor | vezuiv |
| nyweqa | tzeigi | tiqawe | keguqr |
| upfrvg | wqsjbl | bilpyq | wsqjbl |
| veziyu | upfurg | nywgca | kesgor |
| biqppu | uhmvjr | upfvra | blipoq |
24. BLUQSG  
 25. RWZHDG  
 26. HITREH  
 27. YCEWKN  
 28. In a certain code, 'DOWN' is written as '5 @ 9 #' and 'NAME' is written as '# 6 % 3'. How would 'MADE' be written in that code?  
 (a) %653 (b) % @ 6 3  
 (c) % 5 @ 3 (d) % @ 5 3  
 29. In a coding language, 'GUST' is coded as '@ 7 9 2', 'SNIP' is coded as '9 5 7 #', 'GAPE' is coded as '@ 5 3 5' then, What would be the code of 'SING'?  
 (a) 9 5 7 # (b) 5 9 # 5  
 (c) 9 B 7 5 (d) 9 7 5 @

**Direction (30 to 35) :** Read carefully the given information and choose the best option. In a certain code language 'her idea has merit' is written as 'for la bu na' and 'merit list has been displayed' is written as 'jo ke la si na' and 'her name displayed there' is written as 'ya si bu zo' and 'name in merit list' is written as 'na ya go ke'.

30. What is the code of 'ke'?  
(a) been (b) has (c) merit (d) list
31. What is the code of 'Idea'?  
(a) for (b) la (c) bu (d) na
32. What is the code of 'zo'?  
(a) there (b) displayed  
(c) name (d) her
33. What is the code of 'in'?  
(a) na (b) ya (c) go (d) ke
34. How can we coded 'her name is there'?  
(a) zo ya go wo (b) bu ya zo go  
(c) zo ya bu ke (d) ya zo wo bu
35. How can we code name has been displayed?  
(a) ya la ke si (b) jo si ya la  
(c) si jo ke na (d) bu ya ke la
36. If the word 'CHRISMAS' written as 'HCIRMSSA' then how can we express the

word 'CHRYSENT-HEMUMA' in the same language?

- (a) HCRYESTNEHUMMA
- (b) CHYRESTNEHUMAN
- (c) CHYRESTNEHMUAM
- (d) HCYRESTNEHUMAM
- 37. If in certain code, 'LANGUAGES' is coded as 'AGGNUAEELS' then how is 'BUILDINGS' coded in the same language?  
(a) ILNDIUGBS (b) ILNIDUGBS  
(c) INLDIGUBS (d) ILNDIUGSB
- 38. What message we can get form given code?  
TCHLI USEIC SLAUS EECCL RUEET  
(a) CLUE is clear (b) This is a secret  
(c) Lies are classic (d) Use lesser chilli
- 39. If 'VIJAY' is written as 'DIAAG' in a certain code, then how would 'SURAJ' be written in that same code?  
(a) JCIAA (b) JCAIA (c) AJCIJ (d) JCIAJ
- 40. If 'RAHUL' is written as 'IZSFO', 'SAURAV' is written as 'HZFIZE'.  
How will 'SACHIN' be written in that same coded language?  
(a) HZXMRS (b) HZXSRM  
(c) HZACDP (d) AZOPQM

## Answers

## CODING DECODING

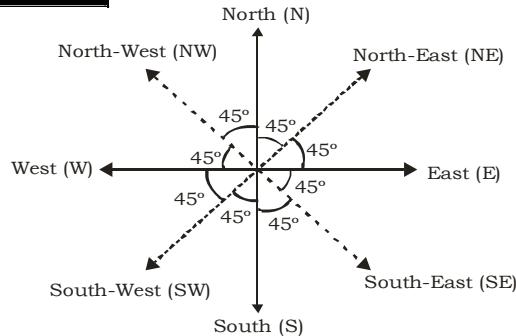
1. (a) 2. (b) 3. (a) 4. (b) 5. (b) 6. (c) 7. (b) 8. (b) 9. (a) 10. (a)
11. (c) 12. (d) 13. (c) 14. (a) 15. (b) 16. (a) 17. (b) 18. (d) 19. (a) 20. (a)
21. (b) 22. (b) 23. (c) 24. (c) 25. (c) 26. (d) 27. (d) 28. (a) 29. (d) 30. (d)
31. (a) 32. (a) 33. (c) 34. (d) 35. (b) 36. (d) 37. (b) 38. (b) 39. (a) 40. (b)

# DIRECTION AND DISTANCE

## BASIC CONCEPT

It is introduced in reasoning tests to gauge the ‘sense of direction’ of the candidate. But as the reasoning tests have become frequent in competitive examinations, the usage of such question has been increased. Today, direction tests are not only used in reasoning tests for checking ‘sense of direction’ but also for logical comprehension of particular situations

- ⦿ There are mainly four directions :  
East, West, North and South
- ⦿ There are four cardinal directions :  
North-East (N-E), North-West (N-W)  
South-West (S-W) & South-East (S-E)

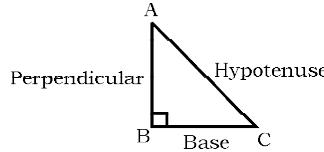


- ⦿ One should be aware of basic geometric concepts, to find the shortest distance, such as Pythagoras Theorem.

$$\text{Hypotenuse}^2 = (\text{Base})^2 + (\text{Perpendicular})^2$$

$$AC^2 = BC^2 + AB^2$$

$$AC = \sqrt{BC^2 + AB^2}$$



## Practice set questions

1. If A is to the south of B and C is to the east of B, in which direction is A with respect to C?  
(a) North-east      (b) North-west  
(c) South-east      (d) South-west
2. A is 40 m South-west of B. C is 40 m South-east of B. Then, C is in which direction of A?  
(a) East      (b) West  
(c) North-east      (d) South
3. Raj travelled from a point X straight towards east to Y at a distance of 80 metres. He turned right and walked 50 metres, then again turned right and walked 70 metres. Finally, he turned right and walked 50 metres. How far is he from the starting point?  
(a) 10 metres      (b) 20 metres  
(c) 50 metres      (d) 70 metres
4. Aditya went 15 kms to the west from his house, then turned left and walked 20 kms. He then turned East and walked 25 kms and finally turning left covered 20 kms. How far was he from his house?  
(a) 5 kms      (b) 10 kms  
(c) 40 kms      (d) 80 kms
5. From his house, Lokesh went 15 kms to the North. Then he turned West and covered 10 kms. Then, he turned South and covered 5 kms. Finally, turning to East, he covered 10 kms. In which direction is he from his house?  
(a) East      (b) West      (c) North      (d) South
6. 'Z' started walking straight towards South. He walked a distance of 15 metres and then took a left turn and walked a distance of 30 metres. Then he took a right turn and walked a distance of 15 metres again. Z is facing which direction ?  
(a) North East      (b) South  
(c) North      (d) South-West

7. Alok walked 30 metres towards east and took a right turn and walked 40 metres. He again took a right turn and walked 50 metres. Towards which direction is he from his starting point?  
 (a) South      (b) West  
 (c) South-West      (d) South-East
8. A man is facing north-west. He turns  $90^\circ$  in the clockwise direction and then  $135^\circ$  in the anticlockwise direction. Which direction is he facing now?  
 (a) East      (b) West      (c) North      (d) South
9. A man is facing north-west. He turns  $90^\circ$  in the clockwise direction, then  $180^\circ$  in the anticlockwise direction and then another  $90^\circ$  in the same direction. Which direction is he facing now?  
 (a) South      (b) South-west  
 (c) West      (d) South-east
10. I am facing east. I turn  $100^\circ$  in the clockwise direction and then  $145^\circ$  in the anticlockwise direction. Which direction am I facing now?  
 (a) East      (b) North-East  
 (c) North      (d) South-West
11. Kishankant walks 10 km towards North. From there, he walks 6km towards South. Then he walks 3km towards East. How far and in which direction is he with reference to his starting point ?  
 (a) 5km West      (b) 5km North-East  
 (c) 7km East      (d) 7km West
12. Gaurav walks 20 metres towards North. He then turns left and walks 40 metres. He again turns left and walks 20 metres. Further, he moves 20 metres after turning to the right. How far is he from his original position?  
 (a) 20 metres      (b) 30 metres  
 (c) 50 metres      (d) 60 metres
13. Radha moves towards South-east a distance of 7 km, then she moves towards West and travels a distance of 14 m. From here, she moves towards North-west a distance of 7 m and finally she moves a distance of 4 m towards East and stood at that point. How far is the starting point from where she stood?  
 (a) 3 m      (b) 4 m      (c) 10 m      (d) 11 m
14. A rat runs 20' towards East and turns to right, runs 10' and turns to right, runs 9' and again turns to left, runs 5' and then turns to left, runs 12' and finally turns to left and runs 6'. Now which direction is the rat facing ?  
 (a) East      (b) West      (c) North      (d) South
15. I am facing South. I turn right and walk 20 m. Then I turn right again and walk 10 m. Then I turn left and walk 10 m and then turning right walk 20 m. Then I turn right again and walk 60 m. In which direction am I from the starting point?  
 (a) North      (b) North-West  
 (c) East      (d) North-East
16. Rohit walked 25 metres towards South. Then he turned to his left and walked 20 metres. He then turned to his left and walked 25 metres. He again turned to his right and walked 15 metres. At what distance is he from the starting point and in which direction?  
 (a) 35 metres East      (b) 35 metres North  
 (c) 40 metres East      (d) 60 metres East
17. Starting from a point P, Sachin walked 20 metres towards South. He turned left and walked 30 metres. He then turned left and walked 20 metres. He again turned left and walked 40 metres and reached a point Q. How far and in which direction is the point Q from the point P ?  
 (a) 20 metres West      (b) 10 metres East  
 (c) 10 metres West      (d) 10 metres North
18. A man walks 1 km towards East and then he turns to South and walks 5 km. Again he turns to East and walks 2 km, after this he turns to North and walks 9 km. Now, how far is he from his starting point?  
 (a) 3 km      (b) 4 km      (c) 5 km      (d) 7 km
19. From his house, Lokesh went 15 kms to the North. Then he turned West and covered 10 kms. Then, he turned South and covered 5 kms. Finally, turning to East, he covered 10 kms. In which direction is he from his house?  
 (a) East      (b) West      (c) North      (d) South
20. Two buses start from the opposite point of a main road, 150 kms apart. The first bus runs for 25 kms and takes a right turn and then runs for 15 kms. It then turns left and runs for another 25 kms and takes the direction back to reach the main road. In the meantime, due to a minor breakdown, the other bus has run only 35 kms along the main road. What would be the distance between the two buses at this point ?  
 (a) 65 kms      (b) 75 kms  
 (c) 80 kms      (d) 85 kms
21. Sohan started from point X and travelled forward 8 km up to point Y, then turned

- towards right and travelled 5km up to point Z, then turned right and travelled 7km up to point A and then turned towards right and travelled 5km up to B. What is the distance between points B and X?
- (a) 1 km (b) 2 km (c) 3 km (d) 4 km
22. Raj starts from his office facing west and walks 100 m straight, then takes a right turn and walks 100 m. Further he takes a left turn and walks 50 m. In which direction is Raj now from the starting point?
- (a) North-East (b) South-West  
(c) West (d) North-West
23. From a point 'Q' Alok starts walking towards south and after walking 25 m, he turns to his left and walks 40 m and reaches point 'F'. In which direction is he with reference to the starting point 'Q'?
- (a) South-West (b) North-East  
(c) North-West (d) South-East
24. Ram is facing north. He proceeded straight for a distance of 10km, then he turned left and proceeded straight a distance of 15km. At last he turned left again and proceeded for another 10km. How far is he from the starting point ?
- (a) 10km (b) 5km (c) 12km (d) 15km
25. Mohan proceeded straight in the direction of north for a distance of 3 km from his house. Then he turned right and proceeded straight for a distance of 2km. Then he turned right again and proceeded straight for a distance of 5 km. Then he turned right twice and proceeded straight for a distance of 2-2km respectively.Which direction is he facing now?
- (a) North (b) South (c) West (d) East
26. Two men 'A' and 'B' Starts their' Journey from a special point 'X'. 'A' walks 4 km in the direction of west. 'B' walks 1 km in the direction of north then he turns left and walks straight 4 km. 'A' turns right and walks 2 km straight. How far is now 'A' from 'B'?
- (a) 1 km (b) 2 km (c) 3 km (d) 4 km
27. Morning time, Sohan goes towards sun for a distance of 50m. Then he turns right twice and goes straight 40m and 20m respectively. At last he turns once more right and goes straight for the ditance of 40m.  
How far is he now from his starting point ?
- (a) 20 m (b) 30 m (c) 50 m (d) 60 m
28. Rahul is facing west. Then he turned right three times and walked straight for a distance of 15 km, 15 km, and 35 km respectively, How far is he from starting point ?
- (a) 15 km (b) 25 km (c) 30 km (d) 20 km
- Direction (29 – 31):** Read the following information for answering the questions that follows :
- In a playground, A, B, C, D, & E are standing as described below facing the North.
- (1) B is 50m to the right of D.
  - (2) A is 60m to the South of B.
  - (3) C is 40m to the west of D.
  - (4) E is 80m to the north of A.
29. If a boy walks from C, meet D followed by B, A and then E, how many meters has he walked if he has travelled the straight distance all through?
- (a) 120 (b) 150 (c) 170 (d) 230
30. What is the minimum distance (in metre approximately) between C and E?
- (a) 53 (b) 78 (c) 92 (d) 120
31. Who is to the South-East of the person who is to the left of D?
- (a) A (b) B (c) C (d) E
32. A man is facing west direction. He turns twice in clockwise direction  $45^\circ$  and  $180^\circ$  respectively. He then turns  $270^\circ$  in the anticlockwise direction. which direction is facing now?
- (a) South (b) North-East  
(c) West (d) South-West
33. Four aeroplanes of Air Force viz, A, B, C, D, started for a demonstration flight towards east. After flying 50 km planes A and D flew towards right, planes B and C flew towards left. After 50km, planes B and C flew towards their left, planes A and D also towards their left. In which directions are the aeroplanes A, B, D, C repectively flying now?
- (a) East, West, East, West  
(b) West, East, West, East  
(c) North, South, East, West  
(d) South, North, West, East
- Direction (34 – 35):** There are 6 check-posts A, B, C, D, E and F. Check-post F is 15km to the north of D, which is 25 km to the North-East of B. Check post A is 5 km west of E and 15 km to the South-West of C. Check post B, A and E are in a straight line and A is to the east of B. The check post B and E are 30 km apart from each other.
34. If a jeep moves from E to F, via A, B and D, how much distance will it have to cover?
- (a) 70 km (b) 120 km  
(c) 100 km (d) 90 km
35. Which check post is to the South-West of D?
- (a) A (b) B (c) C (d) D

36. Vishesh goes in north direction for 5 km. Then he turns right and goes 5 km straight. Then he turns left and goes 10km straight. At last, he turned clockwise direction  $45^\circ$  and goes straight. In which direction is Vishesh going now?
- (a) South                      (b) South-West  
(c) North-East                (d) North
37. Raju starts his journey in north-west direction 2 km straight. Then he turns  $90^\circ$  clockwise and walks 2 km straight. Then once more he turns  $90^\circ$  clockwise and walks 2km straight. In which direction is Raju from his starting point?
- (a) West-South                (b) North-East  
(c) East-South                (d) West
38. A watch reads 3 : 30 If the minute hand points 'North'. In which direction will the hour hand point?
- (a) North-West                (b) North  
(c) West                        (d) East
39. A watch reads 9:00. If the minute hand points 'North' then minute hand turned  $135^\circ$  clockwise. Then what is the time shown by the watch and in which direction will the minute hand points ?
- (a) South-East, 9:22:5  
(b) South, 9:30  
(c) West- North, 9 : 10  
(d) South-West, 9:40
40. A child is looking for his mother. He went 80 meters in the East before turning to his right. He went 20 meters before turning to his right again to trace his mother at his married sister's house, 20 meters from this point. His mother was not there. From there he went 100 meters to his north where he met his mother who was shopping there in the market. How far did the son meet from the starting point?
- (a) 80 m                        (b) 60 m                        (c) 100 m                        (d) 140 m
41. Satish starts from A and walks 2 km east upto B and turns sothwards and walks 1 km upto C. At C he turns to east and walks 2 km upto D.  
He then turns northwards and walks 4 km to E. How far is he from his starting point?
- (a) 3 km                        (b) 4 km                        (c) 5 km                        (d) 6 km
42. A man starts his journey from a point 'X'. He goes in north direction for 5 km. Then he turns his left and goes 2 km, then he turns his right twice and goes straight 3 km and 2 km respectively. How far is he from his starting point?
- (a) 7 km                        (b) 8 km                        (c) 9 km                        (d) 6 km
43. A lady runs 12 km towards north then 6 km towards south and then 8 km east. How far is she from her starting point and in which direction?
- (a) 5 km North-East            (b) 5 km East  
(c) 10 km North-East          (d) 10 km West
44. Two men start walking from one point towards opposite direction.  
After walking 3 km straight the both turn right wards and walk straight for the distance of 4km. How far are they both from each-other?
- (a) 8 km                        (b) 7 km                        (c) 9 km                        (d) 10 km
45. Point 'K' is situated in noth-west direction from 'P' at the distance of 2 km. Point 'R' is situated in south-West direction from 'K' at the distance of 2 km. Point 'M' is situated in North-West direction form 'R' at the distance of 2km. At last 'T' is situated in South-West direction from 'M' at the distance of 2 km. In which direction is 'T' from point 'P'?
- (a) East                        (b) West                        (c) South                        (d) North
46. If South-East is called East, South-West is called South and in the same way directions are changing.Then what would we say the North direction?
- (a) North-West                (b) North-East  
(c) South-West                (d) South-East
47. On a crossing, there is symbol telling the direction of roads as North, South, East, West. The symbol turned due to an accident. The part which is telling north direction now tells the west direction. If a traveller goes to south direction with the help of turning symbol. Then really, in which direction is he going now?
- (a) West                        (b) East  
(c) North                        (d) None of there
- Direction (48 – 50):** Based on informations given below. Read carefully and choose best alternatives.
- In a playground five friends A, B, C, D and E are standing facing north in order as described below.
- B is standing at the right of D at distance of 50 m.
  - A is standing in the south direction of B at 60 m distance.
  - 'C' is in the west of 'D' at the distance of 40 m.
  - 'E' is in the north of A at 80 m distance
48. If a boy, who stands near 'C' starts walking and reach to 'D' then B, A, E respectively. How many km he walk from C to E?
- (a) 120 m                        (b) 150 m  
(c) 170 m                        (d) 230 m

49. What is the distance between C and E?  
 (a) 53 m (b) 78 m (c) 92 m (d) 120 m
50. Who is in the South-East from the person who is left from 'D'  
 (a) A (b) B (c) C (d) D
51. Five cities are near to each-other. These cities are A, B, C, D, E. A is to west of B. C is to south of A. E is in North of B. D is in the east of E. In which direction is C from D?  
 (a) North-West (b) South-East  
 (c) South-West (d) None of above option
52. Vijay Kumar walks from his house in the north direction a distance of 15 km. Then he turns west direction and walks straight 10 km. At last he turns south direction and walks straight 5 km. How far and in which direction is he from his house?  
 (a) 10 km, East (b) 5 km, West  
 (c) 20 km, North (d) None of these
53. Raju is the neighbour of Ramu and he lives in South-East at the distance of 100 m. Verma is the neighbour of Raju and he lives in south-west direction and 100 m distance from Raju. Mr. Singh is the neighbour of Ramu and lives 100 m in North-East direction from Ramu. In which direction is Mr. Singh living from Mr. Verma?  
 (a) North-West (b) North-East  
 (c) South (d) South-West

**Direction (54 – 56):** Each Question is based on information given below: -

Point 'D' is in west direction from 'A' at the distance of 14m. Point 'B' is in south direction from 'D' also a distance of 4m. Point 'F' is situated 9 m. in south from 'D'. Point E is situated 7m in east from 'B'. Point 'C' is in north from 'E' at the distance of 4m. Point 'G' is in south from 'A' at the distance of 4 m.

54. Which is in the straight direction out of the following?  
 (a) D, E, A (b) E, G, C  
 (c) D, B, G (d) E, G, B
55. In which direction is 'A' from 'C'?  
 (a) East (b) West (c) North (d) South
56. Any person from point 'F' starts walking towards north at the distance of 5 m then turns his rightwards then to whom he will reach first out of the following?  
 (a) G (b) D (c) E (d) A

**Directions (57 – 60):** Study the informations and answer the question given below:

Eight friends, A, B, C, D, E, F, G and H are sitting in a square diningtable. On one side of table, only two friends can sit. All the friends are sitting at equal distance from each other.

A is facing south. 'B' and 'F' are sitting opposite side. 'F' is not facing in that direction in which 'A' and 'H' are facing, 'H' is facing west direction. 'D' and 'C' are both sitting at same side. 'C' is facing to the neighbour of 'H'. E is F's neighbour

57. In which direction is 'G' facing?  
 (a) East (b) West (c) North (d) South
58. In which direction is 'F' facing?  
 (a) East (b) West (c) North (d) South
59. In which direction is 'D' facing?  
 (a) East (b) West (c) North (d) South
60. In which direction is 'B' facing?  
 (a) East (b) West (c) North (d) South

### Previous year questions

1. Going 50 m to the South of her house, Radhika turns left and goes another 20 m. Then, turning to the North, she goes 30 m and then starts walking to her house, in which direction is she walking now?  
 (a) North-west (b) North  
 (c) South-east (d) East
2. I am facing South. I turn right and walk 20 m. Then I turn right again and walk 10 m. Then I turn left and walk 10 m and then turning right walk 20 m. Then I turn right again and walk 60 m. in which direction am I from the starting point?  
 (a) North (b) North-west  
 (c) East (d) North-east
3. Aditya starts from his house towards West. After walking a distance of 30 metres, he turned towards right and walked 20 metres. He then turned left and moving a distance of 10 metres, turned to his left again and walked 40 metres. He now turns to the left and walks 5 metres. Finally he turns to his left. In which direction is he walking now?  
 (a) North (b) South  
 (c) East (d) South-west
4. You go North, turn right, then right again and then go to the left. In which direction are you now?  
 (a) North (b) South (c) East (d) West
5. Deepak starts walking straight towards east. After walking 75 meters, he turns to the left and walks 25 metres straight. Again he turns to the left, walks a distance of 40 meters straight, again he turns to the left and walks a distance of 25 metres. How far is he from the starting point?  
 (a) 25 metres (b) 50 metres  
 (c) 115 metres (d) None of these

6. Kunal walks 10 kilometres towards North. From there, he walks 6 kilometres towards South. Then, he walks 3 kilometres towards East. How far and in which direction is he with reference to his starting point?
- 5 kilometres West
  - 5 kilometres North-east
  - 7 kilometres East
  - 7 kilometres West
7. Rohan walks a distance of 3 km towards North, then turns to his left and walks for 2 km. He again turns left and walks for 3 km. At this point he turns to his left and walks for 3 km. How many kilometers is he from the starting point?
- 1 km
  - 2 km
  - 3 km
  - 5 km
8. Manick walked 40 metres towards North, took a left turn and walked 20 metres. He again took a left turn and walked 40 metres. How far and in which direction is he from the starting point?
- 20 metres East
  - 20 metres North
  - 20 metres South
  - None of these
9. Namita walks 14 metres towards west, then turns to her right and walks 14 metres and then turns to her left and walks 10 metres. Again turning to her left she walks 14 metres. What is the shortest distance (in metres) between her starting point and the present position?
- 10
  - 24
  - 28
  - 38
10. A man leaves for his office from his house. He walks towards East. After moving a distance of 20 m, he turns South and walks 10 m. Then he walks 35 m towards the West and further 5 m towards the North. He then turns towards East and Walks 15 m. What is the straight distance (in Metres) between his initial and final positions?
- 0
  - 5
  - 10
  - Cannot be determined
11. Radha moves towards South-east a distance of 7 km, then she moves towards West and travels a distance of 14 m. From here, she moves towards North-west a distance of 7 m and finally she moves a distance of 4 m towards East and stood at that point. How far is the starting point from where she stood?
- 3 m
  - 4 m
  - 10 m
  - 11 m
12. Amit walked 30 metres towards East, took a right turn and walked 40 metres. Then he took a left turn and walked 30 metres.
- In which direction is he now from the starting point?
- North-east
  - East
  - South-east
  - South
13. A person starts from a point A and travels 3 km eastwards to B and then turns left and travels thrice that distance to reach C. He again turns left and travels five times the distance he covered between A and B and reaches his destination D. The shortest distance between the starting point and the destination is
- 12 km
  - 15 km
  - 16 km
  - 18 km
14. A girl leaves from her home. She first walks 30 metres in North-west direction and then 30 metres in South-west direction. Next, she walks 30 metres in South-east direction. Finally, she turns towards her house.
- In which direction is she moving?
- North-east
  - North-west
  - South-east
  - South-west
15. Sanjeev walks 10 metres towards the South. Turning to the left, he walks 20 metres and then moves to his right. After moving a distance of 20 metres, he turns to the right and walks 20 metres. Finally, he turns to the right and moves a distance of 10 metres. How far and in which direction is he from the starting point?
- 10 metres North
  - 20 metres South
  - 20 metres North
  - 10 metres South
16. Kashish goes 30 metres North, then turns right and walks 40 metres, then again turns right and walks 20 metres, then again turns right and walks 40 metres. How many metres is he from his original position?
- 0
  - 10
  - 20
  - 40
17. A man walks 30 metres towards South. Then, turning to his right, he walks 30 metres. Then, turning to his left, he walks 20 metres. Again, he turns to his left and walks 30 metres. How far is he from his initial position?
- 20 metres
  - 30 metres
  - 60 metres
  - None of these
18. Rohit walked 25 metres towards South. Then he turned to his left and walked 20 metres. He then turned to his left and walked 25 metres. He again turned to his right and walked 15 metres. At what dis-

- tance is he from the starting point and in which direction?
- (a) 35 metres East (b) 35 metres North  
(c) 40 metres East (d) 60 metres East
19. Starting from a point P, Sachin walked 20 metres towards South. He turned left and walked 30 metres. He then turned left and walked 20 metres. He again turned left and walked 40 metres and reached a point Q. How far and in which direction is the point Q from the point P?
- (a) 20 metres West (b) 10 metres East  
(c) 10 metres West (d) 10 metres North
20. Ramakant walks northwards. After a while, he turns to his right and a little further to his left. Finally, after walking a distance of one kilometer, he turns to his left again. In which direction is he moving now?
- (a) North (b) South (c) East (d) West
21. A man is facing south. He turns  $135^\circ$  in the anti clockwise direction and then  $180^\circ$  in the clockwise direction. Which direction is he facing now?
- (a) North-east (b) North-west  
(c) South-east (d) South-west
22. A man is facing north-west. He turns  $90^\circ$  in the clockwise direction and then  $135^\circ$  in anti clockwise direction. Which direction is he facing now?
- (a) East (b) West (c) North (d) South
23. A man is facing towards west and turns through  $45^\circ$  clockwise, again  $180^\circ$  clockwise and then turns through  $270^\circ$  anti clockwise. In which direction is he facing now?
- (a) West (b) North-east  
(c) South (d) South-west
24. A river flows west to east and on the way turns left and goes in a semicircle round a hillock, and then turns left at right angles. In which direction is the river finally flowing?
- (a) West (b) East (c) North (d) Sourh
25. I am Standing at the centre of a circular field. I go down south to the edge of the field and then turning left I walk along the boundary of the field equal to three-eights of its length. Then I turn left by  $45^\circ$  and go right across to the opposite point to the boundary. In which direction am I from the starting point?
- (a) North-west (b) North  
(c) South-west (d) West
26. I am facing east. I turn  $100^\circ$  in the clockwise direction and then  $145^\circ$  in the anti clockwise direction. Which direction am I facing now?
- (a) East (b) North-east  
(c) North (d) South-west
27. A rat runs 20' towards East and turns to right, runs 10' and turns to right, runs 9' and again turns to left, runs 5' and then turns to left, runs 12' and finally turns to left and runs 6'. Now, which direction is the rat facing?
- (a) East (b) West (c) North (d) South
28. Maya starts at point T, walks straight towards North to point U which is 4 ft away. She turns left at  $90^\circ$  and walks 1 ft to Q, turns left at  $90^\circ$  and goes to V, who is 1 ft away and once again turns  $90^\circ$  right and goes to R, 3 ft away. What is the distance between T and R?
- (a) 4 ft (b) 5 ft (c) 7 ft (d) 8 ft
29. A villager went to meet his uncle in another village situated 5 km away in the North-east direction of his own village. From there he came to meet his father-in-law living in a village situated 4 km in the south of his uncle's village. How far away and in what direction is he now?
- (a) 3 km in the North  
(b) 3 km in the East  
(c) 4 km in the East  
(d) 4 km in the West
30. Aditya walked 15 m. towards south took a right turn and walked 3 m. He took a right turn again and walked 15 m before stopping. Which direction did he face.
- (a) East (b) West (c) North (d) South

### Distinct Questions

- Jai Prakash started walking towards south from the point A, walked 20 m and reached a point B, Again, he turned left and walked 20 m and reached a point C. Now he turned  $45^\circ$  anticlockwise, walked a distance of  $20\sqrt{2}$  m and reached a point D. What approximately is the shortest distance between the point A and D?
 

(a) Can't say (b) 30 m  
(c) 40 m (d)  $40\sqrt{2}$  m
- Rishu started walking towards East from a point 'X', walked 250 metres and reached the point 'P'. Again, he turned towards South, walked 50 metres and

- reached point Q. Again he turned towards east and walked 250 metres and reached point R. He again turned South, walked 50 metres and reached point S. What is the shortest distance between X and S?
- (a) 509.9 metres (b) 1100 metres  
(c) 561.2 metres (d) 590.9 metres
3. A and B are standing at a distance of 20 km from each other on a straight East-West road. A and B start walking simultaneously, eastwards and westwards respectively, and both cover a distance of 5 km. Then A turns to his left and walks 10 km. B turns to his right and walks 10 km at the same speed. Then both turn to their left and cover a distance of 5 km at the same speed. What will be the distance between them?
- (a) 10 km (b) 5 km  
(c) 20 km (d) 25 km
4. After walking 6 km, I turned right and covered a distance of 2 km, then turned left and covered a distance of 10 km. In the end, I was moving towards the north. From which direction did I start my journey?
- (a) North (b) South (c) East (d) West
5. A boy ride his bicycle northwards, then turned left and ride one km and again turned left and ride 2 km. He found himself exactly one km west of his starting point. How far did he ride northwards initially?
- (a) 1 km (b) 2 km (c) 3 km (d) 5 km
6. Anuj started walking positioning his back towards the sun. After sometime, he turned left, then turned right and then to-
- wards the left again. In which direction is he going now?
- (a) North or South (b) East or West  
(c) North or West (d) South or West
7. A mountaineer starts from Camp A and proceeds East to Camp B 4 km away. From camp B he proceeds to camp C, 5 km to the south. From there, he returns and proceeds 12 km to camp 'D' via camps B and A. How far is he away from the camp A?
- (a) 3 km (b) 6 km (c) 5 km (d) 12 km
8. Sunil walks towards the East from point A turns right at point B and walks the same distance as he walked towards the East. He now turns left, walks the same distance again and finally makes a left turn and stops at point C after walking the same distance. The distance between A and C is how many times as that of A and B?
- (a) Can't be determined  
(b) Two  
(c) Three  
(d) Four
9. Shyam walked 6 metres facing towards East, then took a right turn and walked a distance of 9 metres. He then took a left turn and walked a distance of 6 metres. How far is he from the starting point?
- (a) 15 metres (b) 21 metres  
(c) 18 metres (d) Can't be determined
10. Ravi starts from his house and moves towards south. He walks 100 m, then turns left and walks 200 m, turns right and walks 500. How far is he from his house?
- (a) 400 5m (b) 800 m  
(c) 200 10m (d) 200 2 m

## **Answers**

## **DIRECTION AND DISTANCE**

1. (d) 2. (a) 3. (a) 4. (b) 5. (c) 6. (b) 7. (c) 8. (b) 9. (d) 10. (b)
11. (b) 12. (d) 13. (c) 14. (c) 15. (d) 16. (a) 17. (c) 18. (c) 19. (c) 20. (a)
21. (a) 22. (d) 23. (d) 24. (d) 25. (a) 26. (a) 27. (b) 28. (b) 29. (d) 30. (c)
31. (a) 32. (d) 33. (a) 34. (a) 35. (b) 36. (c) 37. (b) 38. (a) 39. (a) 40. (c)
41. (c) 42. (b) 43. (c) 44. (d) 45. (b) 46. (a) 47. (a) 48. (d) 49. (c) 50. (a)
51. (c) 52. (d) 53. (b) 54. (d) 55. (a) 56. (c) 57. (b) 58. (c) 59. (a) 60. (d)

### **Previous year questions**

1. (a) 2. (d) 3. (a) 4. (c) 5. (d) 6. (b) 7. (a) 8. (d) 9. (b) 10. (b)
11. (c) 12. (c) 13. (b) 14. (a) 15. (b) 16. (b) 17. (d) 18. (a) 19. (c) 20. (d)
21. (d) 22. (b) 23. (d) 24. (b) 25. (c) 26. (b) 27. (c) 28. (b) 29. (b) 30. (?)

### **Distinct Questions**

1. (c) 2. (a) 3. (a) 4. (b) 5. (b) 6. (a) 7. (a) 8. (b) 9. (a) 10. (c)

# BLOOD RELATION

## BASIC CONCEPT

Blood relationship means persons connected by relations like - father, mother, son-daughter, brother-sister, grand father, grand mother, uncle-aunt, nephew-niece, brother-in-law, sister-in-law etc. The list can go on and on adding members from father's side and mother's side etc.

Question in Test of Reasoning on Family/Blood relationship are about the relationship of a particular person with another person of the family, based on the chain of relationships between other members of that family.

Family/Blood Relation Tests are an exercise to test the candidates ability to comprehend and come to the crux of an issue from complex, lengthy and unclear data.

### Relations from Paternal Side

- Father's Father → Grandfather
- Father's Mother → Grand mother
- Father's Sister → Aunt
- Father's Brother → Uncle
- Wife of Uncle → Aunt
- Husband of Aunt → Uncle
- Children of Uncle/Aunt → cousin

### Relations from Maternal Side

- Mother's father → Maternal grandfather
- Mother's mother → Maternal grand mother
- Mother's brother → Maternal Uncle
- Mother's sister → Aunt
- Children of maternal Uncle → Cousin

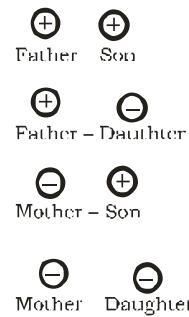
- Wife of maternal uncle → Maternal Aunt

### Other Relations

- Grand father's son → Father/Uncle
- Grand father's only son → Father
- Grand mother's only son → Father
- Grand father's (daughter-in-law) → Mother
- Father's son → brother
- Father's daughter → Sister
- Son's wife → Daughter-in-law
- Daughter's husband → Son-in-law
- Brother's/Sister's son → Nephew
- Brother's/sister's daughter → Niece
- Brother's wife → Sister-in-law
- Sister's husband → Brother-in-law
- Husband's or wife brother → Brother-in-law
- Grandson's or grand daughter's daughter → Great grand daughter.

□ We can denote male candidates with (+) sign and female candidate with (-) sign.

**Some examples are :-**

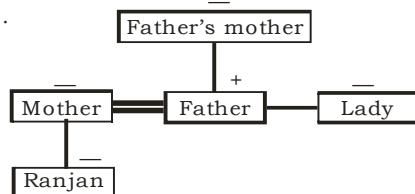


## SOLVED EXAMPLES

1. Pointing out to a lady, Rajan said. "She is the daughter of the woman who is the mother of the husband of my mother." Who is the lady to Rajan ?

- (a) Aunt                    (b) Grand daughter  
 (c) Daughter                (d) Sister

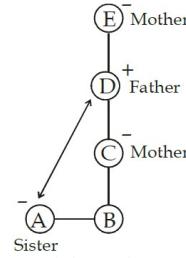
Sol.



2. A is B's sister. C is B's mother. D is C's father. E is D's mother. Then how is A related to D?

- (a) Daughter                (b) Grand daughter  
 (c) Grand mother           (d) Grand father

Sol.



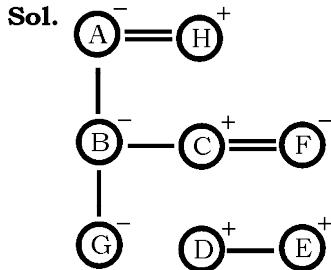
A is granddaughter of D.

Hence, lady is the sister of Rajan's father. So, she is his aunt.

**Direction (3-5):** A is the mother of B. B is the sister of C. D is the son of C.

E is the brother of D. F is the mother of E. G is the grand daughter of A.  
H has only two children B and C.

3. How is F related to H ?  
(a) Son-in-law      (b) Daughter-in-law  
(c) Father-in-law    (d) Grand daughter
4. How is C related to E ?  
(a) Father            (b) Son  
(c) Mother           (d) Cousin brother
5. Who is the mother of G ?  
(a) C                  (b) B  
(c) F                  (d) Either B or F



(3); Option (b)

From above figure, it is clear that F is daughter-in-law of H

(4); Option (a)

From the above figure, it is clear that C is father of E.

(5); Option (d)

From the above diagram it is clear that either B or F is the mother of G.

**Direction (6-8) :** Read carefully the following information and give answer.

'A-B' means A is father of B.

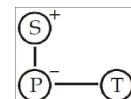
'A+B' means A is daughter of B.

'A÷B' means A is son of B.

'A×B' means A is wife of B

6. In statement P + S - T. How P is related to T?  
(a) Sister               (b) Wife  
(c) Son                  (d) Daughter

**Sol.** P + S → P is daughter of S  
S / T → S is father of T.

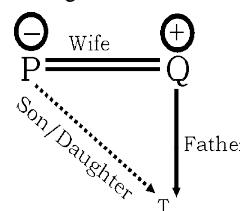


Hence, P is sister of T.

7. In statement P × Q - T. How is T related to P?  
(a) Daughter           (b) Mother  
(c) Sister              (d) Cannot determine

**Sol.** P × Q → P is wife of Q

Q - T → Q is father of T



T may be the son or daughter of P.

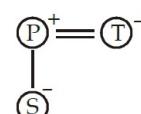
Hence, answer is (d) cannot determine.

8. From the following which means that T is wife of P ?

- (a) P × S ÷ T               (b) P ÷ S × T  
(c) P - S ÷ T              (d) P - S + T

**Sol.** P - S → P is father of S

S + T → S is daughter of T



Hence, T is wife of P

Answer is (d) option.

### Practice set

1. Pointing to a photograph, a man said, "I have no brother or sister but that man's father is my father's son." Whose photograph was it?  
(a) His own               (b) His son  
(c) His father's           (d) His nephew's
2. Pointing towards a boy, Veena said, "He is the son of only son of my grandfather." How is that boy related to Veena?  
(a) Aunt                  (b) Uncle  
(c) Mother               (d) Data inadequate
3. Introducing Reena, Monika said, "She is the only daughter of my father's only daughter." How is Monika related to Reena?  
(a) Aunt                  (b) Niece  
(c) Cousin               (d) Data inadequate
4. Pointing to a man a woman said, "His mother is the only daughter of my mother." How is the woman related to the mother?  
(a) Mother               (b) Daughter  
(c) Sister                (d) Grandmother
5. If X is the brother of the son of Y's son, how is X related to Y?  
(a) Son                   (b) Brother  
(c) Cousin               (d) Grandson
6. Pointing towards Rita, Nikhil said, "I am the only son of her mother's son." How is Rita related to Nikhil?  
(a) Aunt                  (b) Niece  
(c) Mother               (d) Cousin
7. Pointing to a lady, a man said, "The son of her only brother is the brother of my wife." How is the lady related to the man?  
(a) Mother's sister



28. Pointing to a photograph, a person tell his friend, "She is the grand daughter of the elder brother of my father." How is the girl in the photograph related to this man?  
 (a) Niece                      (b) Sister  
 (c) Aunt                        (d) Sister-in-law
29. A man said to a lady, "Your mother's husband's sister is my aunt." How is the lady related to the man?  
 (a) Daughter                   (b) Grand daughter  
 (c) Cousin                     (d) Sister or Cousin.
30. If Neena says, "Anita's father Raman is the only son of my father-inlaw Mahipal", then how is Bindu who is sister of Anita, related to Mahipal?  
 (a) Niece                      (b) Daughter  
 (c) Wife                        (d) None of these
31. Pointing to the woman in the picture, Rajiv said, "Her mother has only one grandchild whose mother is my wife." How is the woman in the picture related to Rajiv?  
 (a) Cousin                     (b) Wife  
 (c) Sister                      (d) Data inadequate
32. A girl introduced a boy as the son of the daughter of the father of her uncle. The boy is girl's  
 (a) Brother                    (b) Son  
 (c) Uncle                      (d) Son-in-law
33. Pointing to a gentleman, Deepak said, "His only brother is the father of my daughter's father." How is the gentleman related to Deepak?  
 (a) Grandfather                (b) Father  
 (c) Brother-in-law            (d) Uncle
34. A is B's son C's father is F. F is D's son and B is D's daughter. How is A related to F ?  
 (a) Nephew                    (b) Niece  
 (c) Cousin                     (d) Son-in-law
35. Pointing to a photograph, a lady told Pramod, "I am the only daughter of this lady and her son is your maternal uncle." How is the speaker related to Pramod's father?  
 (a) Sister-in-law              (b) Wife  
 (c) Either (a) or (b)        (d) Neither (a) nor (b)
36. Pointing to a person, a man said to a woman, "His mother is the only daughter of your father." How was the woman related to the person?  
 (a) Aunt                        (b) Mother  
 (c) Wife                        (d) Daughter
37. Pointing to a man in a photograph, a woman said, "His brother's father is the only son of my grandfather." How is the woman related to the man in the photograph?  
 (a) Mother                     (b) Aunt  
 (c) Sister                      (d) Daughter
38. If B is the son of A and if A is not the father of B, what is A to B ?  
 (a) Father                      (b) Mother  
 (c) Grandfather               (d) Grandmother
39. Pointing to an old man, Kunal said, "His son is my son's uncle." How is the old man related to Kunal?  
 (a) Brother                     (b) Uncle  
 (c) Father                      (d) Grandfather
40. Pointing to a photograph, a woman says, "This man's son's sister is my mother-in-law." How is the woman's husband related to the man in the photograph?  
 (a) Grandson                  (b) Son  
 (c) Son-in-law                (d) Nephew
- Directions (41 – 45):** Study the following information carefully and answer the questions given below:-
- (i) 'P × Q' means P is the brother of Q
  - (ii) 'P – Q' means P is the mother of Q
  - (iii) 'P + Q' means P is the sister of Q
  - (iv) 'P ÷ Q' means P is the father of Q
41. How is W related to M in the expression  $W + T \div R \times M$  ?  
 (a) Maternal Aunt            (b) Paternal Aunt  
 (c) Grand mother            (d) Data inadequate
42. How is K related to D in the expression  $D - J + M \div K$ ?  
 (a) Grandson                  (b) Nephew  
 (c) Niece                      (d) Data inadequate
43. How is R related to M in the expression  $M + J \div T \times R$ ?  
 (a) Nephew                    (b) Niece  
 (c) Nephew of Niece        (d) Data inadequate
44. Which of the following expression represents T is nephew of J ?  
 (a)  $J \times M - F + T$         (b)  $J \times M - F + T$   
 (c)  $J \times M \div F \times T$     (d) None of these
45. Which of the following expression represents B is the paternal uncle of H ?  
 (a)  $B \times M + H$             (b)  $B + H \div H$   
 (c)  $B \times M + H$             (d)  $B + M - H$
46. P's father Q is B's paternal uncle and A's husband M is P's paternal uncle. How is A related to B?  
 (a) Cousin                    (b) Aunt  
 (c) Mother                    (d) Data inadequate
47. Shobha is the niece of Ashish. Ashish's mother is Priya. Kamla is Priya's mother. Kamla's husband is Hari. Krishna is the mother-inlaw of Hari. How is Shobha related to Hari?  
 (a) Daughter  
 (b) Great grand daughter  
 (c) Grand niece  
 (d) Great grandson's daughter

48. Kalyani is mother-in-law of Veena who is sister-in-law of Ashok. Dheeraj is father of Sudeep, the only brother of Ashok. Veena is the only daughter of her parents. How is Kalyani related to Ashok?  
 (a) Cousin                    (b) Wife  
 (c) Mother-in-law            (d) None of these
49. Nandini is only daughter of Madan's sister Sangita's brother. How is Nandini related to Madan?  
 (a) Daughter                (b) Niece  
 (c) Cousin                  (d) Niece or Daughter
50. Pointing to Mona, Swarup says, "She is the daughter of only one child of my grandfather. "How is Mona related to Swarup?  
 (a) Aunt                    (b) Cousin  
 (c) Data inadequate      (d) Sister
- Directions (51 – 53):** Read the following information carefully and answer the questions given below:
- A is the son of B. C, B's sister, has a son D and a daughter E. F is the maternal uncle of D.
51. How is A related to D?  
 (a) Cousin                    (b) Nephew  
 (c) Uncle                    (d) Brother
52. How is E related to F?  
 (a) Sister                    (b) Daughter  
 (c) Niece                    (d) Wife
53. How many nephews does F have?  
 (a) Nil                        (b) One  
 (c) Two                      (d) Three

**Directions (54 – 55):** Read the following information and answer the questions given below it:

A is the father of C but C is not his son. E is the daughter of C. F is the spouse of A. B is the brother of C. D is the son of B. G is the spouse of B. H is the father of G.

54. Who is the grandmother of D?  
 (a) A                        (b) C                    (c) F                    (d) H

55. Who is the son of F?  
 (a) B                        (b) C                    (c) D                    (d) E

**Directions (56 – 67):** Following information is given about a family.

Meena is Reena's only sibling. Sita is Ruchi's grandmother. Nutan is Sujata's and Ram's grandchild. Sujata has only one child, a son. Meena is Vishu's sister in law and Ruchi's mother. Nutan is Vishu's daughter. Ram is Sita's husband.

56. How is Nutan related to Ruchi?  
 (a) Sister                    (b) Cousin  
 (c) Aunt                    (d) Niece

57. How is Sita related to Vishu?  
 (a) Mother                    (b) Aunt  
 (c) Mother-in-law            (d) Sister
58. How is Vishu related to Ruchi?  
 (a) Father                    (b) Uncle  
 (c) Grandfather            (d) Brother
59. How is Ram related to Sujata?  
 (a) Brother                    (b) Husband  
 (c) Sister                    (d) None of these
60. Pointing to a photograph Rasika said, "He is the grand son of my grandmother's only son, "How is the boy in photograph related to Rasika?  
 (a) Son  
 (b) Either Nephew or Son  
 (c) Brother  
 (d) Can not be determined

### Previous year questions

1. A, B and C are sisters. D is the brother of E and E is the daughter of B. how is A related to D?  
 (a) Sister                    (b) Cousin  
 (c) Niece                    (d) None of these
2. A, B are married couple. X and Y are brothers. X is the brother of A. how is Y related to B?  
 (a) Brother-in-law          (b) Brother  
 (c) Cousin                    (d) Niece
3. Deepak has a brother Anil. Deepak is the son of Prem. Aditya is Prem's father. In terms of relationship, what is Anil of Aditya?  
 (a) Son                        (b) Grandson  
 (c) Brother                    (d) Grandfather
4. B is husband of P. Q is the only grandson of E, who is wife of D and mother-in-law of P. How is B related to D?  
 (a) Nephew                    (b) Cousin  
 (c) Son-in-law                (d) Son
5. I. F is the brother of A,  
 II. C is the daughter of A,  
 III. D is the sister of F,  
 IV. G is the brother of C.  
 Then who is the uncle of G?  
 (a) A                        (b) C                    (c) F (d) K
6. A is the paternal uncle of B, who is the daughter of C and C is the daughter-in-law of P. How is A related to P?  
 (a) Brother                    (b) Son  
 (c) Son-in-law                (d) Data inadequate
7. P's father is Q's son. M is the paternal uncle of P and N is the brother of Q. How is N related to M?  
 (a) Brother                    (b) Nephew  
 (c) Cousin                    (d) None of these

8. Q is the brother of R; P is the sister of Q. T is the brother of S; S is the daughter of R. who are the nephew/niece of Q?  
 (a) R and P                  (b) P and T  
 (c) Q and T                  (d) S and T
9. E is the son of A. D is the son of B. E is married to C. C is B's daughter. How is D related to E?  
 (a) Brother                  (b) Uncle  
 (c) Father-in-law            (d) Brother-in-law
10. A is father of C and D is son of B. E is brother of A. If C is sister of D, how is B related to E?  
 (a) Daughter                (b) Brother-in-law  
 (c) Husband                (d) Sister-in-law
11. Q's mother is sister of P and daughter of M. S is daughter of P and sister of T. How is M related to T?  
 (a) Grandmother  
 (b) Father  
 (c) Grandfather  
 (d) Grandfather or Grandmother
12. D, the son-in-law of B, is the brother-in-law of A who is the brother of C. How is A related to B?  
 (a) Brother                (b) Son  
 (c) Father                (d) Data inadequate
13. P is the son of Q while Q and R are the sisters to one another. T is the mother of R. If S is the son of T, which of the following statements is correct?  
 (a) T is the brother of Q.  
 (b) S is the cousin of P.  
 (c) Q and S are sisters  
 (d) S is the maternal uncle of P.
14. A is the brother of B. B is the brother of C. D is the father of A. Based on these three statements, which of the following statements cannot be definitely true?  
 (a) B is the brother of A.  
 (b) B is the son of D.  
 (c) A is the brother of C.  
 (d) C is the brother of A.
15. A is father of X; B is mother of Y. The sister of X and Z is Y. Which of the following statements is definitely not true?  
 (a) B is the mother of Z  
 (b) X is the sister of Z  
 (c) Y is the son of A.  
 (d) B has one daughter.
16. Kannan is the brother of Kumar. Lakshmi is the daughter of Kumar. Kali is sister of Kannan and Govind is the brother of Lakshmi. Who is the uncle of Govind?  
 (a) Kumar                (b) Kali  
 (c) Lakshmi                (d) Kannan
17. Introducing a girl, Vipin said, "Her mother is the only daughter of my mother-in-law. "How is Vipin related to the girl?  
 (a) Uncle                (b) Father  
 (c) Brother                (d) Husband
18. If Maya says, "Vaishali's father Vinayak is the only son of my father-in-law, Vishwanath, "then how is Roopa, who is sister of Vaishali related to Vishwanath ?  
 (a) Wife                (b) Daughter  
 (c) Grand daughter            (d) Sister-in-law
19. A woman introduces a man as the son of the brother of her mother. How is the man related to her?  
 (a) Son                (b) Uncle  
 (c) Cousin                (d) Grand son
20. Sheela is Ravi's sister-in-law. Ram is Ravi's brother. Ram's wife is Sheela. Deepa is Ravi's sister. Deepa's mother is Shanthi. How is Sheela related to Shanthi?  
 (a) Daughter-in-law            (b) Grand daughter  
 (c) Daughter                (d) Mother-in-law
21. Roop is the brother of Omvir. Meena is the sister of Roop. Ram is the brother of Hemu. Hemu is the daughter of Omvir. Shyam is the father of meena. How is Hemu related to Shyam?  
 (a) Father  
 (b) Maternal Grand father  
 (c) Maternal Uncle  
 (d) Grand daughter
22. Tarun is the father of Rohit. Rohit is the brother of Kala. Kala is the wife of Dilip. How is Dilip related to Rohit?  
 (a) Brother-in-law            (b) Father-in-law  
 (c) Son                (d) Uncle
23. Brother of Ramesh's mother is brother of Alok's father. Then how is Ramesh's mother related to Alok?  
 (a) Grandmother            (b) Aunt  
 (c) Cousin                (d) Sister-in-law
24. Ram is brother of Shyam. Kamla is mother of Ram. Sohan is brother of Kamla. How is Sohan related to Shyam  
 (a) Father  
 (b) Grand father  
 (c) Maternal Uncle  
 (d) Can not determined
25. Rohit is son of Ravi's father. Ravi's paternal Aunt is Laxmi. Rao is husband of Laxmi and son-in-law of Mohan. How is Mohan related to Ravi?  
 (a) Nephew  
 (b) Son  
 (c) Brother  
 (d) Grand father/grandmother

26. Sita introduces Mala saying that she is daughter of only sister of my brother. How is Mala related to Sita?  
 (a) Mother                        (b) Daughter  
 (c) Maternal Aunt              (d) Niece
27. Ramesh is uncle of Suresh. Suresh is brother of Mukesh. Babita is mother of Mukesh. Sonam is sister of Babita. Anil is brother of Pankaj. Pankaj is son of Raju. Rajus is relative of Babita. How is Pankaj related to Suresh ?  
 (a) Son-in-law  
 (b) Brother-in-law  
 (c) Father-in-law  
 (d) Can not determined
28. Pointing toward a girl, a man said, "She is daughter of only son of my father's wife. "How girl is related to man?  
 (a) Aunt                            (b) Daughter  
 (c) Mother                        (d) Sister
29. Pointing towards his father in a picture, man said to a lady that his mother is only daughter of your mother. How is lady related to man?  
 (a) Sister                            (b) Mother  
 (c) Wife                            (d) Grand mother
30. Pointing to a photograph Seema says, "This woman is only daughter of my mother-in-law's husband. Then how is woman in the photograph related to Seema's husband?  
 (a) Sister                            (b) Nephew  
 (c) Son-in-law                    (d) Father
31. If X and Y are wife and husband respectively and B is the brother of X, then how is the son of B and Y are related?  
 (a) Father and Child            (b) Aunt and Nephew  
 (c) Aunt and Niece            (d) Uncle and Nephew
32. P and Q are brothers. R and S are sister. P's son is S's brother. How Q is related to R?  
 (a) Uncle                            (b) Brother  
 (c) Father                            (d) Grandfather
33. A is the son of B. B is the wife of C.  
 D is the mother of C. E is husband of D  
 E is the father of K.  
 How is A related to E?  
 (a) Grand son                    (b) Father-in-law  
 (c) Son-in-law                    (d) Paternal Uncle
34. Madhu said, "My mother's only son Ashok has no son. "Which of the following statements is true?  
 (a) Ashok has only daughter  
 (b) Ashok is Unmarried  
 (c) Ashok has only sister  
 (d) Ashok has no father
- Directions (35 – 40):** Read the following informations carefully and answer the questions which follow :
- (i) 'A × B' means A is the father of B.  
 (ii) 'A + B' means A is the daughter of B.  
 (iii) 'A ÷ B' means A is the mother of B.  
 (iv) 'A – B' means A is the brother of B.
35. If 'P ÷ R – Q × T', how is P related to T?  
 (a) Grandmother                (b) Mother-in-law  
 (c) Sister                        (d) Grand father
36. If 'P ÷ Q + R × T', how is Q related to T?  
 (a) Aunt                            (b) Sister  
 (c) Brother                        (d) Grandson
37. Which of the following means that R is wife of P?  
 (a) P × R – Q – T            (b) P ÷ T + R – Q  
 (c) P ÷ R – Q + T            (d) P × T – Q + R
38. If 'R – P ÷ J × Q' how is J related to R?  
 (a) Son/Daughter                (b) Nephew  
 (c) Niece                        (d) Grandson
39. If 'P + Q – R ÷ T' how is T related to P?  
 (a) Aunt                            (b) Aunt/Uncle  
 (c) Father                        (d) None of these
40. If 'P × T ÷ Q + R' how is R related to P?  
 (a) Daughter                        (b) Husband  
 (c) Son-in-law                    (d) None

## Answers

### BLOOD RELATION

1. (b)    2. (d)    3. (d)    4. (b)    5. (d)    6. (a)    7. (d)    8. (d)    9. (a)    10. (c)  
 11. (d)    12. (a)    13. (d)    14. (d)    15. (d)    16. (b)    17. (c)    18. (d)    19. (c)    20. (b)  
 21. (d)    22. (d)    23. (b)    24. (d)    25. (d)    26. (b)    27. (a)    28. (a)    29. (d)    30. (d)  
 31. (b)    32. (a)    33. (d)    34. (a)    35. (b)    36. (b)    37. (c)    38. (b)    39. (c)    40. (a)  
 41. (b)    42. (d)    43. (c)    44. (d)    45. (a)    46. (c)    47. (b)    48. (d)    49. (d)    50. (d)  
 51. (a)    52. (c)    53. (c)    54. (c)    55. (a)    56. (b)    57. (c)    58. (b)    59. (d)    60. (b)

### Previous year

1. (d)    2. (a)    3. (b)    4. (d)    5. (c)    6. (b)    7. (d)    8. (d)    9. (d)    10. (d)  
 11. (d)    12. (b)    13. (d)    14. (d)    15. (c)    16. (d)    17. (b)    18. (c)    19. (c)    20. (a)  
 21. (d)    22. (a)    23. (b)    24. (c)    25. (d)    26. (b)    27. (d)    28. (b)    29. (d)    30. (a)  
 31. (d)    32. (a)    33. (a)    34. (a)    35. (a)    36. (b)    37. (d)    38. (b)    39. (d)    40. (c)

# SERIES

## BASIC CONCEPT

Here we are with the Basic concepts and tricks of Number series which will be asked in various competitive examination.

Number series can be defined as an arrangement of numbers in a certain order, where some numbers are wrongly put into the series of numbers and some number is missing in that series, we need to observe and find the accurate number to the series of numbers.

**IT IS OBVIOUS TO LEARN SQUARES OF NUMBERS UPTO 40 AND CUBES OF NUMBERS UPTO 20.** **Note:** In the wrong number series, the pattern of the series will always be wrong immediately before and after of the wrong number.

There are uncountable numbers of series because the series is an imagination. Some of the important series patterns are discussed below:

**1. Based on addition and subtraction.**

4, 9, 14, 18, 24, 29

The difference of two successive numbers is 5 but the difference of 18 and 14 is 4, a difference of 24 and 18 is 6. So, the wrong number is 18. The correct answer is 19.

**2. Based on multiplication and division.**

18, 28, 40, 5, 60, 75, 91, 125, 136, 6875

**Solution:** Problem with this type of series is how to identify these types of series. Check the difference between successive numbers. —10—12.5—20.25—30.375—45.5625

We can see that the difference is half of the previous number. 10 is not the half of 18 and 12.5 is not the half of 28. So, 28 is the wrong and correct number is 27.

**3. Based on the square and cube.**

8 27 125 512 1331 2197

**Solution:**  $2^3=8$ ,  $3^3=27$ ,  $5^3=125$ ,  $8^3=512$ ,  $11^3=1331$ ,  $13^3=2197$

In this, all are cubes of number 2, 3, 5, 8, 11, 13. These numbers are prime numbers except 8 and from 2 to 11, 7 is also a prime number which is missing. In place of  $8^3$ , there should be  $7^3$  i.e. 343

**4. Based on the mix pattern.**

6, 11, 21, 40, 81, 161

This series could have followed two patterns.

**Pattern 1:**

The difference is -5—10—19—41—80. Successive difference is 2 times of the previous one. But 19 and 41 is not following the pattern. We can guess that something is wrong in this term if we want 20 and 40, we have to replace 40 by 41. Hence 40 is wrong.

**Pattern 2:** 6

$$6 \times 2 - 1 = 11$$

$$11 \times 2 - 1 = 21$$

$$21 \times 2 - 1 = 41$$

$$41 \times 2 - 1 = 81$$

$$81 \times 2 - 1 = 161$$

Hence, 40 is wrong If you go through various types of the pattern of wrong number series and have practiced them. You will not have any problem in solving the series. Now, we will discuss the previous year asked questions based on number series.

**Example 1:** 12 12 18 45 180 1080 12285

In this series also there can be two pattern.

**Pattern 1**

$$12 \times 1 = 12$$

$$12 \times (1.5) = 18$$

$$18 \times (1.5 + 1) = 45$$

$$45 \times (2.5 + 1.5) = 180$$

$$180 \times (4 + 2.5) = 1170$$

$$1170 \times (6.5 + 4) = 12285$$

**Pattern 2**

$$12 \times (1+0) = 12$$

$$12 \times (1+5) = 18$$

$$18 \times (1.5+1) = 45$$

$$45 \times (2.5+1.5) = 180$$

$$180 \times (4+2) = 1080$$

$$1080 \times (6+2.5) = 9180$$

**So, If it follows pattern 1, the wrong number in series is 1080 and if it follows pattern 2, the wrong number in series is 12285. It depends on options given in exams.**

**Example 2:**

7 5 7 17 63 ?

**Answer:** 309

$$7 \times 1 - 2 = 5$$

$$5 \times 2 - 3 = 7$$

$$7 \times 3 - 4 = 17$$

$$17 \times 4 - 5 = 63$$

$$63 \times 5 - 6 = 309$$

**Example 3:**

50..... 61 89 154 280 (SBI PO Prelims 2016)

**Answer :** 52

$$50 + (13 + 1) = 52$$

$$52 + (23 + 1) = 61$$

$$61 + (33 + 1) = 89$$

$$89 + (43 + 1) = 154$$

$$154 + (53 + 1) = 280$$

**Example 4:**

17, 19, 25, 37, .....87 (SBI PO Prelims 2016)

**Answer:** 57

$$17 + 1 \times 2 = 19$$

$$19 + 2 \times 3 = 25$$

$$25 + 3 \times 4 = 37$$

$$37 + 4 \times 5 = 57$$

$$57 + 5 \times 6 = 87$$

**Example 5:**

11, 14, 19, 28, 43, ? (SBI PO Prelims 2016)

**Answer:** 66

$$3 \dots 5 \dots 9 \dots 15 \dots 23 \dots 2 \dots 4 \dots 6 \dots \dots \dots 8$$

Answer  $43 + 23 = 66$

**Example 6:**

26 144 590 1164 ? (SBI PO Prelims 2016)

**Answer:** 1182

$$26 \times 6 - 12 = 144$$

$$144 \times 4 + 14 = 590$$

$$590 \times 2 - 16 = 1164$$

$$1164 \times 1 + 18 = 1182$$

**Example 7:**

6 48 8 70 9 63 7 Find the wrong number?

**Answer:**  $9 \times 7 = 63$ ,  $9 \times 8 = 72$ ,  $8 \times 6 = 48$

So, 70 is wrong in this series

**Example 8:**

1, 4, 11, 34, 102, 304, 911

**Answer:** 102

Pattern of Series is 1

$$1 \times 3 + 1 = 4$$

$$4 \times 3 - 1 = 11$$

$$11 \times 3 + 1 = 34$$

$$34 \times 3 - 1 = 101$$

$$101 \times 3 + 1 = 304$$

$$304 \times 3 - 1 = 911$$

**Example 9:**

1, 2, 12, 146, 2880, 86400, 3628800

**Answer:** 146

$$1$$

$$1 \times 1 \times 2 = 2$$

$$2 \times 2 \times 3 = 12$$

$$12 \times 3 \times 4 = 144$$

$$144 \times 4 \times 5 = 2880$$

$$2880 \times 5 \times 6 = 86400$$

$$86400 \times 6 \times 7 = 3628800$$

**Example 10:**

0, 6, 23, 56, 108, 184, 279

**Answer:** 108

$$1^3 - 2^0 = 1 - 1 = 0$$

$$2^3 - 2^1 = 8 - 2 = 6$$

$$3^3 - 2^2 = 27 - 4 = 23$$

$$4^3 - 2^3 = 64 - 8 = 56$$

$$5^3 - 2^4 = 125 - 16 = 109$$

$$6^3 - 2^5 = 216 - 32 = 184$$

$$7^3 - 2^6 = 343 - 64 = 279$$

**Example 11:**

813, 724, 635, 546, 457, 564, 279

**Answer :** 564

Hundred place digit is decreasing by 1, tens place is increasing by 1 and unit place digit is also increasing by 1. But this pattern is not followed in 564. 368 should be there in place of 564.

**Example 12:**

0, 4, 19, 48, 100, 180, 294

**Answer:** 19

$$1^3 - 1^2 = 0$$

$$2^3 - 2^2 = 4$$

$$3^3 - 3^2 = 18$$

$$4^3 - 4^2 = 48$$

$$5^3 - 5^2 = 100$$

$$6^3 - 6^2 = 180$$

$$7^3 - 7^2 = 294$$

**Example 13:**

3.2, 4.8, 2.4, 3.6, 1.6, 2.7

**Answer :** 1.6

$$3.2 \times 1.5 = 4.8 \quad 4.8 \div 2 = 2.4 \quad 2.4 \times 1.5 = 3.6$$

$$3.6 \div 2 = 1.8 \quad 1.8 \times 1.5 = 2.4$$

**Example 14:**

2, 9, 24, 55, 117, 245

**Answer :** 117

$$2 \times 2 + 5 = 9$$

$$9 \times 2 + 6 = 24$$

$$24 \times 2 + 7 = 55$$

$$55 \times 2 + 8 = 118$$

$$118 \times 2 + 9 = 245$$

**Example 15:**

109, 131, 209, 271, 341, 419

**Answer:** 131

$$112 - 12 = 109$$

$$132 - 14 = 155$$

$$152 - 16 = 209$$

$$172 - 18 = 271$$

$$192 - 20 = 341$$

$$212 - 22 = 419$$

**Example 16:**

6, 7, 27, 115, 513, 3069

**Answer :** 115

$$6 \times 2 - 5 = 7$$

$$7 \times 3 + 6 = 27$$

$$27 \times 4 - 7 = 101$$

$$101 \times 5 + 8 = 513$$

$$513 \times 6 - 9 = 3069$$

**Notes**

I. Check the difference

II: If step 1 does not work, then check the difference of difference. If it also does not work, try to find is there any

multiplication or division relationship between numbers?

III: If a difference is sharply increasing or decreasing, then you can guess that it may be due to multiplication or division pattern of series.

IV: If there is more irregularity in difference, then it may be the combination of above-discussed steps.

V: If none of the steps works, then try to use the elimination method, which may help you in eliminating 2 to 3 options.

**Practice set**

**Directions (Q. Nos. 1 - 30): What will come in place of question mark (?) in the following number series?**

- |  |   |
|--|---|
| 1. 2, 3, 5, 7, ?<br>(a) 9      (b) 10      (c) 8      (d) 11<br>(e) None of these                      | 13. 54, 72, 90, 108, ?<br>(a) 110      (b) 115      (c) 120      (d) 126<br>(e) None of these       |
| 2. 1, 3, 6, 10, 15, ?<br>(a) 17      (b) 18      (c) 20      (d) 21<br>(e) None of these               | 14. 2, 4, 8, 16, 32, ?<br>(a) 64      (b) 48      (c) 42      (d) 45<br>(e) None of these           |
| 3. 4, 9, 16, 25, ?<br>(a) 49      (b) 30      (c) 36      (d) 42<br>(e) None of these                  | 15. 3, 6, 12, 24, 48, ?<br>(a) 64      (b) 70      (c) 94      (d) 96<br>(e) None of these          |
| 4. 7, 11, 13, 17, 19, 23, ?<br>(a) 18      (b) 28      (c) 27      (d) 22<br>(e) None of these         | 16. 10, 14, 18, 22, ?<br>(a) 23      (b) 25      (c) 30      (d) 26<br>(e) None of these            |
| 5. 41, 43, 47, 53, 59, ?<br>(a) 61      (b) 67      (c) 64      (d) 65<br>(e) None of these            | 17. 100, 99, 97, 94, 90, ?<br>(a) 92      (b) 95      (c) 85      (d) 93<br>(e) None of these       |
| 6. 3, 6, 11, 18, 27, ?<br>(a) 29      (b) 35      (c) 38      (d) 36<br>(e) None of these              | 18. 3, 9, 27, 81, ?<br>(a) 243      (b) 343      (c) 414      (d) 425<br>(e) None of these          |
| 7. 4, 9, 19, 34, 54, ?<br>(a) 64      (b) 74      (c) 78      (d) 79<br>(e) None of these              | 19. 24, 48, 72, 96, ?<br>(a) 100      (b) 108      (c) 120      (d) 140<br>(e) None of these        |
| 8. 2, 3, 5, 8, 12, ?<br>(a) 13      (b) 14      (c) 15      (d) 16<br>(e) None of these                | 20. 78, 88, 99, 111, ?<br>(a) 112      (b) 115      (c) 118      (d) 124<br>(e) None of these       |
| 9. 100, 81, 64, 49, ?<br>(a) 48      (b) 46      (c) 40      (d) 36<br>(e) None of these               | 21. 512, 256, 128, 64, 32, ?<br>(a) 26      (b) 30      (c) 16      (d) 24<br>(e) 20                |
| 10. 8, 27, 64, 125, 216, 343, ?<br>(a) 443      (b) 612      (c) 512      (d) 543<br>(e) None of these | 22. 1, 12, 123, 1234, ?<br>(a) 123      (b) 12346      (c) 12345      (d) 1235<br>(e) None of these |
| 11. 56, 63, 70, 77, ?<br>(a) 84      (b) 91      (c) 80      (d) 85<br>(e) None of these               | 23. 123456, 23456, 2345, 345, ?<br>(a) 34      (b) 45      (c) 35      (d) 344<br>(e) None of these |
| 12. 36, 48, 60, 72, ?<br>(a) 80      (b) 78      (c) 84      (d) 85<br>(e) None of these               | 24. 35, 49, 63, 77, ?<br>(a) 91      (b) 93      (c) 95      (d) 99<br>(e) None of these            |
|  | 25. 46, 52, 60, 70, ?<br>(a) 83      (b) 82      (c) 81      (d) 80<br>(e) None of these            |

26. 1, 11, 111, 1111, ?  
(a) 12      (b) 22      (c) 22222  
(d) 11111  
(e) None of these
27. 1015, 508, 255, 129, 66.5, ?  
(a) 34.50    (b) 35    (c) 35.30    (d) 35.75  
(e) None of these
28. 4, 10, 33, 136, 685, ?
- (a) 3430    (b) 4110    (c) 4116    (d) 3435  
(e) None of these
29. 1, 9, 25, 49, ?, 121  
(a) 64    (b) 81    (c) 91    (d) 100  
(e) None of these
30. 4, 7, 12, 19, 28, ?  
(a) 30    (b) 36    (c) 39    (d) 49  
(e) None of these

**Answers**

**SERIES**

1. (d)    2. (d)    3. (c)    4. (e)    5. (a)    6. (c)    7. (d)    8. (e)    9. (d)    10. (c)  
11. (a)    12. (c)    13. (d)    14. (a)    15. (d)    16. (d)    17. (c)    18. (a)    19. (c)    20. (d)  
21. (c)    22. (c)    23. (a)    24. (a)    25. (b)    26. (d)    27. (d)    28. (c)    29. (b)    30. (c)

# Explanation

- 1. (d) :** It is prime number series. next prime number is 11.
- 2. (d) :**  $1 + 2 = 3, 3 + 3 = 6, 6 + 4 = 10,$   
 $10 + 5 = 15, 15 + 6 = 21$
- 3. (c) :** 22, 32, 42, 52. Next number is  $62 = 36$ .
- 4. (e) :** 7, 11, 13, 17, 19, 23  
 Prime numbers. Next prime number is 29.
- 5. (a) :** 41, 43, 47, 53, 59, ? ; Next prime number is 61.
- 6. (c) :**  $3 + 3 = 6, 6 + 5 = 11, \dots$   
 $+ 3, + 5, + 7, + 9, + 11$   
 So, the next number is  $27 + 11 = 38$
- 7. (d) :**  $+ 5, + 10, + 15, + 20$   
 So, the next number is  $54 + 25 = 79$
- 8. (e) :**  $+ 1, + 2, + 3, + 4$   
 So, the next number is  $12 + 5 = 17$
- 9. (d) :** 102, 92, 82, 72 ; The next number is  $62 = 36$
- 10. (c) :** 23, 33, 43, 53, 63, 73 ; Next is  $83 = 512$
- 11. (a) :**  $+ 7, + 7, + 7, \dots$   
 So, next in the series is  $77 + 7 = 84$
- 12. (c) :**  $+ 12, + 12, + 12, \dots$   
 So, the next number is  $72 + 12 = 84$
- 13. (d) :** Each number increases by 18.  
 So, the next one is :  $108 + 18 = 126$
- 14. (a) :** 21, 22, 23, 24, 25, .....  
 So, the next one is  $26 = 64$ .
- 15. (d) :** The previous number is multiplied by 2 to obtain the next number.  
 So, the next number is :  $48 \times 2 = 96$
- 16. (d) :** 4 is being added to each number.  
 So, the next number is  $22 + 4 = 26$
- 17. (c) :**  $- 1, - 2, - 3, - 4, \dots$   
 The next number is  $90 - 5 = 85$
- 18. (a) :** 31, 32, 33, 34 ; Next  $\otimes 35 = 243$
- 19. (c) :**  $24 \times 1, 24 \times 2, 24 \times 3, 24 \times 4$  ; Next is  $24 \times 5 = 120$
- 20. (d) :**  $78 + 10, 88 + 11, 99 + 12$  ; Next is  $111 + 13 = 124$
- 21. (c) :** Each term is divided by 2 to obtain the next term so, the next term is :  $32 \div 2 = 16$ .
- 22. (c) :** 1, 12, 123, 1234 ; Next is 12345
- 23. (a) :** Remove one digit alternatively from left and right Next is 34
- 24. (a) :**  $7 \times 5, 7 \times 7, 7 \times 9, 7 \times 11$  ; Next is  $7 \times 13 = 91$
- 25. (b) :**  $+ 6, + 8, + 10$  ; Next is  $70 + 12 = 82$
- 26. (d) :** 1, 11, 111, 1111 ; Next is 11111
- 27. (d) :**
- 28. (c) :**  $4 \times 2 + 2 = 10$   
 $10 \times 3 + 3 = 33$   
 $33 \times 4 + 4 = 136$   
 $136 \times 5 + 5 = 685$   
 $685 \times 6 + 6 = 4116$
- 29. (b) :** 12, 32, 52, 72, 92, 112  $\otimes$  Squares of consecutive odd numbers.  
 $92 = 81$
- 30. (c) :**  $+ 3, + 5, + 7, + 9$  ; Next is  $28 + 11 = 39$

# MISSING TERM IN SERIES

## BASIC CONCEPT

Alphabetical series are combination of alphabets that are connected to each other with a rule. It might be increment, decrement, opposite and other mathematical operation. There are two types of Alphabetical series.

- (a) Alphabetical words and numerical based series.
- (b) String Based alphabetical series

Alphabetical word based series use some alphabetical words which are connected to each other. We have to find out their next term or any middle term. For example :

- (a) GIJ, LNO, \_\_\_, VXY, ACD

In above series first letter has been increased with + 5 place value, middle and last letter also increase with 5 place value.

String based series are combination of any type of strings means there is a alphabetical part that have any special rule and there is a fill in the blank within it. We have to find out that blank and fill according to following rules. It may be of any type strings repeated, adding and dropping of letter also.

Some examples are given below.

- (a) bc abd/ bc abd/ bc abd/ bc  
It is a repeating part of bcabd string.
- (b) abc bc d cde def  
It is adding and dropping based string, where we delete first letter and add new letter after 3rd letter.

Numerical series are based on Number and they will also follow any syntax., it may be increment, decrement, square, cube, prime number and any other combination of mathematical operation. Some examples are given below.

## Practice set questions

1. 170, 149, 130, 113, ?  
(a) 97    (b) 98    (c) 105    (d) 115
2. 96782345, 6782345, 678234, 78234, ?  
(a) 67814    (b) 7825    (c) 7823    (d) 7884
3. P N P P O N P P P N N P P N O O P N  
How many times letter 'P' is present in given responses which preceding by a consonant and follow by a vowel.  
(a) 5    (b) 2    (c) 1    (d) none
4. 2 1 9 5 4 6 8 4 1 6 9 8 4 1 3  
How many odd number are present in the given series which is preceded by a perfect square and having followed by a odd number.  
(a) 2    (b) 3    (c) 4    (d) 1
5. 158, 113, 78, 53, 28, ?  
(a) 13    (b) 12    (c) 11    (d) 14
6. (Y, V, S, P, M, ?)  
(a) J    (b) L    (c) K    (d) R

7. 25, 216, 49, ?, 81, 1000  
 (a) 625 (b) 512 (c) 36 (d) 48
8. NOM, OPN, PQO, ?  
 (a) RQP (b) OQP (c) QRP (d) RPO
9. M5D, O7G, Q10J, ?, U19P  
 (a) S14M (b) S15N (c) N15S (d) N16S
10. 8, 17, 33, 67, ?  
 (a) 131 (b) 132 (c) 133 (d) 135
11. 100, 50, 52, 26, 28, ? 16, 8  
 (a) 30 (b) 36 (c) 14 (d) 32
12. Find the wrong term in the following series.  
 60, 60, 61, 65, 74, ?  
 (a) 74 (b) 90 (c) 65 (d) 61
13. TOY, QPA, NQD, ?  
 (a) RKH (b) HKM (c) KRH (d) KQN
14. BY, HS, NM, TG, ?  
 (a) AZ (b) ZA (c) CX (d) WD
15. J, K, ?, P, T  
 (a) N (b) M (c) O (d) P
16. Z, S, W, O, T, K, Q, G, ?, ?  
 (a) N, C (b) N, D (c) O, C (d) O, D
17. 6, 11, 11, 20, 18, 31, 27, ?  
 (a) 41 (b) 42 (c) 43 (d) 44
18. b\_abc\_bca\_c\_bc in missing place term will be  
 (a) cabab (b) cabb (c) caaaa (d) acad
19. 363, 297, ?, 198, 165, 143  
 (a) 241 (b) 242 (c) 243 (d) 96
20. l\_n\_mn\_lm\_n\_lm  
 (a) mlmlm (b) mlnml (c) mmmln (d) lmnlm
21. 3, 15, 35, 63, 99, ?  
 (a) 141 (b) 143 (c) 151 (d) 169
22. 100, 80, 55, 25, -10, ?  
 (a) -5 (b) -10 (c) -15 (d) -50
23. GH, JKL, NOPQ, ?  
 (a) STUVX (b) STUVW  
 (c) STVUX (d) SUVTX
24. 62, 57, 68, 52, 74, 47, 80, ?, ?  
 (a) 41, 83 (b) 42, 86 (c) 43, 85 (d) 46, 88
25. ACE, BDF, GIK, -  
 (a) HJL (b) MJH (c) JHM (d) HJI
26. WBP, SGM, OLJ, ?  
 (a) LPG (b) MQG (c) NPH (d) KQG
27. XB, VD, TF, ?, PJ.  
 (a) PQ (b) RH (c) RQ (d) RI
28. 151, 252, 454, ?, 1666  
 (a) 585 (b) 888 (c) 858 (d) 808
29. 300, 620, 1140, 1860, ?  
 (a) 2580 (b) 2280 (c) 2788 (d) 2780
30. 0, 2, 6, 12, ?, 30, 42  
 (a) 24 (b) 20 (c) 21 (d) 22
31. 5, 7, 11, 19, 35, 67, ?, 259  
 (a) 130 (b) 129 (c) 131 (d) 140
32. 3, 7, 15, 31, 63, 127, ?  
 (a) 255 (b) 260 (c) 245 (d) 265
33. Find out the number which is wrong according to given series.  
 12, 77, 252, 620, 1292  
 (a) 77 (b) 252 (c) 620 (d) 1292
34. 7, 12, 22, 37, ?, 82, 112, 147  
 (a) 50 (b) 58 (c) 57 (d) 156
35. 7, 18, 36, ?, 93, 132  
 (a) 92 (b) 83 (c) 55 (d) 61
36. 826, 735, 644, 553, ?  
 (a) 461 (b) 462 (c) 564 (d) 584
37. 5, 11, 35, 143, -  
 (a) 719 (b) 117 (c) 917 (d) 722
38. a-bbc-aab-aa-abba-  
 (a) cabaa (b) bacba (c) bbaaa (d) aabba
39. cc-dcn-cddc-n-ddcnn-d  
 (a) cdndc (b) dnnc (c) dcndd (d) nccdn
40. Which of the following numbers is wrong in the series? 3, 6, 10, 16, 21, 28  
 (a) 16 (b) 10 (c) 15 (d) 28
41. 10, 15, 35, 115, 435, ?  
 (a) 1715 (b) 1517 (c) 1716 (d) 1717
42. 12, 3, 24, 19, 44, ?  
 (a) 43 (b) 46 (c) 50 (d) 51
43. 17, ?, 65, 113, 129, 161, 209  
 (a) 34 (b) 33 (c) 40 (d) 44
44. 256, 25, 196, 49, ?, 81  
 (a) 121 (b) 149 (c) 144 (d) 16
45. 100, 70, 46, 28, ?, 10  
 (a) 17 (b) 15 (c) 20 (d) 16
46. 25, 96, 231, 448, ?  
 (a) 765 (b) 760 (c) 860 (d) 615
47.  $\frac{5}{7}, \frac{8}{9}, ?, \frac{17}{21}, \frac{23}{37}$   
 (a)  $\frac{13}{12}$  (b)  $\frac{12}{13}$  (c)  $\frac{15}{18}$  (d)  $\frac{20}{17}$
48. 1495, 1494, 1485, 1460, ?, 1290, 1121  
 (a) 1411 (b) 1114 (c) 1322 (d) 1506
49. 6, 8, 11, 16, ?, 37, 58, 92  
 (a) 20 (b) 21 (c) 24 (d) 25
50. 5764801, 2401, 49, ?  
 (a) 5 (b) 7 (c) 8 (d) 9
51. 21, 42, 36, 72, 66, ?  
 (a) 132 (b) 130 (c) 169 (d) 225
52. 0.7, 1.2, 2.7, 5.2, ?, 13.2  
 (a) 7.8 (b) 8.5 (c) 8.7 (d) 14.5
53. 15, 18, 54, ?, 171, 174, 322  
 (a) 159 (b) 62 (c) 60 (d) 57
54. 100006, 10000, ?, 100, 16  
 (a) 1005 (b) 1006 (c) 1000 (d) 999
55. 6, 43, 304, 2133, ?  
 (a) 14938 (b) 94134 (c) 14532 (d) 23581

56. 4917, 4882, 4836, ?  
 (a) 4564 (b) 6544 (c) 4768 (d) 6845
57. C, D, F, I, M, ?  
 (a) S (b) T (c) K (d) R
58. DMRC, ELSB, ?, GJUZ, HIVY  
 (a) FKTA (b) KMTA (c) FLTA (d) FKTZ
59. IJK, ABC, LMN, DEF, ?  
 (a) OP (b) GH (c) PQ (d) RS
60. M, P, O, -, -, T, S  
 (a) S, T (b) R, Q (c) S, K (d) R, P
61. BHARTI, HIRBAT, ITBHRA, ?  
 (a) TAHIBR (b) TAHIBS  
 (c) THAIBR (d) THABIR
62. LI, LXXI, XCI, CXI, CXXXI, ?  
 (a) CLX (b) CLXI (c) CLI (d) ICL
63. Find out wrong term in series  
 541, 514, 312, 743, 945, 816  
 (a) 312 (b) 945 (c) 816 (d) 541  
 Which set of letters when sequentially placed at the gaps in the given letter series shall complete it.
64. D\_RCD\_RCDM\_CD\_  
 (a) MMRD (b) MMRC  
 (c) MRMM (d) MMRM
65. B\_OK\_OW\_OOK\_OW\_O  
 (a) ONBNB (b) ONBMB  
 (c) ONBBN (d) NOBBN
66. \_AY\_Z\_YB\_AY\_Z  
 (a) BZAZB (b) ZBAZB  
 (c) ZBAZA (d) BZAZB
67. ba\_ \_ b\_ \_ am\_ \_aam\_  
 (a) ambaba (b) amabbbb  
 (c) ambabb (d) amabbb
68. ab\_ bb\_ aa\_abb\_a\_babb  
 (a) amama (b) ambam  
 (c) ambbm (d) ambma
69. 26, 39, 58.5, ?, 131.625  
 (a) 87.75 (b) 876.5  
 (c) 987.5 (d) 872.8
70. 260, 345, 437, 536, ?, 755, 875  
 (a) 445 (b) 642 (c) 752 (d) 644
71. CMG, FPJ, ISM, ?  
 (a) LVP (b) NVZ (c) NVY (d) LVZ
72. 22, 22, 55, 220, -, 8470  
 (a) 1154 (b) 1210 (c) 1145 (d) 1165
73. 291, 146, 73.5, 37.25, ?  
 (a) 19.125 (b) 20.25 (c) 19.15 (d) 119.10
74. 40250, 8050, 3220, ?, 257.6, 51.52  
 (a) 464 (b) 666 (c) 644 (d) 486
75. 3, 15, 72, 380, 2310, ?  
 (a) 16215 (b) 16212 (c) 16210 (d) 16201
76. 9, 10, ?, 69, 280, 1405  
 (a) 18 (b) 20 (c) 23 (d) 22
77. 1000000, 59049, 4096, ?, 36, 5  
 (a) 169 (b) 361 (c) 343 (d) 225
78. 34, 18, 10, ?  
 (a) 8 (b) 5 (c) 7 (d) 6
79. 4, 10, 22, 46, ?, 190  
 (a) 56 (b) 16 (c) 76 (d) 94
80. 9, 121, ?, 21841, 262081  
 (a) 1681 (b) 981 (c) 2516 (d) 1625
81. 2, 5, 26, ?  
 (a) 675 (b) 674 (c) 768 (d) 677
82. In the series 3, 9, 27, 81... What will be the 8th term.  
 (a) 6891 (b) 6561 (c) 5661 (d) 6231
83. 1, 2, 3, 6, 9, 18, -, 54  
 (a) 18 (b) 27 (c) 36 (d) 81
84. 7, 8, 11, 17, 27, ?  
 (a) 42 (b) 43 (c) 45 (d) 46
85. 2, 4, 6, 12, 22, ?  
 (a) 48 (b) 40 (c) 42 (d) 51
86. A, C, E, G, K, ?  
 (a) L (b) K (c) M (d) P
87. 7, 18, ?, 236, 1184  
 (a) 55 (b) 54 (c) 51 (d) 58
88. BBE, BEF, BHI, ?, CFA  
 (a) DBE (b) CBD (c) DCB (d) EBA
89. 4, 3.5, 5, ?, 19.5, 50.25  
 (a) 9.5 (b) 8 (c) 9 (d) 10.5
90. 198, 33, 6.6, 1.65, ?  
 (a) 0.65 (b) 0.85 (c) 8.9 (d) 0.55
91. 19, 22, 39, 103, 359, 1383  
 (a) 22 (b) 103 (c) 359 (d) 39
92. -1, 2, 7, ?, 23, 34, 47  
 (a) 13 (b) 14 (c) 12 (d) 15
93. 12, 36, ?, 200, 206, 1442, 1450  
 (a) 40 (b) 41 (c) 45 (d) 29
94. 84, 69, 83, ?, 82, 71  
 (a) 73 (b) 74 (c) 89 (d) 70
95. Find out wrong term in series  
 2, 6, 18, 32, 50, 72, 98  
 (a) 6 (b) 18 (c) 32 (d) 50
96. JL, IG, NP, ?, RT  
 (a) CE (b) EC (c) RD (d) FD
97. 55, 107, 317, ?, 6309, 37847  
 (a) 1514 (b) 1428 (c) 6312 (d) 1263
98. 8, 15, 42, ?, 580, 2915  
 (a) 142 (b) 141 (c) 158 (d) 402
99. 25 | 12 | 94, 9 | 1 | 95, 24 | 1 | 95, 8 | 2 | 95, ?  
 (a) 22 | 2 | 95 (b) 25 | 2 | 95  
 (c) 23 | 2 | 95 (d) 18 | 2 | 95
100. 5, 13, 31, 69, 147, ?  
 (a) 305 (b) 308 (c) 304 (d) 307

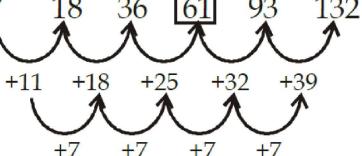
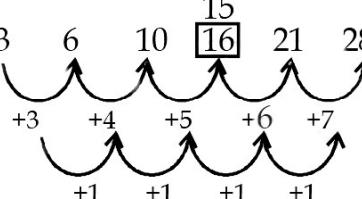
# Answers

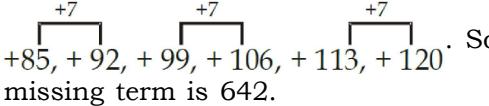
## MISSING TERM IN SERIES

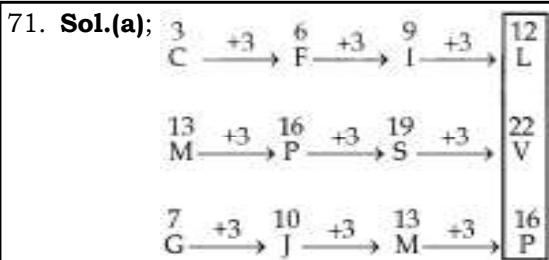
1. (b)    2. (c)    3. (c)    4. (a)    5. (a)    6. (a)    7. (b)    8. (c)    9. (a)    10. (c)
11. (c)    12. (b)    13. (c)    14. (b)    15. (b)    16. (a)    17. (d)    18. (a)    19. (b)    20. (b)
21. (b)    22. (d)    23. (b)    24. (b)    25. (a)    26. (d)    27. (b)    28. (c)    29. (d)    30. (b)
31. (c)    32. (a)    33. (c)    34. (c)    35. (d)    36. (b)    37. (a)    38. (a)    39. (c)    40. (a)
41. (a)    42. (a)    43. (b)    44. (c)    45. (d)    46. (a)    47. (b)    48. (a)    49. (c)    50. (b)
51. (a)    52. (c)    53. (d)    54. (b)    55. (a)    56. (c)    57. (d)    58. (a)    59. (a)    60. (b)
61. (a)    62. (c)    63. (c)    64. (d)    65. (a)    66. (b)    67. (c)    68. (d)    79. (a)    70. (b)
71. (a)    72. (b)    73. (a)    74. (c)    75. (b)    76. (d)    77. (c)    78. (d)    79. (d)    80. (a)
81. (d)    82. (b)    83. (b)    84. (a)    85. (b)    86. (c)    87. (d)    88. (b)    89. (c)    90. (d)
91. (a)    92. (b)    93. (a)    94. (d)    95. (a)    96. (b)    97. (d)    98. (b)    99. (c)    100. (a)

### Practice set Solutions

1. **Sol.(b);** The pattern is  $-21, -19, -17, -15, \dots$ . So, missing term =  $113 - 15 = 98$ .
2. **Sol.(c);** The digits are removed one by one from the beginning and the end in alternate order so as to obtain the subsequent terms of the series.
3. **Sol.(c);** Only one P follows that condition.
4. **Sol.(a);** There are two combinations present are 195, 413. So answer is 2.
5. **Sol.(a);** the pattern is  $-45, -35, -25, \dots$ . So, missing term =  $28 - 15 = 13$ .
6. **Sol.(a);** The series consist of alternate letters in reverse order with three place value difference. Hence, next missing term is J.
7. **Sol.(b);** The seris consists of squares and cubes of consecutive natural number i.e.,  $5^2, 6^3, 7^2, 8^3, 9^2, 10^3, 11^2, \dots$  So, missing term =  $8^3 = 512$
8. **Sol.(c);** In every term, every letter (first, middle, last) increases with next letters. So missing term is QRP.
9. **Sol.(a);** S 14 M ,Clearly, the first letters of the terms ae alternate.  
The last letter of each term is three steps ahead of the last letter of the preceding term.  
Thus, the next term would be S 14 M . Hence, the answer is (a).
10. **Sol.(c);** The pattern is  $\times 2 + 1, \times 2 - 1, \times 2 + 1, \times 2 - 1, \dots$  so, missing term =  $67 \times 2 - 1 = 133$
11. **Sol.(c);** The pattern is  $\div 2, +2, \div 2, +2, \dots$  so next term is  $28/2=14$ .
12. **Sol.(b);** The pattern is  $0, +(1)^2, +(2)^2, +(3)^2, +(4)^2, \dots$  so next term is 90.
13. **Sol.(c);** In first letter decrement of three place values, increment of one place value in second letter and in third letters  $+ 2, + 3, + 4$ .
14. **Sol.(b);** First letter increment with six place value and second letter decrease with six values.
15. **Sol.(b);** Continuously incerement of natural numbers in place value ...1, 2, 3, 4, ....
16. **Sol.(a);** The given sequence is a combination of two series : I, Z, W, T, Q, ? And II. S, O, K, G, ? In first series, letters are continuously decreasing by 3 and in second one there is decrement of 4.
17. **Sol.(d);** It is a combination of 2 series, first series 6, 11, 18, 27, ...Which follow sequence as  $+5, +7 +9 +11, \dots$ and second series is 11, 20, 31, ..., which follows sequence as  $+9, + 11, + 13 \dots$ So next, missing term is  $13 + 31 = 44$ .
18. **Sol.(a);** The sequence is bcabca/bcabca/bcabca so missing term is caba.
19. **Sol.(b);** The pattern is  $-66, -55, -44, -33, -22$ . So missing term is  $297 - 55 = 242$ .
20. **Sol.(b);** The main sequence is lmn, increment of letter is reverse order.  
The sequence is lmn lmnn lmmn llmn So missing term is mlnml.
21. **Sol.(b);** The difference between digits are  $+ 12, + 20, + 28, + 36, + 44$ , so missing term is  $99 + 44 = 143$ .
22. **Sol.(d);** The pattern is  $-20, -25, -30, \dots$ , So its missing term will be  $-10 - 40 = -50$ .
23. **Sol.(b);** Consecutive letter no. as  $+2, +3, +4, +5, \dots$ , (no of letter) and upcoming term is increase by place value of  $+2$ . So missing term is STUVW.
24. **Sol.(b);** Combination of 2 series and then 1st series is 62, 68, 74, 80,...having  $-6$  difference and 2nd series is 57, 52, 47, ..., having  $-5$  so missing term will be 42 and 86.
25. **Sol.(a);** There is oneplace value increment, in first option it follows.
26. **Sol.(d);** In given sequence first letter is decrease by 4, second letter is increased with five place value and 3rd letter decrease with 3 digit.
27. **Sol.(b);** The sequence is  $-2, +2, -2, +2$ . So missing terms is RH.
28. **Sol.(c);** The sequence is  $+101, +202, +404, +808 \dots$  So, missing term is 858.
29. **Sol.(d);** The sequence is  $+320, +520, +720, \dots$  So, missing term is 2780.
30. **Sol.(b);** Here the respective difference between the terms is as follows: 2, 4, 6, 8, ..... Therefore,  $12 + 8 = 20$  which is the required term.
31. **Sol.(c);** Here the respective difference between the term is as follows:  
2, 4, 8, 16, 32, 64, .....  
Therefore, the required term will be  $67 + 64 = 131$
32. **Sol.(a);** Here on adding 1 to the double of the first term we get the next term.  
As required-  $3 \times 2 + 1 = 7$   
 $7 \times 2 + 1 = 15$   
 $15 \times 2 + 1 = 31$   
 $31 \times 2 + 1 = 63$   
 $63 \times 2 + 1 = 127$   
 $127 \times 2 + 1 = 255$

33. **Sol.(c);** The term follow as  $(x^4 - 4)$  where  $x$  run as 2, 3, 4,.... So, wrong term is 620.
34. **Sol.(c);** Here, the respective difference between terms is as follows : 5, 10, 15, 20, 25.....  
As,  $7 + 5 = 12$   
 $12 + 10 = 22$   
 $22 + 15 = 37$   
 $\therefore$  The next term will be  $= 37 + 20 = 57$
35. **Sol.(d);** 7    18    36    **61**    93    132  

36. **Sol.(b);** The difference in 1st, 2nd and 3rd digit are follow  $-1, +1, -1$  as respectively.
37. **Sol.(a);** The sequence is  $\times 2 + 1, \times 3 + 2, \times 4 + 3, \times 5 + 4, \dots$ , So term is 719.
38. **Sol.(a);** Here the letter series is as follows-  
acb bca aab baa aab baa
39. **Sol.(c);** Here the letter series is as follows-  
ccd dcn ccd dcn ndd dcn ndd
40. **Sol.(a);** 3    6    10    **15**    21    28  

41. **Sol.(a);** The sequence is  $+5, + (5 \times 4), + (20 \times 4), + (80 \times 4), + (320 \times 4)$ . So term is 1715
42. **Sol.(a);** Two series are present one is 12, 24, 44, ... having difference is 12, 20 so next term is 70. Second is 3, 19, 43, ... having difference  $+16, +24$  so term is 43.
43. **Sol.(b);** The sequence is  $+16, +32, +48, +16, +32, \dots$  So term is 33.
44. **Sol.(c);** The sequence is  $-16^2, 5^2, 14^2, 7^2, 12^2, 9^2$ . So terms is 144.
45. **Sol.(d);** The sequence is,  $-(6 \times 5), -(6 \times 4), -(6 \times 3), -(6 \times 2)$ . So term is 16.
46. **Sol.(a);** The sequence is  $[(5)^2 - 0], (10^2 - 2^2), (16^2 - 5^2), (23^2 - 9^2), (31^2 - 14^2)$
47. **Sol.(b);** In upper side sequence is  $+3, +4, +5, +6$ . ...on denominator the sequence is 2, 4, 8, 16.
48. **Sol.(a);** The sequence is  $-1^2, -3^2, -5^2, -7^2, -11^2, -13^2$ . So term is 1411.
49. **Sol.(c);** The sequence is  $+2, +3, +5, +8, +13$ . So term is 24.

50. **Sol.(b);**  $5\sqrt{5764801} = \sqrt{2401} \Rightarrow 49$  So, .
51. **Sol.(a);** The sequence is  $\times 2, -6, \times 2, -6, \times 2, -6$ . So term is 132.
52. **Sol.(c);** The sequence is  $+0.5, +1.5, +2.5, +3.5$ . So term is 8.7
53. **Sol.(d);** The sequence is  $+3, \times 3, +3, \times 3$ . So, term is 57.
54. **Sol.(b);** The unit place replacement by 6 and alternate decrement of digits so term is 1006.
55. **Sol.(a);** The sequence is  $(\times 7+1), (\times 7+3), (\times 7+5)$ . So term is 14938.
56. **Sol.(c);** The sequence is  $\frac{+11}{-35}, \frac{+22}{-46}, \frac{+22}{-68}$ . So term is 4768.
57. **Sol.(d);** The sequence is 3, 4, 6, 9, 13, 18 with difference of  $+1, +2, +3, \dots$ . So change them into alphabets then term is R.
58. **Sol.(a);** The sequence in alphabet is  $+1, -1, +1, -1$  So term is FKTA.
59. **Sol.(a);** Here is combination of 3 set and their consecutive increment present here. So there is OP.
60. **Sol.(b);** The sequence is  $+3, -1, +3, -1, +3, -1$ . So term is R, Q.
61. **Sol.(a);** In this sequence word's letters are arranged in 264135 order. So ITBHRA changed in 264135 sequence then term will be TAHIBR.
62. **Sol.(c);** The given format is roman format of 51, 71, 91, 111, 131. So next term is CLI.
63. **Sol.(c);** Here the sum of unit digit and tenth digit is the 100th digit.  
As,  $1 + 4 = 5, 4 + 1 = 5$   
 $2 + 1 = 3, 3 + 4 = 7$   
 $5 + 4 = 9$ , But in 816  
 $6 + 1 = 7$  not 8.
64. **Sol.(d);** The sequence is DMRC | DMRC | DMRC | DMRC. So missing term is MMRM
65. **Sol.(a);** The sequence is Book Now/Book Now / Bo. So missing term ONBNB.
66. **Sol.(b);** ZA YB/ZAYB/ZAYB. So missing term is ZBAZB.
67. **Sol.(c);** The sequence is baamb/baamb/baamb. So sequence is ambab.
68. **Sol.(d);** The sequence is ababbma/ababbma/ababbma/ababb. So missing term is ambma.
69. **Sol.(a);** The pattern is  $\times 1.5, \times 1.5, \times 1.5, \times 1.5$ . So missing term is 87.75.
70. **Sol.(b);** The pattern is -  




72. **Sol.(b)**; The pattern is  $\times 1, \times 2.5, \times 4, \times 5.5, \times 7$ .  
 So  $55 \times 4 = 220$ , then missing term is 1210.

73. **Sol.(a)**; The pattern is –

$$\left( \frac{1}{2} + 0.5 \right), \left( \frac{1}{2} + 0.5 \right), \left( \frac{1}{2} + 0.5 \right) \text{. So}$$

missing term is 19.125.

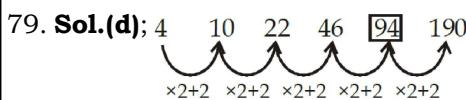
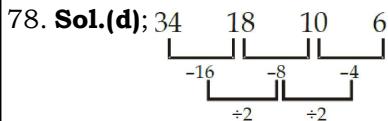
74. **Sol.(c)**; The pattern is  $\div 5, \div 2.5, \div 5, \div 2.5$ . So missing term is 644.

75. **Sol.(b)**; The sequence is  $(\times 3, +2 \times 3), (\times 4, +3 \times 4), (\times 5, +4 \times 5)$ . So, missing term is 16212.

76. **Sol.(d)**; The pattern is add one in previous term and then multiplication with natural numbers. Example:

$$(a+1) \times 1 = 10, (10+1) \times 2 = 22, (22+1) \times 3 = 69. \text{ So missing term is } 22.$$

77. **Sol.(c)**; The pattern is  $10^6, 9^5, 8^4, 7^3, 6^2, 5^1$ .  
 So missing term is 343.



80. **Sol.(a)**; The pattern is  $(\times 15 - 14), (\times 14 - 13), (\times 13 - 12), (\times 12 - 11)$ . So missing term is 1681.1.

81. **Sol.(d)**; Each term in the series is obtained by adding 1 to the square of the preceding term. So, missing term =  $(26)^2 + 1 = 677$ .

82. **Sol.(b)**; Clearly,  $3 \times 3 = 9, 9 \times 3 = 27, 27 \times 3 = 81, \dots$  So, the series is in G.P. in which  $a = 3, r = 3$ . Therefore 8th term =  $ar^8 - 1 = ar^7 = 3 \times 3^7 = (3 \times 2187) = 6561$ .

83. **Sol.(b)**; The pattern is  $\times 2, \times 3/2, \times 2, \times 3/2, \times 2, \dots$  So, missing term =  $18 \times 3/2 = 27$ .

84. **Sol.(a)**; The pattern is  $+1, +3, +6, \dots$  i.e.  $+1, +(1+2), +(1+2+3), \dots$  So, missing term =  $27 + (1+2+3+4+5) = 42$ .

85. **Sol.(b)**; The sum of any three consecutive terms of the series gives the next term, So, missing number =  $6 + 12 + 22 = 40$ .

86. **Sol.(c)**; Alphabetical series are having place value as 1, 2, 3, 5, 7, 11, 13 are prime numbers. So missing terms is M.

87. **Sol.(d)**; The pattern is  $\times 2 + 4, \times 3 + 4, \times 4 + 4, \times 5 + 4 \dots$  So missing term is  $18 \times 3 + 4 = 58$ .

88. **Sol.(b)**; The alphabet is changed with their place value then these are 225, 256, 289, 324, ..., Which are square value of 15, 16, 17, 18, ., So, next term is CBD.

89. **Sol.(c)**; The sequence is  $\times 0.5 + 1.5, \times 1 + 1.5, \times 1.5 + 1.5$ . So, missing term is 9.

90. **Sol.(d)**; The sequence is  $\div 6, \div 5, \div 4, \div 3$ . So missing term is 0.55

91. **Sol.(a)**; The sequence is  $+22, +24, +26, +28, \dots$  So, second term is 23 not 22.

92. **Sol.(b)**; Here the series is as follows :

$$1^2 - 2 = -1 \quad 4^2 - 2 = 14$$

$$2^2 - 2 = 2 \quad 5^2 - 2 = 23$$

$$3^2 - 2 = 7 \quad 6^2 - 2 = 34$$

93. **Sol.(a)**; The sequence is  $\times 3, +4, +5, +6, \times 7, +8$ . So term is 40.

94. **Sol.(d)**; The sequence is  $-15, +14, -13, +12, -11$ . So term is 70.

95. **Sol.(a)**; On looking from the end, we find that the difference between the numbers is respectively 26, 22, 18, 14, 10, 6. Therefore, 8 should come in place of 6.

96. **Sol.(b)**; The sequence is  $-1, +5, -9, +13$  in first letter and in second letter, sequence is  $-5, +9, -13, +17$ . So next missing term is EC.

97. **Sol.(d)**; The pattern is  $\times 2 - 3, \times 3 - 4, \times 4 - 5, \times 5 - 6, \times 6 - 7$ . So missing term is 1263.

98. **Sol.(b)**; The pattern is  $(\times 1 + 7 \times 1), (\times 2 + 6 \times 2), (\times 3 + 5 \times 3)$ . So missing term is 141.

99. **Sol.(c)**; There is 15 days difference in between two given data.

100. **Sol.(a)**; The sequence is  $+8, +(8 + 10), +(18 + 20), +(38 + 40), +(78 + 80)$  So term is 305.



## **Semester - II**

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# INDIAN ECONOMY

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## At a Glance

### INTRODUCTION OF ECONOMICS

The term economics comes from the ancient Greek word ‘*oikonomia*’ means Management of a household. The term economic process refers to those activities, through which goods and services aimed at satisfying human needs, are produced, distributed and used.

Economics includes the study of labour, land and investments of capital, income and production and taxes and government expenditures. Adam Smith, regarded as the Father of Economics, defines Economics as, “The science relating to the laws of production, distribution and exchange.”

### BRANCHES OF ECONOMICS

*The two chief branches are as follow:*

#### **1. Micro Economics:**

It examines the behaviour of basic elements in the economy, including individual agents (such as households and firms or as buyers and sellers) and market and their interaction.

#### **2. Macro Economics:**

It studies the economy as a whole and its features like national income, unemployment, poverty, balance of payments and inflation.

It deals with formulation of models explaining relationship between factors such as consumption, inflation, savings, investment, national income and finance.

### **ECONOMY**

It represents production, distribution or trade and consumption of goods and services in a given geographical area by different agents, which can be individuals, businesses, organisation or governments. The study of economy of any country helps us to find out the financial condition of the population as well as the different working sectors of the economy.

The modern economy is a complex machine. Its job is to allocate limited resources and distribute output among a large number of agents mainly individuals, firms and governments allowing for the possibility that each agent's action can directly (or indirectly) affect other agent's actions. There are two major type of economies:

#### **Open Economy**

It refers to a market-economy, which is generally free from trade barriers and where exports and imports form a large percentage of the GDP

No economy is totally open or closed in terms of trade restriction and all governments have varying degrees of control over movements of capital and labour.

Degree of openness of an economy determines a government's freedom to pursue economic policies of its choice and the susceptibility of the country to the international economic cycles.

#### **Closed Economy**

An economy in which no activity is conducted with outside economies. A closed economy is self-sufficient, meaning that no imports are brought in and no exports are sent out.

The goal of such economy is to provide consumers with everything that they need from within the economy's borders.

The degree of openness of an economy is decided by their respective governments by using policy controls like tariffs, import and export quotas, and exchange rate limits.

In India, since independence, the government has played a major role in planning economic activities.

## Present Status of Indian Economy

- ❖ Indian economy is world's 5th largest economy on nominal GDP basis and the 3rd largest by Purchasing Power Parity (PPP) in 2019.
- ❖ According to CSO, the growth in GDP during 2019-20 is estimated at 4.2% as compared to the growth rate of 6.1% in 2018-19.
- ❖ From 1951 - until 2013, India GDP Annual Growth rate averaged 5.8% reaching an all-time high of 10.2% in December of 1988 and a record low of 5.2% in December of 1979.
- ❖ On a per capita by GDP (PPP) basis, India ranks 122<sup>nd</sup> according to the IMF in the year 2019.
- ❖ Purchasing Power Parity (PPP) is a theory, which states that exchange rates between currencies are balanced, when their purchasing power is the same in each of the two countries.

### Broad Sectors of Indian Economy

#### **Primary Sector—**

The primary sector includes production of raw material and includes agriculture, forestry and fishing.

#### **Secondary Sector—**

Mining manufacturing, electricity, gas and water supply, construction, are called as manufacturing sector)

#### **Tertiary Sector—**

Business, transport, telecommunication, banking, insurance, real estate, community and personnel services, are called as service sector)

#### Nature of Indian Economy

- **Mixed Economy:** It is an economy where both public and private sector co-exist. The nature of Indian economy is a mixed economy. The term Mixed economy was coined by J.M Keynes.
- **Developing Economy:** Following features shows that Indian economy is a

developing economy

- (a) Low per capita income.
- (b) Occupational pattern is primary sector dominated.
- (c) Heavy population pressure.
- (d) Prevalence of chronic unemployment and underemployment.
- (e) Steadily improving rate of capital formation.
- (f) Low capital per head.
- (g) Unequal distribution of wealth/assets.

; **Agrarian Economy:** An agrarian economy is a type of economy that relies primarily on agricultural industry including livestock farming or crop production. It is a form of economy whose major factor of production comes from the agricultural land.

## **INCLUSIVE DEVELOPMENT**

### **Human Development Index (HDI)**

- HDI measure was given by Pakistani Nobel Prize Winner, Mehbub-ul-Haq
- Level of Human development is measured by Human Development Index (HDI), published by UNDP since, 1990.
- Three dimensions
  1. Life expectancy at birth;
  2. Education Index comprising means year of schooling and expected year of schooling;
  3. GNI per capita (PPP US \$) Index.
- India has been ranked 129 out 189 countries on 2019's HDI.

### **Programmes/Measures**

- **NRHM** (National Rural Health Mission) was launched on 2nd April, 2005 to reduce Infant Mortality Rate and Maternal Mortality Rate.
- **NUHM** (National Urban Health Mission) launched on 2013. Education programmes like Sarva Shiksha Abhiyan, Mid-Day Meal Scheme etc were launched.
- **Rural development programmes like MGNREGA and Bharat Nirman.**

## **RESERVE BANK OF INDIA (RBI)**

RBI was established in 1935, under RBI Act, 1934. RBI is the Central Bank of India. The main purpose of creating RBI was to regulate money supply and credit in the country. RBI was nationalised in 1949 and its first Indian Governor was CD Deshmukh. Its headquarter is in Mumbai.

## FUNCTIONS OF THE RBI

- ❖ Monetary policy, regulation and supervision of the banking and non-banking financial institutions.
- ❖ Debt and cash management for Centre and State Governments.
- ❖ Foreign exchange management, current and capital account management.
- ❖ Management of foreign exchange reserves.
- ❖ Currency management; oversight of the payment and settlement systems.
- ❖ Development role.
- ❖ Research and statistics.

## THE RBI CREDIT CONTROL

### QUANTITATIVE CREDIT CONTROL

It is used to control the volume of credit and indirectly to control the inflationary and deflationary pressures. The quantitative credit control consists of

- ❖ **Bank Rate** It is the rate, at which the RBI gives finance to Commercial Banks.
- ❖ **Cash Reserve Ratio (CRR)** Cash that banks deposits with the RBI without any floor rate or ceiling rate.
- ❖ **Statutory Liquidity Ratio (SLR)** It is the ratio of liquid asset, which all Commercial Banks have to keep in the form of cash, gold and government approved securities with itself.
- ❖ **Repo Rate** It is the rate, at which RBI lends short-term money to the banks against securities.
- ❖ **Reverse Repo Rate** It is the rate, at which banks park short-term excess liquidity with the RBI. This is always 100 base point, 1% less than Repo rate.

## QUALITATIVE/SELECTIVE/DIRECT CREDIT CONTROL

Qualitative measures are used to make sure that purpose, for which loan is given is not misused. It is done through

- ❖ Credit rationing
- ❖ Regulating loan to consumption etc.

## NEW BANK LICENCE

In April 2015, Reserve Bank of India provided licence for operation to two new private banks namely Bandhan Financial Services and Infrastructure Development Finance Company (IDFC).

## UNION BUDGET

- The budget is an extensive account of the government's finances, in which revenues from all sources and expenses of all activities undertaken are aggregated.
- The Finance Minister presents the Union Budget every year in the Parliament that contains the Government of India's revenue and expenditure for one fiscal year, which runs from 1st April to 31st March.

### Historical Preview

- The term 'Budget' is acutally derived from a French word 'Bougette', which means a sack or pouch. It was first used in France in 1803.
- In the Constitution of India the term Budget is nowhere used. It is rather mentioned as Annual Financial Statement under Article 112 comprising the revenue budget, capital budget and also the estimates for the next fiscal year called budgeted estimates.

### Preparation of Budget

The budget is prepared by the budget division in the Ministry of Finance (MoF), after consulting with other ministries and the Planning Commission. The process majorly includes following steps which may be sequential or overlapping too.

### Stages in Budget Enactment

*The budget goes through the following six stages in the Parliament*

- Presentation of the budget on the floor of the house before the Lok Sabha.
- General discussion on the budget.
- Scrutiny by departmentally related standing committees.
- Voting on demands for grants.
- Passing of Appropriation Bill (Article 114 of the Constitution of India).
- Passing of Finance Bill (under Rule 219 of the Lok Sabha).

### Vote on Account

- Usually, the Appropriation Bill (expenditure part of budget) is passed by end of April but government needs money from beginning financial year, so government use vote-on-account to remove money from consolidated fund of India.

### Types of Budgeting

#### **Line Item Budgeting—**

If emphasises on the items (objects) of expenditure without highlighting its purpose.

It gives object-wise (Line-item) classification in budget. Under this system, the amount granted by the legislature on a specific item should be spent on that item only.

### Quick Digest

- ❖ **John Mathai** proposed the first budget of Republic of India in 1950 and also the creation of Planning Commission.
- ❖ Finance Minister **Morarji Desai** has given budget for the maximum number of times (10) followed by P. Chidambaram, who has given 8 budgets.
- ❖ **C.D Deshmukh** was the first Indian Governor of RBI to have presented the Interim Budget for the year 1951-52.
- ❖ **Mrs. Indira Gandhi** is the only woman to hold the post of the Finance Minister and to have presented the budget in her capacity as the Prime Minister of India in 1978.
- ❖ The first such mini budget was presented by **T.T Krishnamachari** on 30th November 1956, in form of fresh taxation proposals through Finance Bills, demanded by the prevailing domestic and international economic situation.
- ❖ From 2017, the Railway Budget has been merged with the Central Budget on the recommendation of Bibek Debroy Committee.

### **Output Budgeting—**

It concentrates only on the quantitative aspect of expenditure.

### **Performance Based Budgeting—**

It is an attempt to solve decision making problems based on a programmes ability to convert inputs to outputs and use inputs to affect certain outcomes. Performance may be judged by a certain programmes ability to meet certain objective that contribute to more abstract goal as calculated by that programmes ability to use resources efficiently by linking input to outputs.

### **Outcome Budgeting—**

This type of budgeting tries to ensure that budget outlays translate into concrete outcomes.

### **Zero-Based Budgeting—**

It is a method of budgeting, in which all budgetary allocations are set to nil at the beginning of a financial year.

Zero-based budgeting requires the budget request be re-evaluated thoroughly, starting from the zero-base. This process is independent of whether the total budget or specific line items are increasing or decreasing. Zero based budgeting also refers to the identification of a task or tasks and then funding resources to complete the task independent of current renouncing.

### **Gender Budgeting—**

It came into being in 2004-05. To contribute towards the women empowerment and removal of inequality based on gender, role of budgeting has been accepted through this step.

### **Programme Budgeting—**

It emphasis the planning aspect of budgeting for selecting the best out of a number of available programmes and for optimising the choice.

The Government has decided on 18 November, 2016 to merge Rail Budget with the Union Budget from Budget year 2017-18.

# INDIAN POLITY

## At a Glance

### Framing of the Constitution

- The idea to have Constitution was given by M.N. Roy (A pioneer of Communist Movement in India).
- The present constitution was framed by the **Constituent Assembly of India** setup under **Cabinet Mission Plan** of May 16, 1946.

**Manabendra Nath Roy or M.N Roy,** is one of India's most colourful and unusual international revolutionaries. A founding member of the Communist Party of India, he also established the Communist Party in 1917 in Mexico, hobnobbed with Joseph Stalin and fought the violent overthrow of British rule in India.

### ❖ COMPOSITION OF CONSTITUENT ASSEMBLY

- ◆ **The Constituent Assembly consisted of 389 members**, of which 292 were elected by the elected members of the Provincial Legislative Assemblies while 93 members were nominated by the Princely States. A representative from each of the four Chief Commissioners Provinces of Delhi, Ajmer-Marwar, Coorg and British Baluchistan was also added.
- ◆ Each Province and each Indian State or group of States were allotted the total number of seats proportional to their respective population roughly in the ratio of **one in every million**.
- ◆ The seats in each province were distributed among the three main communities—Muslims, Sikhs and General, in proportion to their respective populations.
- ◆ Members of each community in the Provincial Legislative Assembly elected their own representatives by the method of proportional representation with single transferable vote.
- ◆ The method of selection in the case of representatives of Indian States was to be determined by consultation.

- ◆ But when the Muslim League decided to withdraw its members from the Constituent Assembly of India and with the creation of a separate Constituent Assembly for Pakistan on July 16, 1947, the membership of the Constituent Assembly of India was reduced to 299, out of which 229 represented the provinces and 70 were nominated by the Princely States.

### DRAFTING COMMITTEE

- Drafting Committee, which bore the responsibility of drafting the Constitutional document during the recess of the Constituent Assembly, from July 1947 to Sept 1948, was formed on Aug 29, 1947. Its members were :
  1. Dr. B. R. Ambedkar – Chairman
  2. N. Gopalaswami Ayyangar
  3. Alladi Krishnaswami Ayyar (a distinguished jurist)
  4. K.M. Munshi (a distinguished jurist)
  5. Syyed Mohd. Saadulla
  6. N. Madhav Rao (in place of B L. Mitra)
  7. D. P. Khaitan (T Krishnamachari, after Khaitan's death in 1948).

### ❖ Functioning of the Constituent Assembly

- ◆ B.N. Rao was appointed the constitutional advisor of the Assembly.
- ◆ The first meeting of the Constituent Assembly took place on Dec 9, 1946 with Dr. Sachidanand Sinha as its interim President. Dr. Rajendra Prasad was elected as its President on Dec 11, 1946.
- ◆ The Assembly had 13 committees for framing the constitution. The important ones were :

Committee	Chairman
Union Power Committee	J.L. Nehru
Fundamental Rights and Minority Committee	V.B. Patel
Provincial Constitution Committee	V.B. Patel
Union Constitution Committee	J.L. Nehru
Drafting Committee	B.R. Ambedkar
Flag Committee	J.B. Kripalani
Steering Committee	Dr. Rajendra Prasad

- ◆ All these Committees submitted their reports, which were widely discussed by the Constituent Assembly.

## **CONSTITUTIONAL DEVELOPMENT IN INDIA**

- The history of the Constitutional development in India can be traced back to the Regulating Act of 1773, which for the first time made the provision for the post of Governor-General in India. Since then, a number of constitutional experiments were introduced aiming at streamlining the Indian Administration.
- However, the year 1858 serves as watershed when the Indian Administration came under the direct rule of the British Crown and the centralization of the administration was at its pinnacle. Thus the period of British constitutional development experiment in India can be divided into two phases :
  - ◆ Constitutional experiments during the rule of the East India Company (1773-1857)
  - ◆ Constitutional experiments under the British Crown (1857-1947)

### **GOVERNMENT OF INDIA ACT, 1935**

- Provided for the establishment of **All-India Federation** consisting of the British provinces and the Princely States. The joining of Princely States was voluntary and as a result the federation did not come into existence.
- **Dyarchy was introduced at the Centre** (e.g., Department of Foreign Affairs and Defence were reserved for the Governor General). The other Federal subjects were to be administered by the Governor General with the assistance and advice of a Council of Ministers to be chosen by him (but to include representatives of Princely States and minorities, and to be responsible to the Central Legislature). Residuary powers were to be with the Governor General only.
- The Federal Legislature (Central Legislature) was to have two chambers (bicameral) the Council of State and the Federal Assembly. The Council of State was to be a permanent body with one-third of its membership being vacated and renewed triennially. The Federal Assembly's duration was fixed for five years.
- It made a 3-fold division of powers : Federal (Central) Legislative List. Provincial Legislative List and the concurrent

Legislative List. Residuary legislative powers were subject to the discretion of the Governor General. Even if a bill was passed by the Federal Legislature, the Governor General could veto it, while even Acts assented to by the Governor General could be disallowed by the King-in-Council.

- **Provincial autonomy replaced Dyarchy in Provinces** i.e., the distinction between Reserved and Transferred subjects was abolished and fully responsible government was established, subject to certain safeguards. They were granted separate legal identity.
- The Governor was the head of the Provincial Executive and was expected to be guided by the advice of the popular ministries. However, the Act gave arbitrary powers to the Governors to act in their 'discretion' in certain matters.
- The Act also provided for a Federal Court (which was established in 1937), with original and appellate powers to interpret the Constitution. A Federal Bank (the Reserve Bank of India) was also established. The Indian Council of Secretary of State was abolished.
- Principle of separate electorate was extended to include Anglo-Indians, Indian Christians and Europeans. Burma (now Myanmar) and Aden were separated from India and two new provinces-Orissa and Sind- were created.

### **Enactment of the Constitution**

- The Drafting Committee prepared the draft of the Constitution, which came out in the open on Feb 4, 1948 (first reading) to elicit the public opinion and reaction to it. The Assembly had a general discussion on it for five days.
- The Constituent Assembly next met on Nov 15, 1948 when the provisions of the Draft were considered and discussed in detail (second reading). During this stage, as many as 7,653 amendments were proposed and 2,473 were actually discussed in the Assembly.
- The third reading of the draft started on Nov 14, 1949. It was finally passed and accepted on Nov 26, 1949. The last session of the Assembly was held on Jan 24, 1950, which unanimously elected Dr. Rajendra Prasad as the President of India. In all, 284 members of the Assembly signed the official copies of the Indian Constitution which

came into effect on Jan 26, 1950, known and celebrated as the Republic Day of India.

- The Constitution, adopted on Nov 26, 1949, contained a Preamble, 395 articles & 8 schedules (12 at present).
- Constituent Assembly took 2 years-11 months-18 days to complete the constitution.
- Although Constitution was ready by Nov 26, 1949 but was delayed till Jan 26, 1950 because in 1929 on this day Indian National Congress demanded 'Poorna Swaraj' in Lahore session under J.L. Nehru. [Some of the provisions as those related to citizenship, elections, provisional Parliament etc, were given immediate effect].
- Constituent Assembly adopted our National Flag on July 22, 1947. It was designed by Pingali Venkaiah of Andhra Pradesh.

## Preamble to the Constitution

- It is a preface or the introduction to the constitution. It is not an integral part of constitution. The interpretation of constitution is based on the spirit of Preamble.

The '**Objective Resolution**', proposed by Pandit Nehru and passed by the Constituent Assembly, ultimately became the Preamble.

### **The Preamble States :**

**" WE THE PEOPLE OF INDIA, have solemnly resolved to constitute India into a SOVEREIGN SOCIALIST SECULAR DEMOCRATIC REPUBLIC. and to secure to all citizens, JUSTICE social, economic and political; LIBERTY of thought, expression, belief, faith and worship;**

**EQUALITY of status and of opportunity; and to promote among them all FRATERNITY assuring the dignity of the individual and the unity and integrity of the Nation;**

**IN OUR CONSTITUENT ASSEMBLY, this twenty-sixth day of November, 1949, do HEREBY ADOPT, ENACT AND GIVE TO OURSELVES THIS CONSTITUTION"**

- The idea of preamble was borrowed from the constitution of USA.
- The words 'SOCIALIST', 'SECULAR' and 'INTEGRITY' were added by the 42nd Amendment in 1976.
- **Sovereign** means free to follow internal

and external policies. **Socialist** means no concentration of power and money. **Secular** means no particular religion. **Democratic** means Elected representatives. **Republic** means no room for hereditary ruler or monarch.

- Preamble is not justiciable.

## Fundamental Rights

- The issue of Fundamental Rights had been on the national agenda long before the actual task of Constitution-making was taken in hand. In 1931, the Indian National Congress at its Karachi session, presided by Sardar Patel, had adopted a resolution on Fundamental Rights.

### **Difference between Fundamental Rights & Legal Rights.**

- While an ordinary legal right is protected and enforced by the ordinary law of the land (i.e. in cases of violation of legal rights, the aggrieved person may have his relief by filing an ordinary suit in the subordinate courts or by a writ application to the High Court, which are subject to appeals), a Fundamental Right is one in which Supreme Court can be approached directly.

## Basic Feature Theory

- In 1973, in KESHAVANAND BHARATI vs. STATE OF KERALA CASE the Supreme Court held that the Preamble was part of the Constitution and contained its basic structure. The Preamble was not only very much a part of the Constitution, but was of "extreme importance and the Constitution should be read and interpreted in the light of the grand and noble vision expressed in the Preamble". Any provisions of the Constitution should be amended under Article 368 only "within the broad contours of the Preamble and the Constitution".
- Thus the honourable Supreme Court held that the Basic ELEMENTS or FEATURES of the CONSTITUTION as contained in the PREAMBLE cannot be altered by any amendment under Article 368. Although the basic elements were not precisely defined, those mentioned in the Preamble were specifically included.
- Thus it overruled the Berubari Opinion of its own. (In this case, Preamble was not considered as the part of constitution)

### Centre Supreme Court at Loggerheads

- **Golaknath Case :** In the Golaknath vs. State of Punjab case, the Supreme Court held that the Parliament could not amend the Fundamental Rights under Part III of the Constitution. The Parliament on its part, through 24th Amendment in 1971, assumed for itself the power to amend Fundamental Rights.
- In 1973, the **Keshavanand Bharati vs. State of Kerala case** happened in which the basic feature Theory was enumerated.
- **42nd Amendment :** Under this amendment, the scope of the amending power of the Parliament under Article 368 was extended to many parts of the constitution. Also, the Constitutional Amendments were placed beyond the purview of the Supreme Court's power of Judicial Review.
- **Minerva Mills Case :** In the Minerva Mills case of 1980, the Supreme Court tried to nullify the provisions of the 42nd Amendment and held that there could not be any amendment in the basic structure of the Constitution.

### Nature of the Constitution

Our constitution is QUASI-FEDERAL in nature, designed to work as a UNITARY GOVERNMENT in emergency & FEDERAL GOVERNMENT in normal times.

#### **Federal feature**

1. Double seat of govt.
2. Division of power
3. 2 houses of parliament

#### **Unitary features**

1. Single citizenship
2. Single constitution
3. Single Supreme court
4. Appointment of Governors
5. Financial dependence of States.

### Borrowed Features of the Constitution

- Nearly 75 percent of the Constitution can be said to be a reproduction of the Government of India Act, 1935 with suitable adaptations and modifications. The basic structure of the polity and provisions regulating Union-State relations, declaration of emergency etc. were largely based on the 1935 Act.

- Besides the indigenous sources, the Constituent Assembly had before it several models of foreign Constitutions.

#### **From U.K.**

1. Nominal Head-President (like Queen)
2. Cabinet System of ministers.
3. Post of the PM
4. Parliamentary Type of Government
5. Bicameral Parliament
6. Lower House more powerful
7. Council of Ministers responsible to Lower House
8. Speaker in the Lok Sabha
9. Single citizenship

#### **From U.S.**

1. Written Constitution
2. Executive head of state known as President and his being the Supreme Commander of the Armed Forces
3. Vice-President as the ex-officio Chairman of Rajya Sabha
4. Fundamental Rights
5. Supreme Court
6. Provision of States
7. Independence of Judiciary and judicial review
8. Preamble
9. Removal of Supreme Court and High Court judges

#### **From erstwhile USSR**

1. Fundamental Duties
2. Five year planning

#### **From Australia**

1. Concurrent list
2. Language of the preamble
3. Provision regarding trade, commerce

#### **From Japan**

1. Law on which the Supreme Court functions

#### **From WEIMER CONSTITUTION OF GERMANY**

1. Suspension of Fundamental Rights during the emergency

#### **From SOUTH AFRICA**

1. Procedure of Constitutional Amendments

#### **From CANADA**

1. Scheme of federation with a strong centre
2. Distribution of power between Centre and the States and placing Residuary Powers with the Centre

#### **From IRELAND**

1. Concept of Directive Principles of State

- Policy (Ireland borrowed it from Spain).
- 2. Method of election of the President
- 3. Nomination of members in the Rajya Sabha by the President

### **Nature of Fundamental Rights**

- The Fundamental Rights provide protection only against the State action and do not safeguard against the action of private individuals, except the right pertaining to untouchability and the right against exploitation. In these two cases, Fundamental Rights are available both against the State and the individuals.
- The State may deny some of the fundamental rights to a class of people as armed forces, para-military personnel, police, etc. in the interest of administrative efficiency or national integrity.
- Except the rights mentioned in Articles 20 and 21, President has the power to suspend the enforcement of Fundamental Rights.

## **Schedules in Constitution**

<b>First Schedule</b>	◆ List of States & Union Territories	7. Konkani	8. Malayalam	9. Manipuri
<b>Second Schedule</b>	◆ Salary of President, Governors, Chief Judges, Judges of High Court and Supreme Court, Comptroller and Auditor General.	10. Marathi	11. Nepali	12. Oriya
<b>Third Schedule</b>	◆ Forms of Oaths & affirmations.	13. Punjabi	14. Sanskrit	15. Sindhi
<b>Fourth Schedule</b>	◆ Allocate seats for each State of India in Rajya Sabha.	16. Tamil	17. Telugu	18. Urdu
<b>Fifth Schedule</b>	◆ Administration and control of Scheduled Areas and Tribes.	19. Santhali	20. Bodo	21. Maithili
<b>Sixth Schedule</b>	◆ Provisions of administration of Tribal Areas in Assam, Meghalaya, Tripura & Mizoram.	22. Dogri		
<b>Seventh Schedule</b>	◆ Gives allocation of powers & functions between Union & States containing 3 lists:			
<b>Eight Schedule</b>	◆ List of 22 languages of India recognized by constitution.			
1. Assamese	2. Bengali	3. Gujarati		
4. Hindi	5. Kannada	6. Kashmiri		

- ◆ Sindhi was added in 1967 by 21st amendment.
- ◆ Konkani, Manipuri and Nepali were added in 1992 by 71st amendment.
- ◆ Sandhali, Maithili, Bodo and Dogri were added in 2003 by 92nd Amendment.

**Ninth Schedule** ◆ Added by 1st amendment in 1951. Contains acts & orders related to land tenure, land tax, railway, industries.  
[Right to Property not a fundamental right now].

**Tenth Schedule** ◆ Added by 52nd amendment 1985. Contains provision of disqualification on grounds of defection.

**Eleventh Schedule** ◆ By 73rd amendment in 1992. Contains provisions of Panchayati Raj.

**Twelfth Schedule** By 74th amendment in 1992. Contains provisions of Municipal Corporation.

❖ **RIGHT TO EQUALITY**

❖ **Article 14: Equality before law** — The State shall not deny to any person equality before the law or the equal protection of the laws within the territory of India. Equality before the law implies that no one is above the law of the land.

○ However, the Constitution allows the following exceptions to the rule of equality before the law : (a) the President or the Governor of a State is not answerable to any Court for the exercise and performance of the powers and duties of office; (b) No criminal proceeding is to be instituted or continued against the President or a Governor in any Court during his term of office; (c) No civil proceeding in which relief is claimed against the President or the Governor can be instituted

during his term of office in any Court in respect of any act done by him in his personal capacity, before or after he entered the office of President or Governor, until two months expire after notice in writing has been delivered to the President/Governor stating the nature of the proceedings, the cause of action, and other details.

- These apart, other exceptions, such as in favour of foreign rulers and ambassadors, also exist in accordance with international standards.
- ❖ **Article 15: Prohibition of discrimination on grounds of religion, race, caste, sex or place of birth** — Also, nothing in this article shall prevent the State from making any special provision for women and children and also for the advancement of any socially and educationally backward classes of citizens or for the Scheduled Castes and Scheduled Tribes.
- ❖ **Article 16: Equality of opportunity in matters of public employment** — There shall be equality of opportunity for all citizens in matters relating to employment or appointment to any office under the state.
  - It does not prevent the State from prescribing the necessary qualifications and selective tests for recruitment for Government services.
  - Then, there may be good reasons for reserving certain posts in a State for the residents only.
  - It also empowers the State to make special provision for the reservation of appointments or posts in favour of any backward class of citizens which in the opinion of State are not adequately represented in the services under the State.
  - It also provides for the reservation of seats in promotion for the Scheduled Castes and Scheduled Tribes.
- ❖ **Article 17: Abolition of untouchability** — Untouchability is abolished and its practice in any form is forbidden.
- ❖ **Article 18: Abolition of titles** — No title, not being a military or academic distinction, shall be conferred by the State.
  - Bharat Ratna, Padma Vibhushan, Padma Bhushan, Padma Shri and other State awards are not regarded as titles in terms of Article 18(1) of the Constitution.
- Clause (2) prohibits a citizen of India from accepting any title from a foreign State.
- Clause (3) Provides that a foreigner holding any office of profit or trust under the State cannot accept any title from any foreign State without the consent of the President. This is to ensure loyalty to the government, he serves for the time being and to shut out all foreign influence in Government affairs.
- Clause (4) provides that no person holding any office of profit under the State is to accept without the consent of the President, any present, emolument or office of any kind from or under any foreign State.
- ◆ It is to be noted that there is no penalty prescribed for the infringement of the above prohibition. Article 18 is merely directory. It is, however, open to the Parliament to make a law for dealing with such a person who accepts a title in violation of the prohibition prescribed in Article 18.
- ❖ **RIGHT TO FREEDOM**
- ❖ **Article 19: Protection of certain rights regarding freedom of speech etc.** — It guarantees the citizens of India the following six fundamental freedoms :
  - a. Freedom of Speech and Expression
  - b. Freedom of Assembly.
  - c. Freedom to form Associations.
  - d. Freedom of Movement
  - e. Freedom of Residence and Settlement
  - f. Freedom of Profession, Occupation, Trade or Business.
- **Freedom of Press** : The Indian Constitution does not provide for the freedom of press separately. It is implicit in Article 19. The restrictions that limit the freedoms in the case of individuals apply to the press also.
- ❖ **RIGHT TO INFORMATION ACT**
- On Oct 12, 2005 Right to Information was made a constitutional Act with the hope of an era of better, more transparent, accountable and responsive governance. It marks a significant shift for Indian democracy with greater access to citizens to information and the greater responsiveness of the government to the society.
- Right to Information is a corollary to the Fundamental Right of Freedom of Speech and Expression, Art 19(a).

- A strong and independent Information Commission has been set up at the Centre on the pattern of Central Vigilance Commission.
- The Central Information Commission shall consist of one Chief Information Commissioner (CIC) and not more than ten Central Information commissioners. They shall be appointed by the President on the recommendation of a Committee consisting of the PM, the leader of opposition in Lok Sabha and a Union Cabinet Minister to be nominated by the PM.
- The CIC and other Information Commissioners shall hold office for a term of 5 years or till they attain the age of 65 years, whichever is earlier. They shall not be eligible for reappointment.
- The Central Information Commission can fine an official Rs. 250 per day, with a maximum of Rs. 25,000, if information is delayed beyond stipulated 30 days.

**Article 20: Protection in respect of conviction for offences.** No person shall be convicted of any offence except for violation of the law in force at the time of the commission of the act charged as an offence, nor be subjected to a penalty greater than that which might have been inflicted under the law in force at the time of the commission of the offence. Thus the legislature is prohibited to make criminal laws having retrospective effects.

- ◆ No person shall be prosecuted and punished for the same offence more than once (**double jeopardy**).
- ◆ No person accused of any offence shall be compelled to be a witness against himself. Under the frame of criminal jurisprudence, a person is presumed to be innocent and it is for the prosecution to establish his guilt. Again, a person accused of an offence need not make any statement against his will.

**Article 21: Protection of life and personal liberty.** No person shall be deprived of his life or personal liberty except according to procedure established by law.

- Personal freedom is secured by the Constitution by the judicial writ of Habeas Corpus (Article 32 and 226).
- The 86th Constitutional Amendment Act, 2002, has been inserted in the Constitution as a new article 21-A. It states that the State shall provide free

and compulsory education to all children of the age of six to fourteen years in such manner as the state may, by law, determine.

○ **Inferred Rights :** They are the rights of the citizens which are not explicitly provided by the Constitution but have been derived by liberal interpretation of the various provisions of the Constitution. Some inferred rights from Art. 21 are

- *Right to health of the workers.*
- *Right to privacy (i.e. to be left alone)*
- *Right to live with dignity.*
- *Right against denial of wages and arbitrary dismissal of workers.*
- *Right to speedy trial for under-trials.*
- *Right against cruel punishment.*
- *Right to shelter.*
- *Right to free legal aid.*

○ **Article 22: Protection Against arrest and detention in certain cases.** It states that : (a) no person who is arrested shall be detained in custody without being informed of the grounds for such arrest nor shall he be denied the right to consult, and to be defended by, a legal practitioner of his choice; (b) every person who is arrested and detained shall be produced before the nearest magistrate within a period of twenty-four hours of such arrest excluding the time necessary for the journey from the place of arrest to the court of the magistrate and no such person shall be detained in custody beyond the said period without the authority of a magistrate.

- The above safeguards are not, however, available to an enemy alien and a person arrested or detained under a law providing for Preventive Detention.
- Preventive Detention means 'Detention of a person without trial'. Its objective is not to punish a man for having done something but to intercept him before he does it and to prevent him from doing it. The government is entitled to detain an individual under Preventive Detention only for two months. If it seeks to detain the arrested person for more than two months, it must obtain a report from an Advisory Board. Parliament is empowered to prescribe, by law, the maximum period for which a person may be detained under a law of Preventive Detention.

#### ❖ **RIGHT AGAINST EXPLOITATION**

- ❖ **Article 23: Prohibition of traffic in human beings and forced labour** — Traffic in human beings and ‘begar’ (involuntary work without payment) and other similar forms of forced labour are prohibited and any contravention of his provision shall be an offence punishable in accordance with law.
- ❖ **Article 24: Prohibition of employment of children in factories etc.** — No child below the age of 14 can be employed in any factory or mine or any other hazardous employment.

#### ❖ **RIGHT TO FREEDOM OF RELIGION**

- ❖ **Article 25: Freedom of conscience and free profession, practice and propagation of religion.** This right is, however,
  - Subject to public order, morality and health and to the other provisions of Part III of the Constitution.
  - Further, the State is empowered with a law to regulate or restrict any economic, financial, political or other secular activity which may be associated with religious practice.

- ❖ **Article 26: Freedom to manage religious affairs.** Subject to public order, morality and health, every religion shall have the right, (a) to establish and maintain institutions for religious and charitable purposes; (b) to manage its own affairs in matters of religion; (c) to own and acquire movable and immovable property; (d) to administer such property in accordance with law.

- ❖ **Article 27: Freedom as to payment of taxes for promotion of any particular religion** — It provides that ‘no person shall be compelled to pay any tax for the promotion or maintenance of any particular religion or religious denomination’.

- ❖ **Article 28: Freedom as to attendance at religious instruction or religious worship in certain educational institutions.**

- Clause (1) says that no religious instruction shall be provided in any educational institution wholly maintained out of State funds.
- Clause (2) says that Clause (1) shall not apply to an educational institution which is administered by the State but has been established under any endowment or trust **which requires** that

religious instructions shall be imparted in such institutions.

- Clause (3) says that no person attending any educational institution recognized by the State or receiving aid out of State funds shall be required to take part in any religious instruction that may be imparted in such institution or to attend any religious worship that may be conducted in such institution or in any premises attached thereto unless such person or, if such person is a minor, his guardian has given his consent thereto.

#### ❖ **CULTURAL AND EDUCATIONAL RIGHTS**

- ❖ **Article 29: Protection of interests of minorities.**
  - (1) Any section of the citizens residing in the territory of India or in any part thereof having a distinct language, script or culture of its own shall have the right to conserve the same.
  - (2) No citizen shall be denied admission into any educational institution maintained by the State or receiving aid out of State funds on grounds only of religion, race, caste, language or any of them.

- ❖ **Article 30: Right of minorities to establish and administer educational institutions.**

- (1) All minorites, whether based on religion or language, shall have the right to establish and administer educational institutions of their choice.
- (2) The State shall not, in granting aid to educational institutions, discriminate against any educational institution on the ground that it is under the management of a minority, whether based on religion or language.

- ❖ **Article 31:** Omitted by the 44th Amendment Act, 1978.

#### ❖ **RIGHT TO CONSTITUTIONAL REMEDIES**

- ❖ **Article 32:** The right to move to the Supreme Court in case of the violation of Fundamental Rights (called *Soul and heart of the Constitution* by Dr. BR Ambedkar)
  - To enforce the Fundamental Rights, the Supreme Court is empowered, under Article 32 to issue writs of various forms.

## Forms of Writs

### ❖ **HABEAS CORPUS**

- Literally means 'to have the body'. It implies that a person imprisoned or detained by the law can enquire under what authority he has been imprisoned or detained. The Court issues the writ against the authority concerned if the executive arrests someone without the authority of law or in contravention of procedure established by law.
- The writ is not issued if either the person arrested or the person against whom the writ is issued is outside the jurisdiction of the Court; if the person concerned has been imprisoned by a Court of law on a criminal charge; if the person concerned is involved in proceedings for contempt by a Court of record or by Parliament.

### ❖ **MANDAMUS**

- Literally means a 'command' issued by the court commanding a person or a public authority to do or forbear to do something in the nature of public duty. The writ of mandamus can be issued by the Court to enforce Fundamental Rights; whenever a public officer or a Government has committed an act violating a person's Fundamental Rights, the Court can restrain that authority from enforcing such orders or committing such an act.
- The writ is issued against a private individual or organization unless the State is in collusion with such a party in contravening a Constitutional provision or a statute.

### ❖ **QUO WARRANTO**

- An order issued by the court to prevent a person from holding office to which he is not entitled and to oust him from that office.
- For the writ of quo warranto to be issued, the office must be public, created by statute or by the Constitution, the office must be a substantive one, and there should have been a contravention of the Constitution or a statute in appointing the person to that office.

### ❖ **PROHIBITION**

- The writ of prohibition is issued by the Supreme Court or a High Court to an inferior Court forbidding the latter to continue proceedings in a case in excess of its jurisdiction or to usurp a jurisdiction

with which it is not legally vested.

- The writ is not available against a public officer not vested with judicial or quasi-judicial functions. The Supreme Court can issue the writ only where a Fundamental Right is affected.

### ❖ **CERTIORARI**

- The writ of certiorary is issued to a lower Court after a case has been decided by it, quashing the decision or order. The objective to secure that the jurisdiction of an inferior Court or tribunals is properly exercised and that it does not usurp the jurisdiction which it does not possess.
- The tribunal is considered to have acted without jurisdiction if the Court is not properly constituted, where people not qualified to sit on it have pronounced judgement, where the decision has been obtained by fraud, collusion or corruption, or where the subject matter of enquiry is beyond the scope of the tribunal. Even if the Court acts within its jurisdiction, where an 'error of law' has been committed, a writ of certiorari can quash the decision.
- In short, while prohibition is available during the pendency of the proceedings and before the order is made, certiorari can be issued only after the order has been made, under similar circumstances.

### ❖ **SUSPENDABILITY OF FUNDAMENTAL RIGHTS**

- When the President proclaims a National Emergency under Article 352, on grounds of war or external aggression (but not armed rebellion), the rights guaranteed by Article 19 are automatically suspended.
- As regards with the suspension of any or all the other Fundamental Rights, the Constitution further empowers the President to issue a separate proclamation under Article 359.
- By the 44th Amendment Act, 1978, the suspension of Articles 20 and 21 has been prohibited under any circumstances. Therefore, the present position is that during the operation of National Emergency, the right to move the Court for the enforcement of any or all the Fundamental Rights, excepting those guaranteed by Article 20 and 21, can be suspended by a Presidential proclamation.

## Directive Principles of State Policy

- Mentioned under Part IV of the Constitution covering Articles 36 to 51.
- They tell about the aims that the state should strive to achieve.
- This part of the Constitution is undoubtedly the sister of the previous part dealing with the Fundamental Rights, and is described as the 'Conscience of the Constitution'.
- Their ideas have been incorporated from the Constitution of Ireland. They are a unique blend of socialistic, liberal, democratic and Gandhian Principles.
- Mere instructions, nor enforceable by law, for day-to-day administration of the country.
- In STATE OF TAMILNADU Vs. L. ABU KAVUR BAI case in 1984, the Supreme Court held that although directive principles are not enforceable, yet the court shouldn't avoid them.

## Classification and Enumeration of Directive Principles

- Can be classified under four principal groups. The first group deals with general principles of social policy. The second with the principles of administrative policy. the third deals with socio-economic rights. The fourth and last group contains a statement of the International Policy of the Indian Republic.
- ❖ They are as follows:

  1. **Article 38:** To secure and protect a social order which stands for the welfare of the people.
  2. **Article 39:** The State will, in particular, direct its policy towards securing:
    - (a) Adequate means of livelihood to all citizens.
    - (b) A proper distribution of the material sources of the community for the common good.
    - (c) Prevention of concentration of wealth to common detriment.
    - (d) Equal pay for equal work for both men and women.
    - (e) The protection of the strength and health of the workers and avoiding circumstances that force citizens to enter avocations unsuited to their age or strength.

- (f) The protection of childhood and youth against exploitation or moral and material abandonment.
- 3. **Article 40:** To organize village panchayats as units of self-government.
- 4. **Article 41:** To secure the right to work, education and public assistance in cases of unemployment, old age, sickness, etc.
- 5. **Article 42:** To secure just and humane conditions of work and maternity relief.
- 6. **Article 43:** To secure work, a living wage, a decent standard of life, leisure and social and cultural opportunities for people, and in particular to promote cottage industries.
- 7. **Article 44:** To secure a uniform civil code applicable to the entire country.
- 8. **Article 45:** To provide, within 10 years from the commencement of the Constitution, free and compulsory education to all children upto the age of 14.
- 9. **Article 46:** To promote with special care the educational and economic interests of the weaker sections of the people, especially the Scheduled Castes and Scheduled Tribes.
- 10. **Article 47:** To secure the improvement of public health and the prohibition of intoxicating drinks and drugs.
- 11. **Article 48:** To organize cultural and animal husbandry on scientific lines and preserve and improve the breeds and prohibit the slaughter of cows, calves and other milch and draught cattle.
- 12. **Article 49:** To protect all monuments of historic interest and national importance.
- 13. **Article 50:** To bring about the separation of the judiciary from the executive.
- 14. **Article 51:** To endeavor to secure
  - (a) The promotion of international peace and security.
  - (b) The maintenance of just and honorable relations between nations.
  - (c) The settlement of international disputes by arbitration.

### Directive Principles Added after 42nd Amendment, 1976

- ☞ **Article 39(a):** The legal system promotes justice on the basis of equal opportunity and will, in particular, free legal aid by suitable legislation.
- ☞ **Article 39(f):** The children are given opportunities and facilities to develop in

a healthy manner and in conditions of freedom and dignity and that childhood and youth are protected against exploitation and against moral and material abandonment.

- ❖ **Article 43(a):** To secure the participation of workers in the management of undertakings engaged in any industry.
- ❖ **Article 48(a):** To protect the environment and to safeguard the forest and wildlife of the country.

**Directive Principle Added after 44th Amendment, 1978**

- ❖ **Article 38 (1):** The State shall, in particular, strive to minimise the inequalities in income and endeavor to eliminate inequalities in status, facilities and opportunities not only amongst individuals but also amongst groups of people residing in different areas or engaged in different vocations.

**Directive Principles Mentioned in Other Parts**

- ❖ **Article 350(a) :** It is the duty of the officers of concerned states to provide primary education in mother tongue to the people of minorities particularly to the children of minorities' class.
- ❖ **Article 351:** It will be the duty of the Union to spread Hindi language amongst the people of India which will develop our cultural and social element.
- ❖ **Article 355 :** It will be under consideration to appoint the people of the Scheduled Caste the Scheduled Tribes in and as Union or State services.

### **FUNDAMENTAL DUTIES**

- Added by 42nd amendment in 1976 on the basis of Swami Singh Committee report.
- There are eleven Fundamental Duties which are contained in Article 51A
- It shall be the duty of every citizen of India:
  1. To abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem;
  2. To cherish and follow the noble ideals which inspired our national struggle for freedom;
  3. To uphold and protect the sovereignty, unity and integrity of India;
  4. To defend the country and render national service when called upon to do so;
  5. To promote harmony and the spirit of

common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities; to renounce practices derogatory to the dignity of women;

- 6. To value and preserve the rich heritage of our composite culture;
- 7. To protect and improve the national environment including forests, lakes, rivers, and wild life and to have compassion for living creatures;
- 8. To develop scientific temper, humanism and the spirit of inquiry and reform;
- 9. To safeguard public property and to abjure violence;
- 10. To strive towards excellence in all spheres of individual and collective activity so that the nation constantly rises to the higher levels of endeavor and achievement.
- 11. It shall be duty of every citizen of India who is a parent or guardian to provide opportunities for education to his child or as the case may be, ward between the age of 6 and 14 years. (Added by 86th Amendment, 2002).

- The addition of Fundamental Duties along with the exceptions to the Fundamental Rights limits the operation and the free enjoyment of Fundamental Rights.

### **THE UNION AND ITS TERRITORY**

- Article 1 of the Constitution says, "India, that is Bharat, shall be a Union of States". The word 'Union' was preferred to 'Federation' because of certain advantages. Union of States means that the Union of India is not a result of an agreement by the States to join in a Federation not being the result of an agreement, no state has the right to get separated from it.
- The Union Territories are not included in the "Union of States", whereas the expression "Territory of India" includes not only the States, but also the Union Territories and such other territories as may be acquired by India.

### **RE-ORGANIZATION OF STATES**

- After independence, the demand for the reorganization of the States on the linguistic basis was raised from different regions. The Constituent Assembly appointed the S.K. Dhar Commission in 1947 to study the issue.
- The Dhar Commission recommended linguistic basis but it was rejected by the

Congress.

- But Congress had to concede to the demand after violence started in the Telegu speaking areas.
  - The State Re-organization Commission was set-up under Fazal Ali to make exhaustive study. The other members of the Commission were Hridaynath Kunzru and K.M. Panikkar.
  - On the Commission's recommendations the States were started to be reorganized on linguistic basis. Andhra Pradesh was the first State to be reorganized on such basis.
- Formation of New States and Alteration of areas, boundaries or names of Existing States**
- Under Article 3, the Constitution empowers the Parliament to form a new State by separation of territory from any State or by uniting two or more States or parts of States or by uniting any territory to a part of any State.
  - The Constitution further states that Parliament has the power to increase or diminish the area of any State or to alter the boundaries or names of any State.

#### **THE NEW STATES CREATED AFTER 1950**

<b>Andhra Pradesh</b>	<ul style="list-style-type: none"> <li>• Created by the State of Andhra Pradesh Act, 1953 by covering out some areas from the State of Madras</li> </ul>
<b>Gujarat and Maharashtra</b>	<ul style="list-style-type: none"> <li>• The State of Bombay was divided into two States, i.e., Maharashtra and Gujarat by the Bombay (Reorganisation) Act, 1960</li> </ul>
<b>Kerala</b>	<ul style="list-style-type: none"> <li>• Created by the State Reorganisation Act, 1956. It comprised Travancor and Cochin areas.</li> </ul>
<b>Karnataka</b>	<ul style="list-style-type: none"> <li>• Created from the Princely State of Mysore by the State Reorganization Act, 1956. It was renamed Karnataka in 1973.</li> </ul>
<b>Nagaland</b>	<ul style="list-style-type: none"> <li>• It was carved out from the State of Assam by the State of Nagaland Act, 1962</li> </ul>
<b>Haryana</b>	<ul style="list-style-type: none"> <li>• It was carved out from the State of Punjab by the Punjab (Reorganisation) Act, 1966.</li> </ul>
<b>Himachal Pradesh</b>	<ul style="list-style-type: none"> <li>• The Union Territory of Himachal Pradesh was elevated to the status of State by the State of Himachal Pradesh Act, 1970.</li> </ul>
<b>Meghalaya</b>	<ul style="list-style-type: none"> <li>• First carved out as a sub-State within the State of Assam by 23rd Constitutional Amendment, 1969. Later, in 1971, it received the status of a full-fledged State by the North-Eastern Areas (Reorganisation) Act, 1971.</li> </ul>
<b>Manipur and Tripura</b>	<ul style="list-style-type: none"> <li>• Both these States were elevated from the status of Union Territories by the North-Eastern Areas (Reorganisation) Act, 1971.</li> </ul>
<b>Sikkim</b>	<ul style="list-style-type: none"> <li>• Sikkim was first given the Status of Associate State by the 35th Constitutional Amendment Act, 1974. It got the status of a full State in 1975 by the 36th Amendment Act, 1975.</li> </ul>
<b>Mizoram</b>	<ul style="list-style-type: none"> <li>• It was elevated to the status of a full State by the State of Mizoram Act, 1986.</li> </ul>
<b>Arunachal Pradesh</b>	<ul style="list-style-type: none"> <li>• It received the status of a full State by the State of Arunachal Pradesh Act, 1986.</li> </ul>
<b>Goa</b>	<ul style="list-style-type: none"> <li>• Goa was separated from the Union Territory of Goa, Daman and Diu and was made a full-fledged State by the Goa, Daman, and Diu Reorganisation Act, 1987. But Daman and Diu remained as Union Territory.</li> </ul>
<b>Chhattisgarh</b>	<ul style="list-style-type: none"> <li>• Formed by the Constitutional Amendment Act, 2000 by dividing Madhya Pradesh on November 1, 2000.</li> </ul>
<b>Uttarakhand</b>	<ul style="list-style-type: none"> <li>• Formed by the Constitutional Amendment Act, 2000 by dividing Uttar Pradesh on November 9, 2000.</li> </ul>
<b>Jharkhand</b>	<ul style="list-style-type: none"> <li>• Formed by the Constitutional Amendment Act, 2000 by</li> </ul>

	<p>dividing Bihar on November 15, 2000</p> <p><b>Telangana</b></p> <ul style="list-style-type: none"> <li>• Formed by the Andhra Pradesh Reorganisation Act, 2014 by dividing Andhra Pradesh on June 2, 2014</li> </ul>	<p>4. <i>Cultural and educational rights conferred by Articles 29 and 30.</i></p> <ul style="list-style-type: none"> <li>• Again, citizens alone have the right to hold certain high offices such as those of the President, Vice-President, Governor of a State, Judge of Supreme Court and High Courts, Attorney General, etc. the right to vote to elect a member of the Lok Sabha and a Vidhan Sabha and the right to become a Member of the Parliament and a State Legislature and reserved for citizens only.</li> </ul>
• The procedure followed is :	<ul style="list-style-type: none"> <li>◆ A Bill giving effect to any or all the changes stated above can be introduced in either house of the Parliament, only on the recommendation of the President.</li> <li>◆ If such a Bill affects the boundary or name of the State, then the President, before introducing it in the Parliament, shall refer the Bill to the State Legislature concerned for its opinion, fixing a time limit within which an opinion may be expressed by the State Legislature. The President may extend the time limit so specified.</li> <li>◆ If the State Legislature fails to express an opinion within the stipulated time limit then it is deemed that it has expressed its views. If it submits its views within the period so specified or extended, the Parliament is not bound to accept or act upon the views of the State Legislature. Further, it is not necessary to make fresh reference to the State Legislature every time an amendment to the Bill is proposed and accepted.</li> <li>◆ The Bill is passed with simple majority.</li> <li>◆ However, in the case of Union Territories, it is not necessary to obtain the views of legislatures of Union Territories before a Bill affecting their boundaries or names is introduced.</li> </ul>	
	<h2>Citizenship</h2> <ul style="list-style-type: none"> <li>• A citizen is a person who enjoys full membership of the community in which he lives.</li> <li>• <u>Single Citizenship : No State Citizenship.</u></li> <li>❖ <i>Citizens are different from aliens who do not enjoy the following Fundamental Rights:</i> <ol style="list-style-type: none"> <li>1. <i>The right not to be discriminated against on grounds of religion, race, caste, sex or place of birth (Article 15)</i></li> <li>2. <i>The right to equality of opportunity in the matter of public employment (Article 16).</i></li> <li>3. <i>The right to six freedoms in Article 19, i.e., freedom of speech and expression, assembly, association, movement, residence and profession.</i></li> </ol> </li> </ul>	
		<p><b>CITIZENSHIP AT THE COMMENCEMENT OF THE CONSTITUTION</b></p> <ol style="list-style-type: none"> <li>1. Every person who has domicile in the territory of India and : <ul style="list-style-type: none"> <li>(a) Who was born in the territory of India; or</li> <li>(b) Either of whose parents was born in the territory of India; or</li> <li>(c) Who has been ordinarily residing in the territory of India for not less than five years immediately preceding such commencement; shall be a citizen of India.</li> </ul> </li> <li>2. Persons who migrated to India from Pakistan before 19th July, 1948 and since then have been ordinarily residing in India.</li> <li>3. Persons who migrated to India from Pakistan on or after 19th July, 1948 but got themselves, duly registered as citizens with a competent officer appointed for that purpose.</li> <li>4. Persons who migrated to Pakistan after 1st March but returned to India under a permit for resettlement.</li> <li>5. Any person who or either of whose parents or any of whose grandparents was born in India.</li> <li>• However, no person will be deemed to be a citizen, if he voluntarily acquires the citizenship of a foreign State.</li> </ol> <p><b>CITIZENSHIP ACT, 1955 AS AMENDED BY CITIZENSHIP (AMENDMENT) ACT, 1986</b></p> <ul style="list-style-type: none"> <li>• The Act provides for the acquisition of Indian Citizenship after the commencement of the Constitution in five ways, i.e., Birth, Descent, Registration, Naturalization and Incorporation of territory.</li> <li>1. <i>Citizenship by Birth</i> : Every person born</li> </ul>

in India on or after 26th January, 1950 shall be a citizen of India by birth provided either or both of his parents are citizens of India at the time of his birth. However, such a person shall not be a citizen of India, if at the time of his birth: (i) his father is a foreign diplomat; or (ii) his father is an enemy alien.

2. *Citizenship by Descent*: A person born outside India on or after 26th January, 1950 shall be a citizen of India by descent, if his father is a citizen of India at the time of that person's birth.
3. *Citizenship by Registration*: Any person who is not a citizen and belongs to any of the following categories, can apply for registration as a citizen. However, he must have resided in India for atleast five years immediately before making an application for registration as a citizen. These are :
  - (a) Persons of Indian origin who are ordinarily resident in India for five immediately before making an application for registration;
  - (b) Persons of Indian origin who are ordinarily resident in any country or place outside India;
  - (c) Women who are married to citizens of India;
  - (d) Minor children of persons who are citizens of India; and
  - (e) Persons of full age and capacity who are citizens of a country mentioned the first schedule of the Act.
4. *Citizenship by Naturalization*: A foreigner, on application for naturalization to a ; competent authority appointed by the State, can acquire Indian citizenship provided he satisfies certain conditions like having normally resided for atleast ten years in India immediately before making an application.
5. *Citizenship by Incorporation of Territory*: If any new territory becomes a part of India, the Government of India shall notify the persons of that territory to be citizens of India.

### **LOSS OF INDIAN CITIZENSHIP UNDER THE ACT**

- The Citizenship Act, 1955 also lays down the three modes by which an Indian citizen whether a citizen at the commencement of the Constitution or subsequent to it, may lose his citizenship. These are renunciation, termination and deprivation.
  1. *Renunciation* is a voluntary act by which a person after acquiring the citizenship of another country gives up his Indian citizenship.
  2. *Termination* takes place by operation of law. When the Indian citizen voluntarily acquires the citizenship of another country, he automatically ceases to be an Indian citizen.
  3. *Deprivation* is a compulsory termination of the citizenship of India registration or naturalization. The citizenship is deprived on the basis : of the Government of India, in cases involving acquisition of Indian citizenship by fraud, false representation, and concealment of material fact or being disloyal to the Constitution.

### **CITIZENSHIP AMENDMENT ACT, 1992**

- According to this Amendment Bill, the child who is born outside India and if his mother belongs to India, can have the Indian citizenship.
- Before this Act, any child born outside India could acquire citizenship only: was a citizen of India.

### **OVERSEAS CITIZEN OF INDIA STATUS**

- Parliament has passed the Citizenship (Amendment) Act, which says that all the people of Indian origin in various countries, except in Pakistan and Bangladesh, whose parents/grand parents migrated from India after 26 Jan, 1950 or were eligible to become Indian citizens on 26 Jan, 1950 or belonged to a territory that became part of India after 15 Aug, 1947, will become eligible to be registered as the Overseas Citizens of India (OCI). All legal steps in this direction have been completed.

**Entitled**

- OCIs are entitled to multiple-entry, multi-purpose, life-long visas with no requirement of registration with police.
- They can live and work in India or in the country of their naturalization.  
They are eligible to work in the private sector.
- OCIs enjoy parity with NRIs in respect of economic, financial and educational fields except in relation to acquisition of agricultural or plantation property.

**Not entitled**

- They are not entitled to hold constitutional

posts and employment with the government.

- They cannot vote.

**Note :**

- *A proposal to grant voting rights to Indian citizens who are not ordinarily residing in India on account of employment; education or otherwise has been approved by the government. This will meet a long standing demand of Indian workers in the Gulf who take up employment there on a contract basis and cannot be naturalized in the country they work. The facility will be granted after Parliament approves the necessary amendments to the Representation of the People Act.*



## **Semester - III**

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# INDIAN HISTORY

## At a Glance

### ANCIENT INDIA

#### The Early Man

- The fossils of the early human being have been found in Africa about 2.6 million years ago, but there are no such evidence in India. So, it appears that India was inhabited later than Africa.
- The recent reported artefacts from **Bori** in Maharashtra suggest that the appearance of human beings in India, was around 1.4 million years ago.
- The evolution of the Earth's crust shows four stages. The fourth stage is divided into **Pleistocene** (most recent) and **Holocene** (present).
- Man is said to have appeared on the Earth in the early Pleistocene.
- The early man in India used tools of stone roughly dressed by crude clipping. This period is therefore, known as the **Stone Age**, which has been divided into
  - ✓ The Palaeolithic or Old Stone Age
  - ✓ The Mesolithic or Middle Stone Age
  - ✓ The Neolithic or New Stone Age

#### **The Palaeolithic Age (500000 BC-9000 BC)**

- The Palaeolithic culture of India was developed in the pleistocene period or the ice age.
- It seems that Palaeolithic men belonged to the Negrito race. **Homo Sapiens** first appeared towards the end of this phase.
- Palaeolithic men were hunters and food gatherers. They had no knowledge of agriculture, fire or pottery, they used tools of unpolished, rough stones and lived in cave rock shelters. They are also called **Quartzite men**.
- This age is divided into three phases according to the nature of the stone tools used by the people and change in the climate.
  - ✓ Early or Lower Palaeolithic
  - ✓ Middle Palaeolithic
  - ✓ Upper Palaeolithic

#### **Phases of the Palaeolithic Age**

Age	Tools	Climate	Sites
Early	Hand axes, cleavers and choppers	Humidity decreased	Soan valley (Punjab)
Middle	Flakes-blades, points, borers and scrapers	Further decrease in humidity	Valleys of Soan, Narmada and Tungabhadra rivers.
Upper	Scrapers and burin	Warm climate	Caves and rockshelters of this age have been discovered at Bhimbetka near Bhopal.

#### **The Mesolithic Age (9000 BC- 4000 BC)**

- It intervened as a transitional phase between the **Palaeolithic Age** and the **Neolithic Age**.
- In this age, climate became warm and dry, which brought about changes in fauna and flora and made it possible for human mankind to move to new areas.
- The Mesolithic people lived on hunting, fishing and food-gathering. At a later stage, they also domesticated animals.
- The characteristic tools of the Mesolithic Age are microliths, pointed crescentic blades, scrapers, etc made up of stones.
- **Adamgarh** in Madhya Pradesh and **Bagor** in Rajasthan provide the earliest evidence for the domestication of animals.
- The people of Palaeolithic and Mesolithic ages practiced painting. **Bhimbetka** in Madhya Pradesh is a striking site of **Pre-historic painting** of Mesolithic age.

#### **The Neolithic Age (4000 BC-1800 BC)**

- The people of this age are characterised by the use of polished stone tools. They particularly used stone axes.
- It is interesting that in **Burzahom** dogs were buried with their masters in their graves.
- The Neolithic settlers were the earliest farming communities. They produced ragi and horse-gram (*kulathi*). Neolithic sites in Allahabad district is noted for the cultivation of rice in the sixth millennium BC. They domesticated

cattle, sheep and goats. They wove cotton and wool to make clothes.

- Hand made pottery and use of potter's wheel first appeared during the Neolithic age.
- Neolithic men lived in caves and decorated their walls with hunting and dancing scenes. They knew the art of making boats. In the later phase, people lived a more settled life and used to live in circular and rectangular houses made of mud and reed.
- Koldihwa in UP revealed a three fold cultural sequence: Neolithic, Chalcolithic and iron age. **Mehargarh** in **Baluchistan** is the oldest Neolithic site in India (7000 BC).
- Important sites include Chhotanagpur region, Central India and South of the Krishna river. **Belan valley** of Vindhays and middle part of the Narmada valley shows all the three phases of Stone age.

### Chalcolithic Culture (1800 BC-1000 BC)

- The end of the Neolithic period saw the use of metals. Copper was the first metal to be used.
- Chalcolithic culture refers to the stone-copper phase. People also used hand-axes and other objects made up of copper ware.
- Chalcolithic people were primarily rural communities. They domesticated animals and practised agriculture. They were not acquainted with burnt bricks and lived in thatched houses. They venerated the mother Goddess and worshipped the bull.
- The people of Chalcolithic culture were the first to use *painted pottery*. Black and red pottery painted with white line design was most popular.
- The **Malwa ware** is considered the richest among the Chalcolithic ceramics.
- Important sites of this phase are spread in Rajasthan, Maharashtra, West Bengal, Bihar, Madhya Pradesh etc.

## Indus Valley Civilization

- Indus civilisation is one of the four earliest civilisations of the world along with the civilisations of Mesopotamia (Tigris and Euphrates), Egypt (Nile) and China (Hwang Ho).
- The civilisation forms part of the proto-history of India and belongs to the **Bronze age**.
- The most accepted period is 2300-1750

BC (by Carbon-14 dating).

*It can be divided into following sub-parts*

- ✓ Early Phase 2900-2500 BC
- ✓ Middle (mature) Phase 2500-2000 BC
- ✓ Later Phase 2000-1750 BC

- **Dayaram Sahni** first discovered Harappa in 1921.

- **R.D Banerjee** discovered Mohenjodaro or **Mound of the Dead** in 1922.

### Nomenclature of the Indus Valley Civilisation

→ **Indus Valley Civilisation** as it flourished at the bank of river Indus, John Marshall coined the name as Indus Valley Civilization in 1924.

→ **Harappan Civilisation** after independence Archaeological Survey of India and Pakistan discovered many sites far away from Indus Valley. So, by the name of first discovered sites it was renamed as Harappan civilization.

→ **Saraswati-Sindhu Civilisation** as most of the sites have been found at the Hakra-Ghaggar river.

### Geographical Spread

→ The civilisation covered parts of Sindh, Baluchistan, Afghanistan, West Punjab, Gujarat, Uttar Pradesh, Haryana, Rajasthan, Jammu and Kashmir, Punjab and Maharashtra.

→ **Mundigak** and **Shortughai** are the two sites located in Afghanistan.

→ **West**-Sutkagendor on Makran coast (Pak-Iran Border).

→ **East**-Alamgirpur in Uttar Pradesh (River Hindon).

→ **North**-Manda in Jammu (River Chenab).

→ **South**-Daimabad in Maharashtra (River Pravara) are major sites.

### Town Planning

→ It was not uniform. A unique feature was the grid system i.e. streets cutting across one another at right angles, dividing the town into large rectangular blocks.

### Indus Cities At a Glance

City	Province	River Bank	Year of Discovery	Archaeologist(s)
Harappa	Pakistani Punjab	Ravi	1921	Daya Ram Sahni
Mohenjodaro	Sindh	Indus	1922	R.D Banerjee
Sutkagendor	Baluchistan	Dasht	1931	Aurel Stein
Rangpur	Gujarat	Meedar	1931	M.S Vats
Chanhudaro	Sindh	Indus	1931	M.G Majumdar
Ropar	Indian Punjab	Sutlej	1953	Y.D Sharma
Lothal	Gujarat	Bhogava Sabarmati	1957	S.R Rao
Kalibangan	Rajasthan	Ghaggar	1959	B.B Lal
Alamgirpur	Uttar Pradesh	Hindon	1974	Y.D Sharma

→ The towns were divided into two parts: upper part or citadel and lower part.

→ The fortified **citadel** is further divided into two parts. Eastern side consists of residential buildings and Western

- side was used for economic activities.
- Below the citadel on the Eastern side, lay the **lower town** inhabited by the common people.
- **Underground Drainage System** connected all houses to the street drains made of mortar, lime and gypsum. They were covered with either brick or stone slabs and equipped with its 'Manhole'. This shows developed sense of health and sanitation.
- **The Great Bath** (Mohenjodaro) was used for religious bathing. Steps at either end led to the surface. There were changing rooms alongside.
- **The Granaries** (Harappa) six granaries in each of the two rows were found in the citadel at Harappa.
- Houses were made up of *burnt bricks*. They were often two or more storeyed, varied in size, with a square courtyard around, which had a number of rooms. Windows did not face the main streets. They had tiled bathrooms.
- **Lamp-posts** were erected at regular intervals. It indicates the existence of street lighting.

### Agriculture

- It was the backbone of the civilisation. The soil was fertile due to inundation of the river Indus and floods.
- The Indus people sowed seeds in the flood plains in November, when the flood water receded and reaped their harvests of wheat and barley in April, before the advent of next flood.
- They used wooden plough share (ploughed field from Kalibangan) and stone sickles for harvesting.
- *Gabarhands* or *nala*s enclosed by dam for storing water was a feature in parts of Baluchistan. Grains were stored in granaries.
- **Crops Produced** wheat, barley, dates, peas, sesamum, mustard, millet, ragi, bajra and jowar. At Lothal and Rangpur, rice husks were found.
- **They were the First to Produce Cotton** in the world, which Greek called as *Sindon* derived from Sindh. A fragment of woven cotton cloth was

found at Mohenjodaro.

- Well irrigation is evident from Alladinho, dams and irrigation canals from Dholavira. Sugarcane was not known to Indus people.

### Domestication of Animals

- Animal rearing was practiced which is evident from the discovery of the Humped Bull.
- They domesticated buffaloes, oxen, sheep, asses, goats, pigs, elephants, dogs, cats etc.
- Camel bones are reported at Kalibangan and remains of horse from Surkotada.

### Trade

- Agriculture, industry and forest produce provided the basis for internal and external trade.
- Trade was based on **barter system**. Coins were not evident and bullock carts, pack animals and boats were used for transportation.
- Weights and measures were made of limestone, steatite etc. generally in cubical shape. They were in multiple of sixteen.
- Several sticks inscribed with measure marks were discovered. It points that linear system of measurement was in use.
- Foreign trade flourished with Mesopotamia or Sumeria (Iraq), Central Asia, Persia, Afghanistan and Bahrain.
- Sumerian text refers to trade with Meluha (Indus). Dilmun (Bahrain) and Makran (Makran coast) were two intermediate stations.
- Lothal (artificial dockyard), Surkotada, Sutkagendor, Prabhas, Bhatrao, Kalibangan, Dholavira, Daimabad were **coastal towns** of the civilisation.

#### **Towns Associated with Different Industries**

- ❖ **Daimabad:** Bronze industry.
- ❖ **Lothal:** Factory for stone tools and metallic finished goods.
- ❖ **Balakot:** Pearl finished goods, bangle and shell industry.
- ❖ **Chanhudaro:** Beads and bangles factory. It was the only city without a citadel.

- Major Exports were agricultural products, cotton goods, terracotta figurines, pottery, steatite beads (from Chanhudaro), Conch-shell (from Lothal), ivory products, copper etc.

### **Major Imports**

<b>Imports</b>	<b>From</b>
Gold	Kolar (Karnataka), Afghanistan, Persia (Iran)
Sliver	Afghanistan, Persia (Iran), South India
Copper	Khetri (Rajasthan), Baluchistan, Arabia
Tin	Afghanistan
Lapis Lazuli and Sapphire	Badakhshan (Afghanistan)
Jade	Central Asia
Steatite	Shaher-i-Sokhta, Kirthar hills
Turquoise	Iran
Amethyst	Maharashtra

### **Art and Craft**

- Harappans used stone tools and were well acquainted with bronze. Bronze was made by mixing copper (from Khetri) with tin.
- **Bead Making** and jewellery of gold, silver precious stone were made. Cotton fabrics were used in summers and woollen in winters.
- Both men and women were very fond of ornaments and dressing up.
- **Pottery** both plain (red) or painted (red and black) pottery was made. Pots were decorated with human figures, plants, animals and geometrical patterns and *ochre* was painted over it.
- **Seals** were made of steatite. Pictures of one horned bull, buffalo, tiger, rhinoceros, goat and elephant are found on the seals. They marked ownership of property.
- **Mesopotamian** seals were found from Mohenjodaro and Kalibangan; Persian seal was obtained from Lothal. Most important one is the **Pashupati seal**.
- **Metal Images** : Bronze image of a nude woman dancer (identified as *devadasi*) and stone steatite image of a bearded man (both are obtained from Mohenjodaro).
- **Terracotta Figurines**: The fire baked clay was used to make toys, objects of worship, animals (monkey, dogs, sheep, cattle, humped and humpless bulls), cattle toys with movable head, toy-carts, whistle shaped like birds and both male and female figurines.

- They played dice games. Gambling was their favourite time pass. No clear evidence of music.

### **Religious Practices**

- **Chief Female Diety**: A terracotta figure where a plant is shown growing out of the embryo of a woman, represents Mother Goddess (Goddess of Earth).
- **Chief Male Diety**: Pashupati Mahadeva (Proto-Shiva), represented in seals as sitting in a yogic posture on a low throne and is having three faces and two horns. He is surrounded by an elephant, a tiger, a rhino and a buffalo and two deers appear at his feet.
- *Lingam* and *yoni* worship was prevalent. Trees (pipal), animals (bull, birds, dove, pigeon) unicorn and stones were worshipped. No temples have been found, though idolatory was practiced.
- Indus people believed in ghosts and evil forces and used amulets for protection against them. Fire altars are found at Lothal and Kalibangan.
- Evidence of snake worship is also found.

### **Burial Practices**

- General practice was placing the dead body in the North-South-direction.
- **Mohenjodaro** : Three forms of burials were Complete, Fractional and Post Cremation,
- **Kalibangan** : Two forms of burial- Circular and Rectangular Grave.
- **Surkotada**: Pot-burial, Dholavira Megalithic burial.
- **Lothal** : Double burial.
- **Harappa** : East-West axis; R-37 and H cemetery.

### **Script**

- It was pictographic in nature. Fish symbol is most represented.
- Overlapping of the letters show that it was written from right to left in the first line and then left to right in the second line. This style is called *Boustrophedon*.

## **Decline of the Civilization**

The Harappan culture flourished about till 1800 BC, then it began to decline. There is no unanimity among historians, regarding the exact reason for the decline of this urban civilisation. There are many different theories that show the decline of the Indus culture.

### Decline of Indus Civilisation (Different Views)

Views	Thinkers
External Aggression	Wheeler, Piggott and Gordon-Childe
Inundation	MR. Sahani
Epidemic	KVR Kennedy
Tectonic Disturbances (e.g. Dholavira)	Marshall and Raikes
Sudden decline	Wheeler
Climatic change	R.L Stein and A.N Ghosh
Deforestation, Scarcity of resources, Ecological Imbalances	Fairervis
Flood (e.g. Mohenjodaro)	Marshall, S.R Rao, Maickey
The Destruction due to change in course of River Ghaggar	GF Holes

### Important Harappan Sites

City	Archaeological Finds
<b>Harappa</b> (Gatewacity)	Two rows of six granaries with brick platform, work men's quarter, stone symbol of <i>lingam</i> and <i>yoni</i> , Virgin-Goddess, clay figures of Mother Goddess, wheat and barley in wooden mortar, copper scale and mirror, vanity box, dice. <b>Sculpture</b> Dog chasing a deer (bronzes), nude male and nude dancing female (stone), red sandstone male torso.
<b>Mohenjodaro</b> (Mound of the Dead)	The great bath, The great granary (largest building), multi-pillared assembly hall, college, proto-Shiva seal, clay figures of Mother Goddess, Dice. <b>Sculpture</b> Bronze dancing girl, steatite image of bearded man.
<b>Kalibangan</b> (Black Bangles)	Decorated bricks, bangle factory, wheels of a toy cart, wells in every house. Remains of a massive brick wall around both the citadel and lower town (lower town of Lothal is also fortified), bones of camel, tiled floor. Mother Goddess figurines are absent here.
<b>Chanhudaro</b> (Lancashire of India)	Inkpot, lipstick, carts with seated driver, <i>ikkas</i> of bronze, imprint of dog's paw on a brick. Only city without citadel.
<b>Daimabad</b>	Bronze images of charioteer with chariot, ox, elephants and rhinoceros.
<b>Amri</b>	Actual remains of rhinoceros.
<b>Alamgirpur</b>	Impression of cloth on a trough.
<b>Lothal</b> (Mnchester of Indus Valley Civilisation)	Rice husk, fire altars, grinding machine, tusks of elephant, terracotta figure of horse and seal, dying vat, painted jar (bird and fox), teracotta ship, houses with entrance on main streets, impressions of cloth on some seals, modern day chess, instrument for measuring 180, 90 and 45 degree angles.
<b>Ropar</b>	Buildings made of stone and soil. Dog buried with humans. One inscribed steatite seal with typical Indus pictographs; oval pit burials.
<b>Banawali</b>	Oval shaped settlement, only city with radial streets, lack of systematic drainage pattern. Toy plough, largest number of barley grains.
<b>Surkotada</b>	Both citadel and lower town fortified with stone wall. First actual remains of horse bones. Cemetery with four pot burials.
<b>Dholavira</b>	Only site to be divided into three parts. Giant water reservoir, unique water harnessing system, dams and embankments, a stadium, rock-cut architecture.
<b>Sutkagendor</b>	Two-fold division of township Citadel and Lower Town.

## The Aryan and the Vedic Age

### Original Home and Identity

- The word *Aryan* literally means of high birth. *Veda* means *mantra* and *slokas* and also knowledge and conscience.
- The location of the original homeland

of the Aryans is still controversial, but the most accepted theory is that they migrated from Central Asia in several groups between 2000-1500 BC and settled in Eastern Afghanistan, modern Pakistan, Punjab and Western UP .

- This region is popularly known as the land of seven rivers or '*Sapta Sindva*' (the Indus, its five tributaries Vitasta, Askini, Vipasha, Parushni, Sutudri and the Saraswati).

**Note:** The Central Asian theory is also ' proved by the Boghazkai Inscription (Turkey), which mentions four Vedic Gods : *Indra*, *Varuna*, *Mitra* and *Nasatya*.

### Rigvedic or Early Vedic Period (1500-1000 BC)

- Early Vedic people had knowledge of rivers Yamuna, Saraswati, (Nanditara) and Ganga Ocean was mentioned as Samudra (referred to collection of water and not sea) snow mountains (Himvat) and desert land (Dhawa). So, they lived in *Sapta Sindva* region.

### Rivers Mentioned in the Rig Veda

Rigvedic name	Modern name
Sindhu	Indus
Vitasta	Jhelum
Askini	Chenab
Parushni	Ravi
Vipasha	Beas
Shutudri	Sutlej
Gomati	Gumal
Krumu	Kurram
Ghaggar Drishadvati	Ghaggar
Suvasthu	Swat
Kubha	Kabul
Nandi tara	Saraswati
Sadanira	Gandak
Gumal	Gomati

- Aryans came into conflict with the indigenous inhabitants called **Dasas** (early branch of Aryans) and **Dasyus** (Original inhabitants). **Dasyuhatya** or slaughter of *Dasyus* is repeatedly mentioned in the *Rig Veda*.

### The Dasarajana War

- ❖ This battle was fought on the bank of the Parushni river (Ravi), **Sudas**, the son of Divodas and the Bharata king of Tritsu family won over an alliance of ten tribes (Five Aryans and Five non-Aryans).
- ❖ The battle broke out due to a dispute between **Vashistha** (priest of Bharatas) and **Visvamitra** (priest of alliance).

### Economy

- Aryans followed a mixed economy

consisting of both agriculture and pastoralism.

- They possessed better knowledge in agriculture. Ploughshare is mentioned in Rig Veda. It was made up of wood and was drawn by the ox. They were acquainted with sowing, harvesting, threshing and knew about different seasons.
- The reference of cow in the *Rig Veda* shows that *Rigvedic Aryans* were predominantly pastoral people. The term for war in the *Rig Veda* is *Gavishthi* or search for cows. The horse was almost as important as cow.
- **Cow** was the standard unit of exchange. Gold coins like *Nishka*, *Krishna* and *Satmana* were also in use. *Godhuli* was used as a measure of time and *Gavyuti* as a measure of distance.

### **Polity**

- The election of the king was by the tribal assembly called **Samiti**.
- Several tribal or clan based assemblies existed such as the Sabha, Samiti, Vidatha and Gana.
- The **Samiti** was the National Assembly of the people, while the **Sabha** was Council of Elders.
- King was assisted by many functionaries. Most important functionary was the **Purohita**, the religious advisor of the king, followed by the Senani, the head of the army.
- The voluntary offerings to the chief by the people was called **Bali**.
- There was no regular or standing **army**. However, there were groups of infantry and charioteers.
- Weapons made of stone, wood, bone and metal were used.

### **Society**

- Kinship was the basis of society's structure. People gave their primary loyalty to the tribe, which was called **Jana**.
- An other term that stands for tribe in the *Rig Veda* is *Vis*.
- *Vis* was divided into *grama*. When *grama* clashed with one another, it caused the *Sangrama* or war.
- The term family (*Kula*) is rarely mentioned in the *Rig Veda*. Patriarchial family structure was prevalent.
- **Varna** was the term used for colour of people,

- **Caste:** four castes were there
  - ✓ **Brahmins:** (teachers and priests),
  - ✓ **Kshatriyas:** (rulers and administrators),
  - ✓ **Vaishyas** (merchants and bankers),
  - ✓ **Sudras** (artisans and labourers).

### **Rigvedic Gods**

- Rigvedic people believed in forces of nature worship and not in erecting temples or idol worship. They performed *Yajnas* in open areas.
- **Soma** was considered to be the God of plants and an intoxicating drink is named after him.
- The ninth *mandala* of the *Rig Veda* i.e. 'Soma Mandala' is attributed to Soma.
- Some female divinities such as **Aditi** and, **Usha**, represented the appearance of the dawn.

### **Types of Marriages**

*Eight types of marriages were in practice during the Vedic period :*

<b>Brahma</b>	<i>Marriage of a duly dowered girl to a man of the same class</i>
<b>Daiva</b>	<i>A daughter is given to a sacrificial priest, as a part of his fee</i>
<b>Arsa</b>	<i>A token bride-price of a cow is given in place of the dowry</i>
<b>Prajapatya</b>	<i>The father gives the girl without dowry and without demanding the bride-price</i>
<b>Gandharva</b>	<i>Love marriage</i>
<b>Asura</b>	<i>Bride was bought from her father.</i>
<b>Rakshasa</b>	<i>Marriage by capture</i>
<b>Paishacha</b>	<i>Marriage by seduction</i>

### **Important Rituals**

- **Rajasuya**—The king's influence was strengthened by rituals. The king performed this sacrifice, which was supposed to confer supreme power on him.
- **Asvamedha**—A king performed the Asvamedha, which meant unquestioned control over the area, in which the royal horse ran uninterrupted.
- **Vajapeya**—A king performed the Vajapeya or the chariot race, in which the royal chariot was made to win the race against his kinsmen.

## **Later Vedic Age (1000-600 BC)**

### **Painted Greyware Phase**

- Later Vedic texts refer to rivers Narmada, Sadanira etc. Vindhya mountain and territorial division of India into Aryavarta (Northern India), Madhyadesa (Central

India) and Dakshinapatha (Southern India). Aryans expanded from Punjab over the whole Western UP covered by Ganga-Yamuna Doab (Aryavarta).

- The expansion towards East is indicated in a legend of Satapatha Brahmana i.e. how Videha Madhava migrated from the Saraswati region, crossed Sadanira and came to the land of Videha (modern Tirhut).

### Polity

- Formation of large kingdoms; for all practical purposes, Kingship became hereditary. Assembly lost its importance and royal power increased at their cost. Vidhata totally disappeared. Women were no longer permitted to attend assemblies.
- The term **Rashtra** indicating territory, first appeared in this period.
- Taittariya Brahmana refers to the theory of divine origin of kingship.
- Satapatha Brahmana refers to Twelfth Ratninas or civil functionaries of the time.

### Twelve Ratninas (Shatapatha Brahmana)

↳ <i>Purohita</i>	<i>The Priest</i>
↳ <i>Mahishi</i>	<i>Chief Queen</i>
↳ <i>Yuvaraja</i>	<i>Crown Prince</i>
↳ <i>Suta/Sarathi</i>	<i>The Royal herald/the Charioteer</i>
↳ <i>Bhagadugha</i>	<i>Tax collector</i>
↳ <i>Akshavapa</i>	<i>Accountant</i>
↳ <i>Palagala</i>	<i>Friend of king</i>
↳ <i>Govikarta</i>	<i>Head of forest department</i>
↳ <i>Senani</i>	<i>The General</i>
↳ <i>Gramani</i>	<i>Head of the village</i>
↳ <i>Kshatri</i>	<i>Gateman/ Chamberlain</i>
↳ <i>Sangrahiti</i>	<i>Treasurer</i>

- There was development of judiciary. Kings administered the criminal court. Serious crimes were the killing of an embryo, homicide, the murder of a Brahmin, stealing of gold and drinking sura. Treason was a capital offence.

### Society

- The fourfold division of society became more clear. Initially based on occupation, it later became hereditary.
- **Brahmin**—The growing cult of sacrifice enormously added to the power of *Brahmins*.
- **Kshatriyas** They constituted the warrior class.
- **Vaisyas**—They were the agriculturalists, cattle rearers,

traders, artisans and metal workers.

- **Shudras**—Lowest in the social hierarchy and born to serve the upper three varna.
- The **Ashram system** was formed to attain four *purusharthas* (*Dharma, Artha, Kama* and *Moksha*). *Jabala Upanishada* gives the earliest reference to four ashramas i.e. the stages of life—*Brahmacharya, Grihastha, Vanaprastha* and *Sanyasa*.
- Position of women declined. *Aitareya Brahmana* states that daughter is the source of misery while a son is the protector of family. *Maitrayani Samhita* mention three evils—liquor, woman and dice Polygamy became frequent.
- However, some of the women had got higher education as indicated by the *Yajnavalkya-Gargi* dialogue in *Vrihadarnyaka Upanishada*.
- In this period, *pratiloma vivah* was not permitted.

### Economy

- Agriculture became the chief economic activity. Manure was wheat, rice, barley beans and seasmum.
- New occupational group emerged, such as fisherman, washerman, dyers, door keepers and footmen.
- Tin, silver and iron was now known to the people.
- Merchants were organised into Guilds, as indicated by the terms—*Gawas* (corporations) and *Sresthins* (eldermen).

### Religion

- Rituals became important in the cult of sacrifice.
- *Prajapati* became the supreme God. *Vishnu* was conceived as the preserver and protector of people.
- *Pushan* responsible for well being of cattle, became the **God of Shudras**.
- Towards the end of the Vedic age, a section of society began to resent the priestly domination.

#### 16 Sanskaras

- |                 |                  |
|-----------------|------------------|
| 1. Garbhadhana  | 9. Karnachhedana |
| 2. Pumsavana    | 10. Vidyarmbha   |
| 3. Simantonnyan | 11. Upanayana    |
| 4. Jatakarma    | 12. Vedarambha   |
| 5. Namakaran    | 13. Samavaratana |
| 6. Nishkramana  | 14. Vivaha       |
| 7. Annaprashana | 15. Vanaprastha  |
| 8. Chudakarma   | 16. Antyesti     |

### The Vedic Literature

- The word **Veda** comes from the word **Vid**, means to know or knowledge.
- Vedic texts are divided between **Sruti** (based on hearing) and **Smriti** (based on memory).

- Veda are divided into **Samhitas**.

### **Rig Veda**

- One of the oldest religious text in the world.
- Collection of hymns, composed around 1700 BC, contains 1028 hymns and is divided into 10 *mandalas*.
- II to VII are the earliest *mandalas*, each of which is ascribed at a particular family of Rishi Gritsamad, Visvamitra, Vamadeva, Atri, Bhardwaja, Vashistha. *VIII mandala* is ascribed to Kanvas and Angiras. *IX mandala* is the compilation of Soma hymns.
- The *Xth mandala* contains the famous *Purushasukta* hymn which explains that the four *varnas* were born from the mouth, arms, thighs and feet of the creator *Brahma*.
- The *IIIrd mandala* contains the **Gayatri Mantra**, which was compiled in the praise of Sun God Savitri.
- Saraswati is the deity river in the *Rig Veda*.

### **Sama Veda**

- *Sama Veda* derives its roots from 'saman' which means **melodies**. It is a collection of melodies. The hymns of the *Sama Veda* were recited by Udgatri at the *Soma* sacrifice.
- It contains *Dhrupad Raga*.

### **Yajur Veda**

- Deals with the procedures for the performance of sacrifices. The beliefs and rituals of non-Aryans are written in it.
- *Two text of Yajur Veda*
  - ✓ **Shukla** (White) *Yajur Veda*
  - ✓ **Krishna** (Black) *Yajur Veda*

### **Atharva Veda**

- It is a book of magical formulae. It contains charms and spells toward off evil art disease.

### **The Upanishads**

- The term *Upanishads* is the knowledge acquired by sitting close to the teacher (*Guru*).
- Also called *Vedarita*, because they denote the last phase of Vedic period.
- They are spiritual and philosophical in nature and they reveal the aim of *Vedas*. They define the doctrine of *Karma*, *Atman* (soul), *Brahma* (God), origin of universe.
- There are 108 *Upanishads* and the period of 800 BC to 500 BC is known as period of *Upanishadas*. 11 are predominant and they are called *mukhya Upanishadas*.

### **Brahmanas**

- These are the prose commentaries on

various vedic hymns. They explain the *Vedas* in an orthodox way. They explain the hidden meaning behind the hymns. They are ritualistic by nature.

- The most important is the '*Shatapatha Brahmana*' attached to the *Yajur Veda*. It recommends one hundred sacred paths.

### **The Aranyakas**

- The sages dwelling in the forests explained the Vedic scriptures to their pupils in the form of *Aranyakas*. These have magical power and they form the concluding part of *Brahmanas*. It provides details of the *rishis*, living in jungle.

### **Vedangas**

- They are the *limbs of the Vedas*. These are *treaties of Science and Arts*.
- *Shiksha* (deals with pronunciation) [phonetics].
- *Kalpa* (deals with rituals)
- *Vyakarana* (Grammar)
- *Nirukta* (Etymology)
- *Chhanda* (Metrics)
- *Jyotisha* (Astronomy)
- Panini wrote *Ashtadhyayi* (4th century BC on *Vyakarana*.)

### **Upavedas**

*There are four Upavedas—*

- **Dhanurveda** (*Upaveda of Yajur Veda*) : Deals with art of warfare.
- **Gandharvaveda** (*Upaveda of Sama Veda*) : Deals with art and music.
- **Shilpaveda**: Deals with architecture (associated with *Atharva Veda*)
- **Ayur Veda** (*Upaveda of Rig Veda*) : Deals with medicine.

### **Philosophy**

Six systems of Hindu philosophies, given by six philosophers of ancient India

- |                             |             |
|-----------------------------|-------------|
| ✓ <i>Nyaya</i> (analysis)   | — Gautama   |
| ✓ <i>Vaisesika</i>          | — Kannada   |
| ✓ <i>Sankhya</i>            | — Kapila    |
| ✓ <i>Yoga</i> (application) | — Patanjali |
| ✓ <i>Purva Mimansa</i>      | — Jaimini   |
| ✓ <i>Uttar Mimansa</i>      | — Vyasa     |

### **Puranas**

- These include mythology, cosmogony, various legends, folk beliefs, law codes and miscellaneous topics.
- It refers to the change in the mode of worship (from sacrifice to idol worship), and visual appeal of deities as against worship of ideas.

### **Sutras**

*Sutra literature is divided into three classes:*

- **Srauta Sutra** (dealing with large public sacrifices).
- **Griha Sutra** (dealing with rituals connected with birth, naming, marriage).

- **Dharma Sutra** (explain social and local customs).

#### Epic

- **Mahabharata**, written by Ved Vyas, is older than the 'Ramayana'. Originally, the *Mahabharata* consisted of 880 verses then it was raised to 24000 verses. The final compilation brought the number of verses to 100000.
- **Ramayana** written by Valmiki originally consisted of 6000 verses, which was raised to 12000 and finally 24000 verses.

#### Smritis

- **Dharma Shastra** is the other name for the Smritis, which are the law books written in *sloka* form.
- The important Smritis are *Manav Dharma Shastra*, *Vishnu Dharma Shastra*, *Yajnavalkya Smriti* and *Narada Smriti*.
- **Manav Dharma Shastra** or **Manusmriti** is the oldest and most famous. Manu is supposed to be the first king and law maker.
- Later on, some minor Smritis and commentaries like the **Mitakshara** were compiled.

## Pre-Mauryan Age

- The material advantages brought about by the use of the iron implements in Eastern UP and Bihar in 6th century BC helped in the formation of large territorial states.
- Use of iron tools in agriculture produced surplus, which could be taxed by the princes to finance their military and administrative needs.
- Thus, many *Janapadas* sprung up in the 6th century BC, the larger of which were called **Mahajanapadas**

#### The Mahajanapadas

- The Anguttara Nikaya of Suttapitaka, Mahavastu (Buddhist literature) and Bhagawati Sutta (Jain literature) mentions the list of 16 Mahajanapadas.

*They were of two types—*

- **Non-Monarchical/Republican States** Kamboj, Kuru, Koliyas (Ramgrama), Malla, Moriya (Pipplivana), Shakya (Kapilavastu), Vajji (Panchal), Lichchhavis (Vaishali), Bhaggas (Sumsumasa), Kalamas (Kesaputta), Videhas (Mithila), Jnatrikas (kundalgrama).
- **Monarchical States** Anga, Avanti, Chedi, Kashi, Kosala, Gandhara, Magadh, Matsya, Sursena, Vatsa.
- People now owned stronger allegiance

to the Janapada or territory than the jana or tribe they belonged to.

- **Asmaka** was the Southernmost Mahajanapada.
- **Vatsa** was earlier a Kuru clan.
- **Vajji** was confederacy of eight republican clans

## The Republican States

- The republics, unlike the monarchies were ruled by tribal oligarchies and the Brahmanas had no place.
- The ruling class belonged to the same class and varna. **Lichchhavis** are said to be the oldest republic in the world.

#### Administration

- Raja (King), Uparaja (Vice-King), Senapati (Commander) and Bhandagarika treasurer).

#### Mahajanapadas and their Capitals

Mahajanapadas (Location)	Capital(s)
1. Gandhara (Between Kabul and Rawalpindi).	Taxila
2. Anga (Bhagalpur and Munger in Bihar).	Champa
3. Magadha (Patna and Gaya district of Bihar)	Girivraj, Rajagrha (Bimbisara); Patliputra (Udayin); Vaishali (Shishunaga); Patliputra (Ashoka)
4. Kasi (Varanasi district, UP).	Varanasi
5. Vajji (Vaishali district, Bihar)	Vaishali
6. Malla (South of Vaishali district, UP)	Kusinagara and Pava
7. Chedi (river Ken, Bundelkhand area)	Sothivati nagar or Shuktimati
8. Vatsa (river Yamuna, Allahabad and Mirzapur district in UP).	Kausambi
9. Kosala (Eastern UP)	Sravasti and Ayodhya (Saket)
10. Kuru (Ganga Yamuna doab, Delhi-Meerut region).	Hastinapur and Indraprastha
11. Panchala (Ganga-Yamuna doab, Rohilkhand)	Ahichhatra , Kampilya
12. Matsya (Jaipur-Bharatpur-Alwar district)	Viratnagar/Bairath
13. Surasena (Mathura region).	Mathura
14. Asmaka (river Godavari) (near Paithan in Maharashtra)	Patna or Patali
15. Avanti (Malwa).	Ujjain (Northern capital), Mahismati (Southern capital)
16. Kamboja (Hazara district of Pakistan)	Rajapuri or Hataka

## Magadha Empire

- The period from 6th century BC to 4th century BC saw the struggle for supremacy amongst the four *Mahajanapadas*- Magadha, Kosala, Vatsa and Avanti.
- Ultimately, Magadha emerged as the most powerful and prosperous kingdom in the North India.
- The founder of Magadha was **Jarasandh**. But, the growth started under the **Haryankas**, expansion took place under the **Shishunagas** and **Nandas** and reached its zenith under the **Mauryas**.
- **Extent** Former districts of Patna, Gaya and parts of Shahabad.

### Causes of the Rise of Magadha

- ❖ Advantageous geographical location of the capital cities.
- ❖ Abundance of natural resources such as iron, helped in preparing effective weapons.
- ❖ The alluvial soil of the Gangetic plains and sufficient rainfall were very conducive for agriculture produce.
- ❖ Unorthodox character of Magadhan society and ambitious rulers.

## Haryanka Dynasty

### Bimbisara (544 BC- 492 BC)

- He built the capital city **Rajgir** (Girivraja), which was surrounded by five hills, the openings in which were closed by stone walls on all sides. This made Rajgir impregnable.
- He was contemporary to Gautama Buddha and Mahavira and the first king to have standing army for which he is known as *Seniya*.
- He defeated Anga King Brahmadatta and strengthened his own position by matrimonial alliances.
- His three wives belonged to royal family of Koshala (**Mahakosaladevi**, sister of Prasenjit, ruler of Koshala), Lichchhavi (**Chellana**, sister of Chetaka) and Madra clan of Punjab, (**Khema**, daughter of Madra king).
- He sent his personal physician, Jivak to his rival Avanti king **Chandrapadyota Mahasena** of Ujjain, to cure him of jaundice.
- The Gandhara ruler of Taxila, Pukku Sati, sent an embassy to Bimbisara.

### Ajatashatru— (492 BC- 460 BC)

- He was son of Chellana and Bimbisara. He occupied the throne by killing his father.
- He adopted an aggressive policy of expansion and gained complete control over Kasi.
- He defeated his maternal uncle Prasenjit, king of Kosala and married his daughter Vrijjira.
- He destroyed Vaishali (capital of the Lichchhavis) after a protracted war of sixteen years, by sowing the seeds of discord amongst the people of Vaishali.
- He introduced two war instruments named **Mahashilakantaka** a war engine, which catapulted big stones and **Rathamusala** a kind of chariot with a mace; (helped him to defeat the Lichchhavis).

- He fortified Rajagriha to meet the threat from Avanti. He also built the fort of Rajagriha and Jaladurga (a water fort) at Patali village on the bank of river Ganges.

- He patronised the first Buddhist Council and Buddha died during his reign.

### Udayin (460 BC-444 BC)

- Son and successor of Ajatashatru.
- He built the fort upon the confluence of the Ganga and the Son rivers at Pataliputra (Patna), thus, transferred the capital from Rajgriha to the new city **Pataliputra**.
- Udayin was succeeded by weak rulers Aniruddha, Munda and Naga Dasak.

## **Shishunaga Dynasty**

### **(412 BC - 344 BC)**

- Shishunaga was the minister of Nag-Dasak and was elected by the people.
- He destroyed the Pradyota dynasty of Avanti. This ended the hundred year old rivalry between the two states and Avanti became a part of Magadha. He temporarily shifted the capital to Vaishali.

### Kalashoka (Kakavarin)

- He succeeded Shishunaga.
- He transferred the capital from Vaishali to Patliputra and convened the second **Buddhist Council** in Vaishali (383 BC). Sabakarani was the President of this council.

## **Nanda Dynasty**

### **(344 BC - 323 BC)**

- It is considered to be the first non-Kshatriya dynasty.

### Mahapadmananda

- Mahapadmananda, the great conqueror and founder of the Nanda dynasty, also known as 'Ekarat', 'Eka-chhatra' (sovereign ruler) or sarvakshatrantaka i.e. uprooter of the Kshatriyas (by Puranas), Ugrasena i.e. owner of huge army (Pali texts). He is also described as "The first empire builder of Indian History."
- He conquered **Koshala** and **Kalinga** (and from here, he brought an image of the Jina as victory trophy).
- Succeeded by his eight sons, last one being Dhanananda.

### Dhanananda (The Last Nanda Ruler)

- Alexander invaded North-Western India during his reign (326 BC), but the huge army of Dhanananda

- detarded Alexander from advancing towards Gangetic valley.
- He is probably referred to as Agrammes or Xan-drames in the Greek texts.
- **Chandragupta Maurya**, assisted by Kautilya overthrew Dhanananda to establish Mauryan dynasty in 321 BC.

## Foreign Invasions

### Iranian Invasion

- The archaemenian ruler of Iran, took advantages of the political disunity on the North-West frontier-of India.
- **Cyrus** of Persia (588 BC-530 BC) was the first foreign conqueror, who penetrated well into India. He destroyed the city of Capisa (North of Kabul). He enrolled Indian soldiers in the **Persian Army**.
- **Darius-I**, grand son of Cyrus invaded North-West India in 516 BC and annexed Punjab, West of Indus and Sindh.
- **Xerxes**, the successor of Darius, employed Indians in the long war against the Greeks.

### Impacts of Iranian Invasion

- Iranian contact gave an impetus to Indo-Iranian trade.
- There was cultural exchange in the form of Kharoshthi script from Iran to India. Some of Ashoka's inscriptions in North-West India were written in this script.
- Iranian influence is perceptible in sculpture, e.g. the bell-shaped capitals.

### Alexander's Invasion

- Alexander, the king of Macedonia, destroyed the Iranian empire. From Iran, he marched towards India, attracted by its great wealth and divided polity.
- Alexander conquered Kabul in 328 BC. He moved to India through the unguarded Khyber pass and reached Orhind near Attock in 326 BC.
- **Ambhi**, the ruler of Taxila, readily submitted to Alexander. He got the first and strongest resistance from **Porus**.
- Alexander defeated Porus in the **Battle of Hydaspes** on the banks of the river Vitasta (Jhelum), but was impressed by his bravery, so he restored to Porus, his kingdom and made him his ally.

- After the **Battle of Sakala**, Alexander proceeded upto Beas with a view to conquer the East, but his fatigued army refused to cross the river.
- So, he was forced to retreat. He placed the North-Western India under the Greek Governor **Selucus Nikator**.
- He remained in India for 19 months (326-325 BC) and died in Babylon (323 BC) at the age of 33 years.

### Impacts of Alexander's Invasion

- Opening up of new trade routes between North-West India and Western Asia.
- Indians learnt from the Greeks in the fields of coinage, astronomy, architecture and sculpture (Gandhara school).
- Many Greek settlements were established, like Alexandria in Kabul and Sindh, Boukephala in Jhelum.
- Alexander's invasion paved the way for the expansion of the Mauryan empire in that area.
- His historians have left valuable accounts related to Indian geography, social and economic conditions, which enable us to build the Indian chronology of the times.

### Pre-Mauryan Society

- Division of society into four classes necessitated the formation of **Dharmasutras**.
- Shudras were ill-treated, while all privilege were cornered by the Brahmanas and Kshatriyas.
- Restrictions were imposed on women and they were not entitled to education or the *Upanayana* ceremony.
- *Dharmasutras* condemned *Vaishyas* for lending money.

### Pre-Mauryan Economy

- Agricultural production increased. *Varihi* and *Sali* were new varieties of rice; *Karisa Nivartan* and *Kulyavapa* were units of land measurement; **Sita** was the state's land.
- Development of industry and crafts. **Sreni** was the guild or corporation.
- Spurt in trade. *Sartha* referred to caravans and *Sresthi* to bankers. *Anathapindaka*, was a *Sresthi* of Sravasti, who donated *Jetuvana Vahana* to the Buddha. *Mendaka* was another rich *Sresthi* of Rajagriha.

- **Pottery** Northern black polished ware was used.

#### **Immediate Causes of the Rise of Heterodox Sects**

- ❖ Division of the society into four varnas.
- ❖ Reaction of the Kshatriyas to the Brahmins supremacy.
- ❖ The desire of the Vaishyas to improve their social position, with an increase in their economic position.
- ❖ To preserve cattle wealth.
- ❖ Desire to go back to simple life. The use of Sanskrit in Vedic texts was not understandable to the masses.

#### **Religious Environment**

The 6th century BC was the period of great religious upheaval or intellectual revolution. Of the various sects that emerged in this period, Jainism and Buddhism were the most prominent. This marked the beginning of second urbanisation in India, also known as the age of the Buddha.

### **Jainism**

- It was founded by **Rishabh�nath**. He is described as an incarnation of *Narayana* in *Vishnu Purana* and the *Bhagavata Purana*.
- There were 24 *Tirthankaras* (guru), the first one was Rishabh�nath (emblem-bull).
- *Rig Veda* mentions two *Tirthankaras*- Rishabh Dev and **Arishtanemi**.
- The 23rd *Tirthankara* was **Parsavanath** (symbol-serpent). He was the prince of Banaras, who abandoned the throne and led the life of a hermit. He died at Sammet Sikhar/Parasanath hill in Hazaribagh district of Jharkhand.
- The 24th *Tirthankara* was Vardhaman Mahavira (Emblem-lion).

#### **Life of Mahavira**

- Vardhaman Mahavira or *jina* (conqueror) was born to Siddhartha (head of Jnatrika clan) and Trishla (Lichchhavi princess and sister of Chetak) in 540 BC at **Kundalgram** near Vaishali in Bihar.
- He was married to Yashoda and had a daughter Priyadarsena, whose husband Jamali became his first disciple.
- **Renunciation** at the age of 30. He became an ascetic and joined an order founded by Parsavanath, but left it later. He wandered for six years with Gosala (founder of Ajivika Sect).
- **Kaivalya** (perfect knowledge) attained at the age of 42, under a sal tree at Jimbhika grama in Eastern India on the banks of the river Rijupalika.
- **First Sermon** at Pava to his eleven disciples known as Ganddharas. He

also founded a Jain Sangha at Pava.

- **Death** at the age of 72 in 468 BC at Pavapuri near Rajagriha.
- He became the head of a sect *Nirgranthas* (free from fetters), later called as 'Jinas.'
- He was called the *Jaina* or *Jitendriya* (one who conquered his senses); *Kevalin* (perfect learned), *Nirgranthas* (from all bonds), *Arihant* (blessed one) and *Mahavira* (the brave).

#### **Teachings of Mahavira**

- Rejected the authority of the *Vedas* and did not believe in existence of God.
- He believed that every object possesses a soul, so he professed strict non-violence.
- Attainment of salvation by believing in penance and dying of starvation.
- Universal brotherhood (equality) and non-belief in caste system.
- He believed in *karma* and transmigration of soul,

#### **Jaina Philosophy**

- **Syadvada** : All our judgements are necessarily relative, conditional and limited. It is the theory of 'may be' and seven modes of prediction are possible. Absolute affirmation and negation is wrong.
- **Anekantavada** : Doctrine of mayness of reality.
- **Three Ratnas** (Way to *Nirvana*) :
  - ✓ Right faith (*Samyak Vishwas*)
  - ✓ Right knowledge (*Samyak Jnan*)
  - ✓ Right conduct (*Samyak Karma*)

#### **Five Cardinal Principles**

- ✓ Non-injury (*Ahimsa*).
- ✓ Non-lying (*Satya*).
- ✓ Non-stealing (*Asteya*).
- ✓ Non-possession (*Aparigraha*).
- ✓ Observing celibacy (*Brahmacharya*).
- *Mahavratas-monks*, who observed the five principles.
- *Anuvratas* lay members who observed the five principles.

The first four principles were given by Parsavanath, while the fifth was added later by Lord Mahavira.

#### **Five Instruments of Knowledge**

- **Mati jnana**—Perception through activity of sense organs including the brain.
- **Avadhi jnana**—Clairvoyant perception.
- **Shruta jnana**—Knowledge revealed by scriptures.
- **Manahparyaya jnana**—Telepathic knowledge.
- **Keval jnana**—Omniscience or Temporal knowledge.

### Sects of Jainism

- After the death of Mahavira, during the reign of king **Chandragupta Maurya**, a severe famine led to a great exodus of Jaina monks from Ganga valley to the deccan. This migration led to a great schism in Jainism.
- **Bhadrabahu**, who led the emigrants, insisted on the retention of the rule of nudity, which led Mahavira establish the sect of the **Digambaras**.
- **Sthulabhadra**, the leader of the monk, who remained in the North allowed his followers to wear white garments termed as the **Svetambaras**.

### Jain Church

- Arya Sudharman, one of the disciple of Mahavira, became the *Thera* (Pontiff) of Jaina Church after his death. Later, he was succeeded by **Jambu**, **Sambutavijaya** and **Bhadrabahu** (contemporary to Chandragupta Maurya).

### Spread of Jainism

- In later times, Jainism was chiefly concentrated in two regions :
  - ✓ Gujarat and Rajasthan-Svetambara sect.
  - ✓ Mysore—Digambara sect.

### Importance of Jainism

Led to the growth of many regional languages like Suraseni, out of which grew the Marathi, Gujarati, Rajasthani and Kannada.

#### **Causes Behind the Decline of Jainism**

- ❖ Extreme observance of ahimsa, penance, and austerity.
- ❖ No patronage from later kings.
- ❖ The Jainas did not make any efforts to spread their religion

### Jaina Councils

Council	Year	Venue	Chairman	Royal Patron	Developments
First Jaina Council	300 BC	Pataliputra	Sthulabhadra	Chandragupta Maurya	Compilation of 12 Angas to replace 14 Purvas.
Second Jaina Council	AD 512	Vallabhi	Devridhigani Kshmasramana	-	Final compilation of 12 Angas and 12 Upangas.

## Buddhism

Founded by Gautama Buddha (also called **Sakyamuni** or **Tathagata**) known originally as Siddhartha.

### Gautam Buddha

- He was born in **563 BC** at **Lumbini**

(Sakya tribe of Kapilavastu) on Vaishka Purnima day.

- His father **Suddhodhana** was the Saka ruler, his mother **Mahamaya** died after 7 days of his birth, so he was brought up by stepmother **Gautami**.
- Married at 16 to **Yashodhara**, enjoyed the married life for 13 years and had a son named Rahul.
- Great Renunciation or *Mahabhiniskramana* at the age of **29** years after witnessing four scenes in a sequence (old man, sick man, dead body and an ascetic).
- **Nirvana** or enlightenment at 35 years of age at Uruvela (**Bodh Gaya**) under a pipal tree on the banks of Niranjana (Phalgu) river on the 49th day of meditation.
- First Sermon or **Dharmachakra Pravartana** at **Sarnath**, where his five disciples had settled.
- Death at the age of 80 years in 483 BC at **Kusinagar** in UP in the Malla republic (Mahaparinirvana).

### Major Events of Buddha's Life

Events	Symbols
Janma (Birth)	Lotus and Bull
Mahabhiniskramana (Renunciation)	Horse
Nirvana/Sambodhi (Enlightenment)	Bodhi tree
Dhramachakra pravartana (First Sermon)	Wheel
Mahaparinirvana (Death)	Stupa

### Teachings of Buddha

#### **(a) Four Noble Truths (Arya Satyas)**

1. The world is full of sorrows (*Sabbam Dukkam*).
  2. The cause of sorrow is desire (*Dwadash Nidan/Pratitya Samutpada*).
  3. If desires are conquered, all sorrows can be removed (*Nirvana*).
  4. This can be achieved by following the 8-fold path (*Ashtangika Marga*).
- The second truth, is based on Buddha's doctrine of *Paticchheha Samutpada* or *Pratitya Samutpada* i.e. law of dependent origination or causation.

#### **(b) Eight-Fold Path (Ashtangika marga)**

- Right understanding . Right thought
  - ✓ Right speech
  - ✓ Right action
  - ✓ Right means of livelihood
  - ✓ Right effort
  - ✓ Right mindfulnes awareness
  - ✓ Right concentrations meditation

#### **(c) Three Jewels (Triratnas)**

- ✓ Buddha (the enlightened)

- ✓ Dhamma (doctrine)
- ✓ Sangha (order)

#### **(d) Code of Conduct**

- ✓ Do not covet the property of others
- ✓ Do not commit violence
- ✓ Do not use intoxicants
- ✓ Do not speak a lie
- ✓ Do not indulge in corrupt practices

#### **(e) Belief in Nirvana**

- Also known as *moksha* or salvation. It refers to a belief in the concept of ultimate bliss, whereby the person gets freedom from the cycle of birth and death.

#### **(f) Belief in Ahimsa**

- Law of Karma and *Madhya Marga/ Madhyama Pratipada* (the middle path).

#### **Buddhist Sangha**

It consisted of monks (Bhikshus or Shramanas) and nuns, who acted as a torch bearer of the dhamma. The worshippers were called Upasakas.

#### **Sects of Buddhism**

- **Vajrayana** Its followers believed that salvation could be attained by magical power, which they called *vajra*.
- The chief divinity of the sect is *Tara*. Bengal and Bihar (Eastern India) was the main area of its concentration.
- **Hinayana** (the Lesser Vehicle).
- **Mahayana** (the Greater Vehicle).

#### **Buddhist Scriptures**

##### **Hinayana Literature (in Pali)—**

- **Tripitakas**
  - ✓ **Vinaya Pitaka** rules of monastic discipline for monks.
  - ✓ **Sutta Pitaka** collection of Buddha's sermon.
  - ✓ **Abhidhamma Pitaka** Philosophies of Buddha's teachings.

#### **Causes of the Decline of Buddhism**

- ❖ Incorporation of rituals and ceremonies, it originally denounced.
- ❖ Reform in Brahmanism and rise of Bhagavatism.
- ❖ Buddhists took up the use of Sanskrit (earlier Pali), started practicing idol worship, receiving offerings and huge donation.

#### **Importance of Buddhism**

- Promotion of trade and commerce.
- Stressed upon the **Doctrine of Ahimsa**.
- Improvement in condition of women and down trodden sections.
- Spread of Indian culture to other parts of Asia.
- Promotion of Pali language and education through Residential Universities (Taxila, Nalanda).

#### **Spread of Buddhism**

- Mahayanism in Central Asia, China and Japan, Hinayanism in Ceylon, Thailand and other parts of South-East Asia.
- King Ashoka sent Buddhist missions under his son Mahendra and daughter **Sanghamitra** to Sri Lanka.
- Kanishka was the patron of Mahayana sect of Buddhism.

#### **Buddhist Councils**

Buddhist Council	Year	Venue	Chairman	Royal Patron	Development(s)
First Council	483 BC	Saptaparni cave, Rajgruha	Mahakassapa	Ajatasatru (Haaryanka Dynasty)	Compilation of Sutta Pitaka and Vinaya Pitaka by Ananda and Upali respectively.
Second Council	383 BC	Vaishali	Sabakami	Kalasoka (Shisunaga Dynasty)	Monks were split into Sthaviravardins and Maha sanghikas.
Third Council	250 BC	Patiputra	Mogaliputta Tissa	Ashoka (Maurya Dynasty)	Compilation of Abhidhamma Pitaka.
Fourth Council	First century AD	Kundalvan, Kashmir or Jalandhar, Punjab	Vasumitra (Chairman) and Ashvaghosha (Vice-Chairman)	Kanishka (Kushan Dynasty)	Division of Buddhists into Hinayana and Mahayana.

#### **Some Famous Buddhist Scholars**

Ashvaghosha, Nagarjuna, Asanga, Vasubandhu, Buddhaghosha, Dinnaga and Dharmakirti.

#### **Bodhisattvas**

❖ Vajrapani (holds thunderbolt).	❖ Avlokitesvara/Padma pani (lotus bearer).
❖ Manjushri (holds books describing 10 paramitas)	❖ Kshitigrha (guardian of purgatories).
❖ Maitreya (the future Buddha).	❖ Amitabha/Amitayus ha (The Buddha of heaven).

#### **Buddhist Architecture**

##### **Buddhism takes the credit for—**

- ✓ First human statues to be worshipped.
- ✓ Stone-pillars depicting the life of Buddha at Gaya, Sanchi and Bharhut.
- ✓ Gandhara art and the beautiful images of the Buddha.
- ✓ Cave architecture in the Barabar hills at Gaya and in Western India around Nasik
- ✓ Art pieces of Amaravati and Nagarjunakonda.
- ✓ Traditional names of buddhist places.
- **Stupa** relics of Buddha or some prominent monks.
- **Chaitya** Prayer hall.
- **Vihara** residence.

#### **Buddhist Universities**

Buddhist Universities	Location	Founder
Nalanda	Badagaon, Bihar	Kumargupta-I
Vikramshila	Bhagalpur, Bihar	Dharmapala (Pala ruler)
Somapuri	North Bengal	Dharmapala (Pala ruler)
Jagadal	Bengal	Ramapala (Pala ruler)
Odantpuri	Bihar Sharif, Bihar	Gooala (Pala ruler)
Vallabhi	Gujarat	Bhattarka (Maitrak rule)

### Similarities between Buddhism and Jainism

- Both opposed Brahmanical domination and caste system, but upheld the essence of Vedas, preached truth, non-violence, celibacy and detachment from material comforts, believed in *karma* and rebirth and were liberal towards women.

### Differences between Buddhism and Jainism

Buddhism	Jainism
Followers	Monks
Salvation	Moderate one
Spread	Died in India, but spread to foreign lands
Ahimsa	Liberal Policy
Soul	Did not believe in soul
	Believed in soul

### Other Heterodox Sects

Sect	Fonder	Theory
Ajivikas	Gosala Maskariputra (Makhalii)	Believed in fate called 'Niyati'
Amoralism	Purana Kassapa	Sankhya Philosophy
Lokayata or Charvaka School	Ajita Keshakambalin	Uchchedavada (annihilationism)
Hindu Vaishesika School	Pakudha Katyayana	Sorrow, happiness and life are indestructible like Earth, water etc.

## The Mauryan Empire

### ORIGIN OF MAURYAS—

- **Mudrarakshasa**—Mauryas were connected with the Nandas and were called them Vrishal/Kulhina (of low clan).
- **Buddhist Tradition**—Chandragupta was a Kshatriya (Sakya clan). The region was full of peacocks (mors), so became famous as 'Moriyas'.
- **Puranas**—They belonged to the Moriya clan (low caste).
- *Junagarh rock inscription* of Rudradaman (AD 150) suggests that Mauryans might have been of *Vaishya* origin.

### Sources : Literary Sources

- **Arthashastra of Kautliya** (*Chanakya* or *Vishnugupta*) : Written in Sanskrit by Prime Minister of Chandragupta Maurya, it is a treatise on state craft and public administration under Mauryas. The book is in 15 parts.

### Buddhist Literature

- *Ashoka vadana and Divyavadana*: information about Bindusara and Ashoka's expeditions to Taxila.
- *Dipavamsa and Mahavamsa* (Sri Lankan chronicles): Ashoka's role in spreading of Buddhism in Sri Lanka.

- **Jatakas** Socio-economic conditions of Mauryan period.
- *Sthaviravali Charita or Parisisthaparvan of Hemachandra* (A biography of Chanakya): Chandragupta's conversion to Jainism.
- *Mudrarakshasa of Vishakhadatta* in Sanskrit—an account of prevailing socio-economic conditions and about how Chandragupta overthrew the Nandas with the help of Chanakya.
- **Indica of Megasthenes** : Socioeconomic and administrative structure under Mauryas; Indians free from slavery; 7-castes system and usury in India.

### Various Edicts of Mauryan Age

Edicts	Content	Location
<b>(A) Rock Edicts</b>		
14 Major Rock Edicts	Ashoka's principle of government and policy of <i>Dhamma</i> .	Kalsi (Dehradun, Girnar (Gujarat), Yerragudi (Andhra Pradesh), Mansehra (Pakistan), Sopara (Bombay), Dhauli and Jaugada (Orissa), Shahbazgarhi (Pakistan).
Two separate Kalinga Edicts	Kalinga War and new system of administration after war (All men are my children - <i>Dhauli</i> ).	Dhauli or Tosali and Jaugada (Orissa).
Minor Rock Edicts	Personal history of Ashoka and summary of his <i>Dhamma</i> .	South and central parts of the empire.
<b>(B) Pillar Edicts</b>		
7 Pillar Edicts	Appendix to the Rock Edicts.	Delhi topra, Delhi-Meerut, Rampurva, Lauriya-Araraj, Lauriya-Nandangarh and Allahabad-Kosam.
<b>(C) Other Edicts</b>		
Queen's Edict	Refers to Karuvaki mother of Tivala/Tivara, the 2nd Queen.	On Allahabad Pillar
Bhabru Edict	Ashoka's faith in Buddhism	Bairat (Rajasthan)
Nigalisagar Pillar Edict	Stupa of Buddha at Kanakamuni was enlarged.	Nigalisagar (Nepal)
Rummindei Pillar	Ashoka visited Lumbini and reduced land tribute.	Rummindei/Lumbini (Nepal).
3 Barbara cave Edicts	Donation to Ajivikas.	Barbara hills (Gaya, Bihar).

- **Puranas** Chronology and lists of Mauryan kings.
- **Others:** Account of Diodorus, Pliny, Plutarch (Chandragupta as *Androcottus*), Arrian and Justin (Chandragupta as *Sandrocottus*).

### Epigraphical Evidences

- **Ashoka's Edicts and Inscriptions:** Ashoka's edicts were first deciphered by **James Princep** in 1837. It was written in Prakrit language and 3 scripts viz Kharoshthi in North-West, Greek and Aramaic in West and Brahmi in Eastern India.

### Quick Digest

- ❖ *Inscriptions of Skandgupta and Rudradaman are also found at Girnar. The pillar Edict VII is the last edict to be issued by Ashoka.*
- ❖ *Mahasthan and Sohgura copper plate inscriptions issued by Chandragupta Maurya, deals with relief measures adopted during famine.*
- ❖ *Latest discovery-3 Ashokan minor rock edicts from Sannati village (Karnataka).*

### Chandragupta Maurya (321 BC-298 BC)

- Also called as Sandrocottus/ Androcottus by Greek scholars.
- He entered into an alliance with Parvartaka and with the help of Chanakya, he dethroned the last Nanda ruler Dhanananda and founded the Mauryan dynasty with the capital at Pataliputra.
- Chandragupta defeated Selucus Nikator, the general of Alexander in North-West India in 305 BC. Selucus surrendered a vast territory in return for 500 elephants. Hindukush became the boundary between the two states. There was a matrimonial alliance between them.
- Selucus also sent the Greek Ambassador, Megasthenese, to the court of Chandragupta Maurya.
- Chandragupta embraced Jainism and went to Chandragiri hill, at Sravanbelagola with Bhadrabahu, where he died of slow starvation (*Salekhna*).
- Chandragupta was the first Indian ruler to unite the whole North India. Both trade and agriculture flourished during his reign. Weights and measures were standarised, money came into use and sanitation and famine relief measures were undertaken by the states.

### Bindusara (298 BC-273 BC)

- Greeks called him Amitro Chafes (derived from Sanskrit word *Amitraghata* i.e. slayer of foes); *Vindupala* (Chinese texts);, *Sinhasena*-Jain text; *Bhadrasar* (*Yayu Purana*).
- He extended the kingdom further to the Peninsular region of India as far South as Mysore.
- Antiochus I, the Selucid king of Syria, sent his Ambassador, **Deimachus** to his court.
- Pliny mentions that Ptoleny Phillipadelphus of Egypt sent **Dionysius** as his Ambassador to the court of Bindusara.
- **Taranath**—The Buddhist monk, credits him for conquering the land between the two seas.

- **Antiochus I** sent some sweet wine and dried figs to Mauryan court on Bindusara's request, but denied to send a sophist explaining that Greek law forbid a sophist to be sold.
- He patronised Ajivika sect.

### Ashoka (273 BC-232 BC)

- He was the greatest Mauryan ruler; Governor of Taxila and Ujjain previously. His rule extended to the whole of sub-continent except to the extreme South. It also included Afghanistan, Baluchistan, Kashmir and valleys of Nepal.
- A Buddhist text **Dipavasma** says that he usurped the throne after killing his 99 brothers, except the youngest one, **Tissa** in the war of succession that lasted for four years.
- He fought **Kalinga War** (261 BC) in the 9th year of his rule. The miseries of war caused deep remorse to Ashoka, and therefore he abandoned the policy of physical conquest (*Bherighosa*) in favour of cultural conquest (*Dhammaghosa*).
- However, Ashoka retained Kalinga after conquest. This proves that he was not an extreme pacifist and changes in his policies were mainly for administrative purposes.
- He embraced Buddhism under **Upagupta**.
- He sent his son Mahendra and daughter Sanghamitra to Ceylon as Buddhist missionaries with a sapling of original pipal tree.
- He inaugurated the **Dhammayatras** from the 11th year of his reign by visiting Bodh Gaya; also appointed *Dharma Mahamatras* (officers of righteousness) to spread the message of *Dhamma*.

### Ashoka's Dhamma

- It was a code of conduct and a set of principles to be adopted and practiced by the people to build up an attitude of social responsibility and preserve the social order. It ordained to pay respect to elders, mercy to slaves and emphasised truth, non-violence and tolerance.

## Later Mauryans

- Following the death of Ashoka, the Mauryan dynasty lasted for 137 years, the empire was divided into Western and Eastern parts.
- **Brihadratha**, the last Mauryan ruler, was assassinated in 184 BC by his

Brahmin Commander in-chief, **Pushyamitra Shunga**, who established the Shunga dynasty.

### Mauryan Administration

- The Mauryan state was a welfare state, with highly centralised government.
- **Central Administration** King was the Nucleus, assisted by *Mantri Parishad*, which included :
  - ✓ **Yuvaraj** the crown Prince
  - ✓ **Gopa** the *Purohit* (Chief Priest)
  - ✓ **Senapati** Commander-in-Chief of Army and other ministers.

### Provincial Administration

<b>Provinces</b>	<b>Capital</b>
• <i>Uttarapatha (North)</i>	<i>Taxila</i>
• <i>Avantipatha (West)</i>	<i>Ujjain</i>
• <i>Prachyapatha (West)</i>	<i>Kalinga</i>
• <i>Dakshinapatha (South)</i>	<i>Suvarnagiri</i>
• <i>Central Province</i>	<i>Pataliputra</i>

### Some Important Rock Edicts

<b>Major Rock Edicts</b>	<b>Content</b>
• MRE I	Prohibition of animal sacrifice
• MRE II	Refers to Cholas, Pandyas, Satya putras and Kerala putra (kingdom of South) and care for man and animals
• MRE III	Liberality to Brahmins
• MRE IV	Non-violence; courtesy to relations
• MRE V	Appointment of Dhamma Mahamatras
• MRE VII	Tolerance among all sects
• MRE VIII	Dhammayatras
• MRE IX	Charity, kinship, Dhamma
• MRE XII	Religious tolerance
• MRE XIII	Kalinga war; Bheri Ghosa to Dhamma Ghosa

### Art and Architecture

- Mauryan art is classified into two groups by Ananda Coomaraswamy
  1. **Popular/Folk Art** : Sculptures of *Yaks ha* and *Yakshini* e.g. *Yaksha* of Parkham (Mathura); *Yakshini* from Vidisha (MP) and Didarganj (Patna).
  2. **Royal/Court Art** : Royal Palace of Chandragupta Maurya at Kumharar, Patna (*Fa Hien* referred

it as the *creation of God*), city of Pataliputra Ashokan pillars; stupas and caves.

- Mauryans introduced stone masonry on a large scale.
- **Pillars** represent the masterpiece of Mauryan sculpture e.g.
  - ✓ *Single lion capital* Rampurva and Lauriya Nandangarh.
  - ✓ *Four lion capital* at Sarnath and Sanchi.
  - ✓ *Carved elephant* at Dhauli and *engraved elephant* at Kalsi.
- **Stupas** were built throughout the empire, to enshrine the relics of Buddha e.g. Sanchi and Bharhut.

### Significance of Mauryan Rule

- The emblem of Indian Republic has been adopted from the lion capital of Ashokan pillar at **Sarnath**.
- Many Gurukuls and **Buddhist** monasteries (Taxila and Banaras) developed with royal patronage.
- *Literary development* : Arthashastra (Kautilya); Kalpasutra (Bhadrabahu), Katha Vastu (Buddhist text), Bhagwati Sutra, Acharanga Sutra and Dasavalik (Jaina text).

## Post- Mauryan Period

Mauryans were succeeded by many ruling dynasties from Central Asia in North-West India and by native rulers (Shungas, Kanvas, Satvahanas) in the Eastern, central and Deccan region of India.

### FOREIGN STATES

#### The Indo-Greeks

- ✓ A series of invasions began in about 200 BC. The weak Mauryan kings failed to restrict them. The first to invade India were the Indo Greeks, who ruled Bactria lying South of the Oxus river in the area covered by North Afghanistan. They occupied a large portion of North-Western India and moved upto Ayodhya and Pataliputra.
- ✓ The most famous Indo-Greek ruler was **Menander** (165-145 BC) or Milinda. He had his capital at *Sakala* (modern Sialkot in Punjab). He invaded the Ganga Yamuna doab. He was converted to Buddhism by Nagasena. Menander and Nagasena's conversation were recorded in the book *Milindapanho* or *the questions of Milinda*.

- ✓ They were the first rulers in India to issue coins. The Greek rule introduced features of Hellenistic art in the North-West frontier of India.e.g. Gandhara art and Military Governorship.
- ✓ The Sanskrit term for astrology Horshastra is derived from the Greek term horoscope.

#### **The Shakas or Scythians (AD 1st to 4th Century)**

- ✓ The Greeks were followed by the Shaka.
- ✓ There were five branches of Shakas ruling from Afghanistan, Punjab, Mathura, (where it ruled for about two centuries.), Ujjain (rules over) Western India and Deccan.
- ✓ A king of Ujjain, who called himself **Vikramaditya** defeated Shakas. An era called the *Vikram Samvat* is recorded from the event of his victory over the Shakas i-e. 57 BC.
- ✓ The most famous Shaka ruler in India was **Rudradaman** (AD 130-150).
- ✓ He repaired the Sudarshan lake in the semi arid zone of Kathiawar and issued the first ever longest inscription in Chaste Sanskrit at Junagarh.
- ✓ Other important Saka ruler in India were *Nahapana*, *Ushavadeva*, *Chastana*, *Ghamatika* etc.

#### **Sudarshana Lake**

- ❖ It was constructed by **Pushyagupta** the Governor of Saurashtra under **Chandragupta Maurya**.
- ❖ **Tushasp** constructed dam on the lake during the reign of **Ashoka Maurya**. First: reconstruction by Governor Survishakh under Saka Satrap Rudradaman and second by **Chakrapalit** under **Skandgupta**.

#### **The Parthians (AD 1st to 3rd Century)**

- Originally, the Parthians lived in Iran, from where they moved to India and replaced Shakas.
- They occupied only a small portion of North-Western India as compared to the Greeks and Shakas.
- The most famous Parthian king was Gondophernes, in whose reign **St. Thomas** came to India for the propagation of Christianity.

#### **The Kushanas (AD 1st to 3rd Century)**

- The Kushanas (Yuechis or Tochanians) replaced the Greeks and Parthians. They were nomadic people from Steppes of North Central Asia. Their empire included a good part of

Central Asia, portion of Iran, a portion of Afghanistan, almost the whole of Pakistan and North India.

- The first Kushana dynasty was founded by *Kujala Kad-phises*. *Wima Kadphises* (the 2nd ruler) issued gold coins in India. Kanishka founded the 2nd Kushana dynasty.

#### **Kanishka (AD 78-101)**

He was also known as *Second Ashoka* and was the most famous Kushana ruler. He had two capitals-Purushpur and Mathura.

- Kanishka started an era in AD 78, which is now known as **Saka era** and is used by Government of India.
- He patronised the fourth Buddhist Council in Kashmir, where the doctrine of **Mahayana** form of the Buddhism was finalised.
- *Kanishka patronised the following persons :*  
*Ashwaghosha (Buddhacharita), Nagarjuna (Madhyamik sutra), Vasumitra (Chairman of the fourth Buddhist Council) Charaka (Charakasamhita).*
- The last Kushana ruler was **Vasudeva I**. This shows that successors of Kanishka bore typical Indian names as Vasudeva.

#### **Impacts of Central Asian Contact**

- The Shaka-Kushana phase registered a distinct advance in building activities. The use of burnt brick for flooring and that of tiles for both flooring and roofing, construction of brick well and red ware pottery became prevalent.
- They introduced better cavalry and tunic, trousers and long heavy coat. They also brought cap, helmets, and boots, which were used by warriors.
- The Kushanas were the first rulers in India to issue gold coins. Kanishka controlled the famous silk route in Central Asia.
- The Kushana empire gave rise to Gandhara and Mathura Schools of Art. The famous headless erect statue of Kanishka shows artistic creations of Mathura School. Vatsyayana wrote *Kamasutra* in this period.

#### **Gandhara School of Art**

- It exhibits the influence of Greek and Roman art; patronised by Shakas and Kushanas. The school specialised in Buddha and Bodhi-sattva images, stupas and monasteries. They used blue schist stone.

- Buddhas of this school of art are gentle, graceful and compassionate.

#### **Mathura School of Art**

- The Buddha of the Gandhara School of Art were copied here, but in a refined way.
- The majority of creations consisted of nude, seminude figures of female, *Yakshinis* or *Apsara* in an erotic pose.
- The image exhibited not only masculinity and energetic body, but also grace and religious feeling.

#### **Amaravati School of Art**

- Lord Buddha depicted in the form of a *swastika* mark. Also depicted Buddha in the human form for the first time.
- The ornate bull or 'Nandiswara', situated in the Amareswara temple, is also an Amaravati piece of art.

## **Native States**

The successors of Ashoka were weak kings, so Mauryan empire gradually declined. The last ruler of Mauryan dynasty was killed by his own commander-in-Chief Pushyamitra Shunga who founded the **Shunga dynasty**.

#### **Shunga Dynasty 185 BC-73 BC)**

- **Pushyamitra Shunga** ruled from Vidisha (MP). He defeated Bactrian king, Demetrius and conducted two *Ashvamedha Yajnas* (Chief priest-Patanjali). He is considered to be the prosecutor of Buddhism.
- However, the Buddhist Stupa at Bharhut was built during his reign.
- The Greek Ambassador **Heliodorus** visited the court of fifth Shunga king **Bhagabhadra** and set-up a pillar in honour of Lord Vasudeva near Vidisha (Madhya Pradesh).
- Shunga king **Agnimitra** was hero of *Kalidasa's Malvikagnimitram*.
- The Shungas marked as the revival of Hindu culture, Sanskrit language and Bhagavatism.
- The great Sanskrit Grammarian, **Patanjali** was patronised by them.
- The famous book on Hindu Law *Manusmriti* was compiled during this period.
- **Later Kings:** Vasumitra, Vajramitra, Bhagabhadra, Devabhuti. All of them were Brahmanas.
- **Shunga Art:** Bharhut Stupa, gateway railing surrounding the Sanchi Stupa built by Ashoka, Vihara, Chaitya and

Stupa of Bhaja (Poona), Nasika Chaitya, Amaravati Stupa etc.

#### **Kanva Dynasty (73 BC-28 BC)**

- Kanva was a minor dynasty founded by **Vasudeva**, who killed the last Shunga king **Devabhuti**. Its capital was at Patliputra.
- Bhumimitra and Narayana succeeded Vasudeva. All the rulers were Brahmins.
- The last ruler, Susarman, was killed by Andhra king Simuka.

#### **The Cheti Dynasty of Kalinga**

- The Hathigumpha inscription of Kharavela—the third ruler of the dynasty, gives information about the Chetis. Kharavela pushed his kingdom upto Godavari in the South, and recovered the Jaina image from Magadha.
- He was a follower of Jainism. He constructed residential caves for Jain monks on the Udaygiri hill near Bhubaneshwar, Orissa.

#### **The Satavahana Dynasty**

- The Satavahanas are considered to be identical with the Andhra, who are mentioned in the *Puranas*.
- The earliest inscriptions of the Satavahanas belong to the first century BC, when they defeated the Kanvas and established their power in parts of Central India.
- They were successors of Mauryas in the Deccan and Central India.
- The founder of this empire was **Simuka**, after the assassination of last Kanava King Susarman.
- **Gautamiputra Satakarni** (AD 106-130) was the greatest ruler of this dynasty.
- Assumed the title of **raja-raja** and **maharaja**.
- His capital was at Paithan or Pratisthan on the banks of the river Godavari in Aurangabad district.
- **Vasishthiputra Sri Satkarni**, the 24th ruler, married the daughter of Saka Satrap Rudradaman, but was twice defeated by him.
- **Yajna Sri Satkarni** (AD 165-194), the later king of Satavahanas, recovered North Konkan and Malwa from Shaka rulers. His coins figured 'ship with double mast'.
- **Pulamayi III** was the last Satavahana ruler, succeeded by Ikshavakus in the 3rd century BC.

### **Important Aspects of the Satavahanas**

- They issued mostly lead Coins (apart from copper and bronze). Satavahanas were the first rulers to make land grants to Brahmins. There is an instance of grants being made to Buddhist monk, which shows they also promoted Buddhism.
- Satavahana rulers called themselves Brahmins. Gautamiputra Satkarni boasted that he was a true Brahmin.
- They performed Vedic rituals and worshipped Gods like Krishna, Vasudeva and others.
- Stupas at Nagarjunakonda and Amaravati in Andhra Pradesh became important seats of Buddhist culture under the Satavahanas.
- In the Satavahana phase, many *chaityas* e.g. Karle caves in Western Deccan, Nashik and Kanheri and Viharas were cut out of solid rocks in the North-Western Deccan. The official language of Satavahanas was Prakrit and the script was Brahmi.
- Provinces were called **Ahara**, and the officials were known as Amatyas and **Mahamatyas**.

## **The Age of the Guptas**

- The fall of Kushana empire towards the middle of AD 3rd century led to the establishment of the empire of the Guptas.
- Although the Gupta empire was not as large as the Mauryas, it kept North India politically united for more than a century.
- Their period is generally regarded as the **Golden Age of Hinduism**.
- Guptas belonged to the *Vaishya* caste.
- **Sri Gupta** was the founder of Gupta dynasty. Sri Gupta was followed by his son *Ghatotkachagupta* and was followed by his son Chandragupta. Both assumed the title of **Maharaja**.

### **Chandragupta I (AD 319-335)**

- He greatly raised the power and prestige of his dynasty by his matrimonial alliances and conquests.
- He married the Lichchhavi princess Kumara Devi and issued Chandragupta-I Kumaradevi type gold coins (Dinaras).
- Chandragupta-I is also said to have started a new era Gupta Era, which starts from 26th February AD 320, the

coronation date of Chandragupta I.

- He established his authority over Magadha, Saketa and Prayaga.
- He was the first Gupta king to adopt the title of **Maharajadhiraja**. He issued gold coins.

### **Samudragupta (AD 335-380)**

- Son and successor of Chandragupta I. He was a great conqueror.
- The long inscription in the pillar of Allahabad (*Prayag Prasasti*) enumerated by his court poet Harisena informs about the people and the countries that were conquered by *Samudragupta*. Because of his bravery and generalship, he came to be called the **Napoleon of India** by V.A Smith.
- **Virasen** was his Commander-in-Chief during Southern campaign. Vasubandhu, a famous Buddhist scholar, was his minister. Samudragupta's army reached as far as Kanchi, Tamil Nadu, where the Pallavas were compelled to recognise his suzerainty.
- Samudragupta annexed the territories after defeating the monarchs in North India, but did not annex territories in South India. His authority over Java, Sumatra and Malaya island proves that he maintained a strong navy.
- Samudragupta is said to have composed numerous poems of high merit. Some of his coins represent him playing the *Veena*. He also performed *Ashvamedha* sacrifices.
- The Allahabad pillar inscriptions mention the title **Dharma Prachar Bandhu** i.e. he was the upholder of Brahmanical religion.
- According to Chinese sources, **Meghavarman**, the ruler of Sri Lanka, sent a missionary to Samudragupta for a permission to build a **Buddhist temple at Gaya**.
- He was a Vaishnavite.

### **Chandragupta II (AD 380-415)**

- According to *Devi Chandraguptam* of Vishakhadutta, Samudragupta was succeeded by - Ramagupta.
- Ramagupta was a coward. He surrendered his queen **Dhruvadevi** to the Saka invader. He was also the only Gupta ruler to issue copper coins.
- Chandragupta II, the younger brother

- of **Ramagupta**, invaded the enemy's camp, killed the Saka ruler and Ramagupta; occupied the throne and married Dhruvadevi.
- He proved to be a great ruler and extended his empire by conquests and matrimonial alliances. He married **Kuberdanga** of Naga dynasty and married his daughter Prabhavatigupta, with the Vakataka prince Rudrasena II.
  - **Mehrauli Iron Pillar Inscription** (Delhi) claims his authority over North-Western India and a good portion of Bengal. It says that the king defeated the confederacy of Vangas and Vahilkas (Bulkh). **Virasena's Udaygiri** cave inscription refers to his conquest of the whole world.
  - Chandragupta II conquered **Western Malwa** and Gujarat, from the Shaka Kshatrapas Rudra Simha III. The conquest gave Chandragupta the western sea coast, famous for trade and commerce. This contributed to the prosperity of Malwa and its chief city Ujjain. Ujjain was made the second capital by Chandragupta II.
  - He issued silver coins (first Gupta ruler to issue silver coins) and adopted the title **Vikramaditya** and **Sakari** in memory of his victory.
  - The court of Chandragupta II at Ujjain was adorned by nine scholars known as **Navaratna**, including Kalidasa and Amarsimha.
  - **Harisena** was the court poet and the minister.
  - **Fa Hien**—The Chinese pilgrim visited India at his time.
- Kumaragupta (AD 415-455)**
- He founded the **Nalanda University**.
  - Worshipper of Lord Kartikeya.
  - In the last year of his reign, the empire was invaded by the Turko-Mongol tribe, the Hunas. During the war with the Hunas, Kumaragupta died.
- Skandagupta (AD 455-467)**
- He repulsed the ferocious Hunas attacks twice. The heroic feat entitled him the title **Vikramaditya** (also mentioned in the Bhitari Pillar Inscription).
  - During his period Sudarshana lake was repaired and its embankments were rebuilt.
- The continuous attack of the Hunas weakened the Guptas economy and the decline of empire began soon after the death of Skandagupta.
- Reasons of the fall of Gupta Empire**
- The weak successors of Skandagupta could not check the growing Huna power.
  - Rise of feudatories in Bihar, Bengal and Madhya Pradesh.
- Gupta Kings, their Titles and Coins**
- | Gupta Kings     | Titles  | Gold Coins (Dinaras)   |
|-----------------|---|--|
| Chandragupta I  | Maharajadhiraja or king of the kings  | Kumara Devi type   |
| Samudragupta    | Kaviraj (Prayag Prasasti), Ashvamedha, Vikram, Param Bhagvat, Sarva-rajoch Chetta (uprooter of all kings).                          | Dhanurdhari-Archer, Garud, Axe, Ashvamedha, Vyagnra hanam (Tiger killing), Veena Vadhan, Playing 1 flute type.         |
| Chandragupta II | Vikramaditya, Sakari, Devagupta/Devaraja, Narendra, Chandra, Sinh Vikram, Param Bhagvat etc.  | Ashvarohi, Chhatradhari, Chakra-Vikram type etc.   |
| Kumaragupta     | Mahendravita, Ashvamedha, Mahendra and Mahendra Sinh  | Gajarohi, Khadgadhari, Gajarohi Sinh-nihanta, Khangananata, (i.e. rhinoceros slayer) Kartikeya and Apratighmudra type. |
| Skandagupta     | Vikramaditya, Kramaditya, Param Bhagvat, (on coins); Shakropama (Kahatum Pillar inscription); Devaraja (Arya Manjushri Mula Kalpa). | Archer king and queen, Chhatra and horseman type.  |
- Gupta Administration**
- Gupta administration was highly decentralised and quasi-feudal in character.
  - Gupta Kings adopted pompous titles such as *Parameshvara*, *Maharajadhiraj*, *Parambhattarka*, which signify that they ruled over the lesser kings in their empire. The practice of appointing Kumara (crown prince) came in vogue.
  - Kings were assisted by *Mantriparishad*/*Mantrimandal* (Council of Ministers) as referred in the *Prayag Prasasti*.
- Administrative Units and their Heads**
- | Unit                              | Headed by                   |
|-----------------------------------|-----------------------------|
| Bhukti (province)                 | Uparika                     |
| Vishayas (district)               | Vishyapati                  |
| Nagar/Peth Village (sub-district) | Purapala/Nagar Pati Gramika |
- **City Administration:** Paura was the council responsible for city administration. It included the President of the city corporation, Chief Representative of the guild of merchants, a representative of the artisans and the Chief Accountant. It comprised of local representatives.
  - **Army Military:** Chariots receded into the background and cavalry came to

the forefront. The Gupta empire maintained a large standing army, but essentially the military organisation was feudal in character.

- **Senabhakta:** It was a form of tax i.e. the army was to be fed by the people whenever, it passed through the countryside. Forced labour or *Vishiti* was also practised in royal army.
- **Revenue:** Land revenue was the chief source of state's income. It varied from 1/4th to 1/6th of the produce. The number of taxes increased.
- During the Gupta's rule, land grants (Agarhara and Devagrahara grants) also included transfer of royal rights over salt and mines, which were earlier states monopoly during Mauryas.
- **Judiciary:** for the first time, civil and criminal law were clearly defined and demarcated.
- **Coinage:** Guptas issued the largest number of gold coins, which were called **dinaras** in their inscriptions. Silver coins were called the Rupayakas.

### **Important Officials**

Official	Field of Work
❖ Maha Pratihar	Chief usher of Royal Palace
❖ Dandapashika	Chief officer of the Police department
❖ Mahaprajapati	Chief officer of elephant corps
❖ Vinayasthitisthapak	Chief officer of religious affairs
❖ Mahashvapat	Chief of Cavalry
❖ Mahadandanayaka	Minister of Justice

### **Society**

- **The Supremacy of the Brahmins continued:** They accumulated wealth on accounts of numerous land grant and claimed many privilege.
- The position of the **Shudras** improved, and they were permitted to listen epic, *puranas* and to worship a new God, Lord Krishna.
- *Varna system* got strengthened due to the large scale proliferation of castes, chiefly because of assimilation of foreigners into the Indian society, absorption of tribal people into Brahminical society through land grants and transformation of guilds into class due to the decline of trade and urban centres.
- The Position of women declined; The first example of immolation of widow after death of her husband. (*Sati*)

appeared in Gupta times. (Also referred in the Eran inscription, which mentions that the wife of Goparaja, commander of Bhangupta, performed *Sati*). Polygamy and pre-puberty marriages were common. Women were not given the right to property except for *stridhana*, in the form of garments and jewellery.

### **Religion**

- **Bhagavatism** centred around the worship of *Vishnu* or *Bhagavat*.
- *Bhagavad Gita* was written in this period. It preached the doctrine of incarnation or *Avatar*.
- Idol worship in the temple became a common feature. The Gods were unified with their respective consorts. Thus, *Parvati* got associated with *Shiva* and *Laxmi* with *Vishnu*.
- Gupta kings followed a policy of tolerance towards the different religious sects.
- There was an evolution of Vajrayanism as well as and Buddhist tantric cult.
- **Buddhism** no longer received royal patronage in the Gupta period.

### **Economy**

*Land was classified into five groups :*

- ✓ *Khila* — Waste land
- ✓ *Kshetra Bhoomi* — Cultivable land
- ✓ *Vastu Bhoomi* — Habitable land
- ✓ *Charagah Bhoomi* — Pasture land
- ✓ *Aprahata Bhoomi* — Forest land
- According to Paharpur copper plate inscription of Buddhagupta, state was the exclusive owner of land.
- Poona plates of Prabhavati Gupta refers to the land survey conducted during the period.
- *Pushtapala* was the officer incharge for maintaining records of all land transactions.
- **Trade :** There was a decline in trade with the Roman empire after AD 3rd century, while the South-East Asian trade increased.
- Ports on west coast to trade with Mediterranean and West Asia—Bharoach, Chaul, Kalyan and Cambay.
- Ports on East coast to trade with South-East Asia—Tamralipti, Ghantashala and Kandura.

### Taxes

- Bhaga:** King's share in the produce, to be paid by cultivators.
- Bali:** (Earlier a voluntary offering) an additional and oppressive tax during Gupta period.
- Bhoga:** Periodic supplies of fruits, firewoods etc., which the villagers had to furnish to the king.
- Uparka:** An extra tax levied on all subjects.

### Gupta Art

Gupta period is also called The Golden Age of **Ancient India**.

- **Samudragupta** is represented on his coins playing the Veena and **Chandragupta II** is credited with maintaining in his court, nine luminaries or great scholars viz, Kalidasa, Amarsimha, Dhanavantri, Varahmihira, Vararuchi (Vartika-a comment on Ashtadhyayi), Ghatakarna, Kshapranak, Velabhatt and Shanku.
- Over two metre high bronze images of the **Buddha of Gupta period has been recovered from Bhagalpur**.
- For the first time, we get in the Gupta period images of **Vishnu**, **Shiva** and some other Hindu Gods.
- Buddha sitting in *Dharmachakra mudra* (Sarnath) and Buddha images of Bamiyan belong to this period.
- **Brahminical Image:** The Great Boar (Varah) carved in relief at the entrance of a cave at Udayagiri.
- **Paintings:** Ajanta paintings and paintings at Bagh (Madhya Pradesh) are of this time. They belong to the Buddhist Art.
- In this period the Gandhara School of Sculpture was replaced by regional centres at Banaras, Pataliputra and Mathura.
- **Stupas:** Mirpur Khas (Sindh), Ratnagiri (Orissa) and Dhammekh (Sarnath).

### Gupta Architecture

- The Gupta age marks the beginning of main style of temple architecture in India namely the **Nagara** and **Dravida** style (shikhar style) with **Garbhagriha** (shrine room in which the image of God is kept).
- Square sanctum sanctorum and a pillared porch.

### Religious Literature

- **Hindu Texts** Many old religious books

were re-written e.g. Vayu Purana, Vishnu Purana, Manu Smriti (translated into English under the title of "Institutes of Hindu Law" by William Jones), **Ramayana and Mahabharata**.

- **New Text** Narad Smriti, Parashar Smriti, Katyana Smriti and Brihat Smriti.
- **Jain Texts:** Nyayavartam written by Sidhsena.
- **Buddhist Texts** Abhidharma Kosha written by Dignaga, Vishuddhimagga written by Buddhaghosa
- Mrichchakatikam (i.e. the clay cart) is the love story of a poor Brahmin Charudatta and virtuous courtsean Vasantasena. The work is notable for its realistic depiction of city life.

### Quick Digest

- ❖ *Brahmasidhanta*, was translated into Arabic under the title "Sind Hind".
- ❖ **Ritusamhara**, **Meghdootam** and **Raghuvamsham** are epics and not plays.
- ❖ **Bhasa** wrote 13 plays in this period.
- ❖ There was a development of Sanskrit grammar based on **Panini** and **Patanjali**. *Amarakosha* was compiled by Amarasimha.

### Other Literacy Works

Author	Book
Sudraka	Mrichchakatikam
Bharavi	Kiratarjuniya
Dandin	Dasa Kumar Charita and Kavyadarshan
Bhasa	Svapnavasavadattam, Charudatta
Vishakhadutta	Mudrarakshasa Devi Chandraguptam
Vishnu Sharma	Panchtantra and Hitopadesha
Amarismha	Amarkosh
Iswara Krishna	Sankhya Kanika
Vatsyayana	Kamasutra (earliest book on sex)
Bhattin	Ravan Vadha
Varahamihira	Panchasiddhantika, Brihad Samhita

### Astronomy (Science)

- Aryabhatta, the great mathematician wrote **Aryabhatiyam** and **Surya Siddhanta**. He placed the value of first line number and the **use of zero ('0')**.
- **Varahamihira** wrote *Panchasiddhantika* and *Brihadsamhita*.

He said the Moon moves round the Earth and Earth together with the Moon, move round the Sun.

- **Brahmagupta** was a great mathematician. He hinted the law of gravitation in *Brahma Siddhanta*. *Vagabhata* was a distinguished physician.
- Dhanvantri was famous for the knowledge of *Ayurveda*.
- *Romaka Siddhanta*, a book on astronomy was compiled.
- Palakapya wrote *Hastyagarveda*, a treatise on the disease of elephants.
- Bhaskara wrote *Mahabhashkarya* and *Laghu Bhaskarya*

## The Harsha Period

### PUSHYABHUTI/ VARDHANA DYNASTY:

- Harsha belonged to Pushyabhuti dynasty, which ruled from Thaneswar. Pushyabhus were the feudatories of Guptas, but had assumed independence after Hunas' invasion.
- **Prabhakar Vardhana** (AD 550-605) was its first important ruler succeeded by **Rajyavardhan** (AD 605-606).
- Grahavarman (Maukhari ruler of Kannauj), husband of Rajyashri (sister of Rajyavardhana) was murdered by Devagupta (ruler of Malwa) in alliance with Shashanka (ruler of Bengal).
- Rajyavardhana killed Devagupta but was himself killed by Shashanka in AD 606.

### **Harshavardhan (AD 606-647)**

- Harsha, also known as **Siladitya**, ascended the throne in AD 606 and from this year, *Harsha Era* began.
- Harsha made **Kannauj** his capital.
- The early history of Harsha's reign is constructed from a study of the book *Harshacharita*.
- Harsha is called the last great Hindu emperor of India, but he was neither a staunch Hindu nor the ruler of the whole country.
- In Eastern India, he faced opposition from Shaivite king Shashanka of Gauda, who cut off the Bodhi tree of Bodhgaya.
- Harsha defeated Dhruvasena II, the Maitraka ruler of Vallabhi
- Harsha was defeated in Deccan by Pulakesin-II, the Chalukyan king of Vatapi. Harsha's administration became more feudal and decentralised.
- The Chinese pilgrim Hiuen Tsang

visited India during Harsha period. He informs us that the revenue of Harsha was divided into four parts, one for the king, second for the scholar, third for the officer and fourth for religious purposes.

- Harsha used to celebrate a solemn festival at Prayag after every five years.
- After the death of Harsha in AD 657, the empire once again broke up into petty states and the throne was usurped by his minister Arunashva.
- Harsha was a Shaivite. He also granted revenue of 200 villages for the maintenance of Nalanda University. It is said that Harsha brought '5 indies' under his control (Punjab, Kannauj, Bengal, Bihar and Orissa).

### **Tripartite Struggle**

- The struggle for supremacy between the Palas, the Gurjara - Pratihara and the Rashtrakutas for the possession of Kannauj (Farrukhabad District, UP) at the end of AD 8th century is known as the Tripartite struggle in history.

## Temple Architecture in India

### **Temple Architecture and Sculpture**

#### **Basic Form of the Indian Temple:**

- The basic elements that comprise a Indian Temple are given below:
- **Garbhagriha:** Literally means womb-house. It is a cave-like sanctum which houses the main icon of the temple. In earlier times, it was a small cubicle with one entrance. In later periods, it grew into a larger chamber.
- **Mandapa:** The entrance to the temple. It could be a portico or a colonnaded hall where worshippers stand.
- **Shikhara/Vimana:** Noticed from the 5th century CE. It is a mountain-like spire on top. In north India, it is called Shikhara and is curving in shape. In the south, it is like a pyramidal tower and is called Vimana.



- **Amalaka:** Stone-like disc seen at the top of the temple. Mostly in north Indian temples.
- **Kalasha:** It is the topmost part of the temple. Mainly seen in north Indian styles.
- **Antarala:** It is a vestibule between the Garbhagriha and the Mandapa.
- **Jagati:** This is common in north Indian temples and is a raised platform where devotees can sit and pray.
- **Vahana:** It is the vehicle of the main deity which along with the standard pillar or Dhvaj which are placed axially.

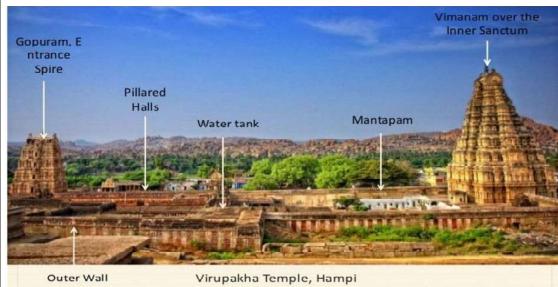


#### **Types of Indian Temple Architecture/Styles**

**Basically there are 3 kinds of temple architecture:**

1. Nagara Style
2. Dravida Style
3. Vesara Style

#### **The Nagara or North Indian temple style**



- Became popular in northern India.
- Entire temple is generally built on a stone platform with steps leading to it.
- No grand boundary walls or gateways (unlike the Dravida style).
- Earlier temples had one shikhara whereas latter temples had many.
- The garbhagriha is located directly beneath the tallest shikhara.

#### **Subdivisions of Nagara Style**

##### **1. Based on Style:**

###### **● Rekha-prasada/Latina**

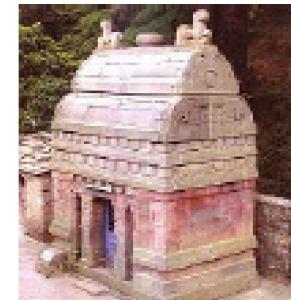
- ✓ Simple shikhara with square base and whose walls slope inwards to a point on top.
- ✓ Most common.
- ✓ In later periods, latina type became more complex with several towers clustered together.
- ✓ The tallest tower was at the centre and the garbhagriha was directly beneath it.

###### **● Phamsana:**



- Roofs composed of many slabs that gently rise to a single point over the building's centre.
- Roofs do not curve inwards like the latina type, but they slope upwards on a straight incline.
- Phamsana structures are generally broader and shorter than latina ones.
- In many temples, the latina type is used to house the garbhagriha whereas the mandapa has a Phamsana style of architecture.

###### **● Valabhi**



- Rectangular buildings with a roof that rises into a vaulted chamber.
- Also called wagon-vaulted buildings.

### **Nagara Style in Various Regions**

#### **Central India :**

- Uttar Pradesh, Madhya Pradesh, Rajasthan.
- Made of sandstone.
- Oldest surviving structural temples from the Gupta period are in MP. They are small shrines with four pillars to support a small mandapa. The mandapas are basically small porch-like structures before the garbhagriha which are also rather small. Examples: temple at Udaigiri – part of a larger Hindu complex of cave shrines (outskirts of Vidisha); temple at Sanchi (which was a Buddhist site).
- This shows how similar architectural developments were incorporated in both religions.

#### **Dashavatara Vishnu Temple, Deogarh, UP**

- Classic example of the late Gupta period temple architecture.
- Patrons are unknown.
- From the architecture and imagery, it is known that the temple was built in early 6th century CE.
- **Panchayatana** Style of architecture.
  - ✓ Main shrine is built on a rectangular plinth with four subsidiary shrines that are smaller and at the 4 corners.
  - ✓ Hence, there are a total of five shrines and hence the name, Panchayatana.
- This temple has a rekha-prasada type of shikhara.
- It is a west-facing temple. Most temples are north or east facing.
- Has a grand doorway with figures of Ganga and Yamuna on the left and right side respectively.
- Depicts Vishnu in various forms. 3 main Vishnu reliefs on the temple walls: Sheshashayana on the south; Nara-

Narayan on the east; and Gajendramoksha on the west.  
 → Since it was assumed that the subsidiary shrines had avatars of Vishnu in them, the temple was mistaken to be Dashavatara temple.

#### **Khajuraho Temples (MP)**

- Built in the 10th century CE.
- It is a UNESCO World Heritage Site.
- Patronised by Chandela Kings.
- All temples made of sandstone.
- From the temple at Deogarh (built about 400 years before Khajuraho temples), the development of the Nagara architectural style is visible here.
  - These temples are known for their extensive erotic sculptures. Mostly Hindu, though some Jain temples are also present.
  - There are also temples dedicated to Yoginis which form part of Tantric worship indicating the rise and spread of tantric cult after the 7th century. E.g. Chausanth Yogini temple.
  - Important temples in Khajuraho: Kandariya Mahadeo (dedicated to Lord Shiva) and Lakshmana temple.

#### **West India**

- Gujarat, Rajasthan and western MP.
- Sandstone is most common, grey to black basalt is also seen in some 10 – 12th century temples.
- Also seen is soft white marble in 10 – 12th century Jain Temples at Mount Abu and a 15th century temple at Ranakpur.
- Samlaji in Gujarat is an important art historical site. Many sculptures made of grey schist are found here.

## Other Dynasties and Rulers

Dynasty	Capital	Founder	Famous Rulers	Other Features
<b>Palas</b> (Eastern India)	Pataliputra, Gaur	Gopala	<b>Dharma Pala:</b> Revived Nalanda University and founded Vikramshila University defeated Bhoja (Pratihara) Amoghavarsha (Rashtrakuta) and won Kannauj. <b>Devapala</b> won Orissa and Assam. <b>Mahikala</b> defeated by Rajendra Chola.	They traded with South-East Asia and were replaced by Senas in Bengal.
<b>Gurjara Pratiharas</b> (SW Rajasthan) (AD 733-1019)	1. Jodhpur 2. Malwa	Harichandra	<b>Mihir Bhoja:</b> He worshipped Lord Vishnu and adopted the title <i>Adi Varaha</i> .	They originated in Geyanta region of Rajasthan.
<b>Vakatakas</b> (Deccan and Central India)	Vatsagumla, Paunar	Vindhya Shakti	<b>Pravarsena I</b> performed four <i>Ashvamedha Yagyas</i> .	Chandragupta II married his daughter Prabhavati to the Vakataka king Rudrasena.
<b>Eastern Gangas of Orissa</b>	Kalingnagar, Cuttack	Anantavarman Chodagong Deva	<b>Narshima Deva I</b> built the Sun temple at Konark.	Anantavarman built the Jagannath temple at Puri.
<b>Western Gangas</b> (AD 350-999)	Kolar, Talakal	Konganivarman Madhava	<b>Dunvrita</b>	Constructed Jain monuments at Sravanbelagola.
<b>Senas of Bengal</b>	Vikrampura, Vijaypura	Vijaysena	<b>Ballasena Lakshmansena</b>	They were overthrown by Deva dynasty.
<b>Hoysalas</b>	Dwarasamudra	Vishnu Vardhan	<b>Vira Ballal</b> defeated the Chalukyan ruler Somesvara IV.	Hoysala art and architecture was of a high standard. The minute carving of Hoysala temple is their most attractive feature.
<b>Rashtrakutas</b> (AD 750-1142)	Manyaket or Malkhed	Dantidurga (earlier served the Chalukyas of Badami)	<b>Amoghavarsha</b> He is compared to Vikramaditya in giving patronage to men of letters. He wrote the 1st Kannad Poetry, Kavi Rajamarg & also wrote Prashnottar Mallika. <b>Krishna-II</b> constructed Kailash temple at Ellora in Dravidian style. <b>Krishna III</b> set-up Pillar of victory and a temple at Rameshwaram.	Rashtrakutas are credited with the building of cave shrine of Elephanta. It was dedicated to Mahesh & Trimurti counts among the most magnificent art creations of India.
<b>Pallavas</b> (AD 560-903) of Tondainadu (land of creepers)	Kanchi	Simhavishnu	<b>Narasimhavarman-I</b> (AD 630-668) occupied Chalukyan capital at Vatapi and assumed the title Vatapikonda.	They were orthodox Brahmanical Hindus. Both the Chalukyas and Pallavas tried to establish their supremacy over land between Krishna and Tungabhadra.
<b>Chalukyas of Badami</b>	Vatapi (Badami)	Pulakesin I	<b>Pulakesin-II</b> He was contemporary of Harsha and was able to check Harsha in conquering Deccan, but was defeated and killed by Pallava ruler of Narasimhavarman-I. The Chinese pilgrim Hiuen Tsang visited his kingdom.	Many of the painting and sculptures of the Ajanta and Ellora caves were completed during Chalukyan Art developed the Deccan or Vesara style. They perfected the art of stone building, that is stones finally joined without mortar.
<b>Chalukyas of Kalyani</b>	Kalyani	Tailap II (defeated the Parmar king Munji)	<b>Somevara I</b> (AD 1043-1068) He shifted the capital from Manyket to Kalyani. <b>Vikramaditya IV</b> (AD 1070-1126) He started the Chalukya-Vikram era.	Bilhana, the writer of Vikramdevacharita and Mitakshara in Yagyavalkya Smriti, adorned the court of Vikramaditya IV.
<b>Yadavas</b>	Devagiri	Bhillana	<b>Ramachandra</b>	Ramachandra was defeated by Malik Kafur.

# MEDIEVAL INDIA

## The Rajput

- They emerged as a powerful force in Northern India in AD 9th and 10th centuries.
- **Origin :** Four of the Rajput clans claim to have descendant horn a mythical

figure that arose out of a sacrificial fire pit near Mount Abu, i.e. of Agnikula origin. They are:

- ✓ Chauhans of East Rajasthan.
- ✓ Pratihara Pariharas of South Rajasthan.
- ✓ Chalukvas/Solankis of

- Kathiawar.
- ✓ Parmars/Pawars of Malwa
- However, the most accepted theory is that Rajputs were of a foreign origin, who came as conquerors and settled in West India.
- The two main clans of Rajputs are
  - ✓ Surya Vansha (Sun family)
  - ✓ Chandra Vansha (Moon family)

### **Some Important Rajput Kingdoms**

Rajput Kingdom s	Capital(s)	Founder
Chauhan/Chahaman of Delhi-Ajmer	Delhi	Vasudeva
Pawar of Malwa	Ujjain, Dhar	Sri Harsha
Pratihara of Kannauj	Avanti, Kannauj	Nagabhatta I
Rashtrakuta of Malkhand	Manyakheta	Dantidurga (Dantivarman II)
Chalukya/Solanki of Kathiawar	Aniha/vada	Mularaja I
Kalchuri/Haihaya of Chedi	Tripuri	Kokkala I
Chandela of Jejakabhukti	Khajuraho, Mahoba, Kalinjar	Nannuk Chandela
Gadhwali/Rathor of Kannauj	Kannauj	Chandradeva
Tomars of Delhi and Haryana	Dhillika	—
Guhilota/Sisodiya of Mewar	Chittor	Bappa Rawal, Hammir I

### **Some Important Rajput Rulers**

- **Jai Chand** Gadhwali/Rathor 1169-94 AD) assisted Muhammad Ghori against Prithviraj Chauhan in the Second battle of Tarrain (1192), but was himself killed by Ghori in the battle of Chandawar (1194).
- **Prithviraj Chauhan** (1178-92) He was the Chahamana ruler of Delhi and Agra who fought two battles with Muslim invader Muhammad Ghori.
  - ✓ **First Battle of Tarrain** (1191): Prithviraj defeated Muhammad Ghori.
  - ✓ **Second Battle of Tarrain** (1192): Prithviraj was defeated and killed by Muhammad Ghori.
- **Bhoja Parmar** (1010-55) of Malwa: He was a great conqueror and a patron of literature and was also known as Kaviraj

### **Architectural Works**

- Kandariy Mahadeva temple at Khajuraho, built by Chandellas of Bundelkhand (AD 1000).
- Dilwara temple at Mount Abu (West Indian style of architecture) built by Siddharaja Solanki of Gujarat.
- Angkorvat Temple at Cambodia built by Suryavarman II. It is dedicated to Lord Vishnu and built on Dravidian model.
- Sun Temple at Konark (Orissa).

- Lingaraja Temple at Bhubaneshwar (Orissa).

### **Literary Works**

- Kathasaritasagar by Somadeva.
- Vikramdeva Charita by Bilhana (biography of Chalukya King Vikramdeva VI).
- Rajtarangini of Kalhana (history of Kashmir).
- Gita Govinda of Jayadeva (in Sanskrit).
- Chachanama, The history of Sindh.

## **Arab Conquest of Sindh**

**Md. Bin Qasim Invasion (AD 712):** Md. Qasim of Iraq was the first Muslim to invade India. He defeated the ruler of Sindh. Dahir and the province was given to Omayyad Khilafat.

## **TURKISH INVASIONS**

### **Mahmud of Ghazni—**

- Towards the close of the 9th Century AD, the vast empire of Arab broke up and the Turks who got the upperhand over the *Khalifas* of Baghdad, established many independant principalities. One of such Turk state was founded by Alaptigin with Ghazni as his capital in about AD 933.
- In those days, Punjab and the North-West of India were ruled by Jaipal of the Shahiya dynasty (Hindustani). Subuktigin, the ruler of Ghazni of that period, fought with Jaipal and defeated him.
- Mahmud Ghaznavi was the eldest son of Subuktigin, born in AD 971 and ascended the throne in AD 998.
- For India, the only memory of Mahmud is that of a plunderer and destroyer of temples. Mahmud is said to have made 17 raids into India. The initial raids were directed against the Hindustani rulers. In AD 1001, the Hindustani ruler Jaipal again was defeated by Mahmud.
- His son Anandapala succeeded the throne. A decisive battle between Mahmud and Anandapala was fought in AD 1008-09 at Waihind during his sixth expedition.
- In other expeditions, Mahmud plundered Nagarkot, Thaneshwar, Kannauj, Mathura and Somnath.
- He plundered Somnath temple in AD 1025 (his sixteenth raid).

- In AD 1026, Mahmud defeated the Jats. He died in AD 1030. The objective of Mahmud's expeditions was to plunder and loot. He was not interested in expanding his empire to India.

### Quick Digest

- ❖ Mahmud is considered as a hero of Islam by the medieval Muslim historians because of his stout defence against the Central Asian Turkis tribal invaders.
- ❖ Secondly, because he was closely associated with the renaissance of the Iranian spirit.
- ❖ A high water mark in the Iranian renaissance was reached with **Firdausi's Shah Namah**.
- ❖ He patronised three persons, contemporary to him: Firdausi (court poet), Alberuni (scholar) and Utbi (court historian).
- ❖ Alberuni wrote 'Kitab-ul-Hind.'

### Muhammad Ghori

- The Ghaznavi state was no longer powerful state after Mahmud Ghazni. His successors were weak which resulted into the emergence of a powerful empire called Seljuk empire. But towards the middle of the 12th century, another group of Turkish tribe man shattered the power of the Seljuk Turks.
- The power of the Ghurids increased under Sultan Alauddin, who earned the title the **World burner**, because he ravaged Ghazni and burnt it into the ground.
- The rising power of the Khawarizm empire severely limited the Central Asian ambition of the Ghurids.
- In 1173, Muizzudin Muhammad I (Muhammad Ghori) ascended the throne at Ghazni, while his elder brother was ruling at **Ghur**. Muizzudin Muhammad conquered **Multan** and Kutch.
- In 1178, he attempted to penetrate into **Gujarat** by marching across the Rajputana desert, but was completely rooted out by the Gujarat ruler.
- He realised the necessity of creating a suitable base in Punjab before venturing upon the conquest of India. He conquered **Peshawar, Lahore** and **Sialkot**.
- At that period, the Chauhan power had been steadily growing. Chauhans had captured Delhi from the Tomars around the middle of the century.
- At the age of 11, Prithviraj ascended the throne at Ajmer and began a career of conquest. He invaded the Chandellas of Bundelkhand in a battle near Mahoba.
- Both Prithviraj and Muhammad Ghori's attention towards the Punjab

and Ganga valley brought the two ambitious rulers into conflict. In the **First Battle of Terrain** (1191) the Ghori forces were completely rooted out by Prithviraj.

- It is said that **Jaichand**, the ruler of Kannauj (Gahadavala kingdom) did not help Prithviraj during the Second battle of Terrain because Prithviraj had abducted, Jaichand's daughter Sanyogita, who was in love with him.
- **Prithviraj Raso**, written by court poet of Prithviraj, Chand Bardai, depicts the life story of Prithviraj and his love story.
- The defeat laid the foundation of Muslim rule in India.
- Later on in 1194, Jaichand of Kannauj was also defeated at the Battle of Chandawar.
- Muhammad Ghori died in AD 1206, leaving the charge with Qutub-ud-din Aibak.
- The Sultanate of Delhi had five ruling dynasties with 34 kings.

### Battle of Terrain

- ❖ The Second Battle of Terrain (1192) is regarded as one of the turning points in Indian history. The better organised and well-prepared Turkish force defeated the Indian forces.
- ❖ Prithviraj was defeated by Muhammad Ghori. Prithviraj was allowed to rule over Ajmer for some time. But was executed on a charge of conspiracy after some time.

### **Causes of the Turkish Success**

- Political disunity among Rajput and internal rivalries.
- No Central Government.
- Unguarded frontiers, even after repeated attacks.
- Organised military and ambitious Turkish invaders.

## **The Delhi Sultanate**

### **The Ilbari or Slave Dynasty (1206-1290)**

- After Muhammad Ghori's death, all the Muslim rulers who ruled over India from AD 1206-1290 were either slaves or were descendants of the slave ruler. So, the dynasty is generally known as the Slave Dynasty.
- The dynasty is also called Ilbari Dynasty, as all the rulers of this dynasty except Aibak belonged to the Ilbari tribe of Turks.

### **Qutubuddin Aibak (1206-1210)**

- Originally a slave, Qutubuddin, because of his merit and loyal service, was rose to the post of Viceroy by Muhammad Ghori. After Ghori's death, Aibak ruled over **Delhi** and founded his dynasty.
- Lahore was His capital.
- For his generosity, he was given the title of **Lakh Baksh**
- He constructed two mosques **Quwwat-ul-Islam** at Delhi and Adhai Din ka Jhopra at Ajmer.
- He also began the construction of **Qutub Minar** in the honour of famous Sufi Saint **Khwaja Qutub-ud-Din Bakhtiyar Kaki**.
- Aibak was great patron of learning, and patronised writers like Hasan-ul-Nizami, author of Taj-ul-Massin and Fakhrudin, author of Tarikh-i-Mubarak-Shahi. He fell from the horse while playing *chaugan* (Polo) and died.

### **Aram Shah (AD 1210)**

After Qutubuddin's death, his son Aram Shah succeeded him. Aram Shah proved quite incompetent. Some of the nobles rose to the occasion and invited Aibak's son-in-law and Governor of Badaun, Iltutmish to ascend the throne. He deposed Aram Shah and secured the throne for himself.

### **Iltutmish (AD 1210-1236)**

- He is considered to be the greatest slave king and the real consolidator of the Turkish conquest in India.
- He made Delhi the capital in place of Lahore and was the son-in-law of Aibak.
- Iltutmish, during the early years of his reign, first consolidated his position by suppressing the revolts of the ambitious nobels.
- In AD 1215, he defeated **Yaldoz**, who established himself as the independent ruler of Ghazni. He sent expeditions against the Rajputs in Ranthambor, Jalor, Gwalior, Ajmer and Malva.
- During his period, the **Mongols** under their leader **Changez Khan** made their appearance for the first time in India. He saved Delhi Sultanate from the wrath of **Changez Khan** by refusing shelter to Khwarizm Shah, Jalaluddin Mangobanni, to whom Changez Khan was chasing.
- He got his authority (Sultanate of Delhi) recognised by the **Caliph of**

**Baghdad (khalifa)** as a member of world fraternity of Islamic states.

- He completed the construction of **Qutub-Minar**.
- He constituted a corp of 40 loyal slave **Amins**, known as **Turkan-i-Chahalgani** or **Chalisa**.
- He started *Iqta* system in Delhi Sultanate. This is an assignment of land in lieu of salary, which he distributed to his officers. Every **Iqtadar** had to maintain law and order, and collect revenue. After deducting his salary and the expenses of the government, he sent the surplus amount to the Central Government.
- He introduced the Silver coin *Tanka* and Copper coin *Jital*.
- He patronised Minhaj-ul-Siraj, author of *Tabaqat-i-Nasiri*.
- He is called the *Father of Tomb Building* (built Sultan Garhi in Delhi).

### **Rukunuddin Firoz (AD 1236)**

- Iltutmish appointed his daughter Raziya as his successor.
- But most of the nobles could not reconcile themselves to the idea of a woman ruling over them and so they placed one of his son Rukunuddin Firoz on the throne. He was a worthless person who left the work of the government in the hand of his mother, Shah Turkan.
- Finally throne was given to Raziya when he was out of the capital to curb a rebellion in Awadh against him.

### **Raziya Sultan (AD 1236-1240)**

- She was the first and the last Muslim woman ruler of Medieval India.
- Raziya successfully crushed the rebellions that occurred in Multan Lahore and Jhansi. The *wazir* Nizam-ul-Mulk Junaidi, who had opposed her elevation to the throne, was defeated by Raziya.
- She also sent an expedition against Ranthambor to control the Rajput.
- She discarded the female apparel and started holding the court with her face unveiled.
- Her attempt to create a party of nobles loyal to her and the appointment of a non-Turk, Yakut to the high office led to opposition.
- She herself led an expedition against the rebellious Governor of Lahore and forced him to acknowledge her suzerainty.

### **Ghiyasuddin Balban (1265-1286)**

- Balban ascended the throne in 1265, after killing all members of Ilutmish's family. He himself was a member of the chalisa or chahalgani, but he broke the power of chahalgani and restored the restored of the crown.
- He created a strong centralised army and established the military department 'Diwan-i-arz'. He ordered the separation military affairs from finance apartment (*diwan-i-wazarat*). He also appointed spies.
- He declared the Sultan as the 'Representative of God on the Earth'. The Persian court model influenced Balban's conception of kingship. He took up the title of **Zil-i-Ilahi** (Shadow of God) and impressed upon the people that king was the deputy of God (*Niyabat-i-Khudai*).
- He refused to laugh and joke in the court, and even gave up drinking wine. To emphasise that the nobles were not his equals. He introduced Persian etiquettes like **Sijda** and **Paibos**. (prostration before and kissing the monarch's feet).
- Balban started the festival of Nauroz. He adopted the policy of Blood and Iron
- He was a patron of Persian literature, and showed special favour to Amir Khusro.

### **Kaiqubad (AD 1287-90)**

Grandson of Balban, he was put on the throne by Fakruddin, the kotwal of Delhi. But, Kaiqubad was killed by the Khalji rulers. This led to the end of Ilbari dynasty and establishment of the Khalji dynasty.

## **The Khalji Dynasty (AD 1290-1320)**

A group of Khalji nobles led by Jalaluddin Khalji, overthrew the incompetent successors of Balban in AD 1290. The Khalji rebellion was welcomed by the non-Turkish nobility. The Khaljis did not exclude the Turks from high offices, but ended the Turkish monopoly.

### **Jalaluddin Khalji (AD 1290-1296)**

- He was the first ruler of the Delhi Sultanate to clearly put forward the view that the state should be based on the willing support of the governed and that since the large majority of the people in India were Hindus, the state in India could not be a truly Islamic state.

- He adopted the policy of tolerance and avoiding harsh punishment.
- The most important aspect of his reign was the invasion of Devagiri in 1294, by his nephew and son-in-law Alauddin Khalji.
- He married his daughter to Ulugh Khan, a descendant of Changez Khan to win his goodwill.

### **Alauddin Khalji (1296-1316)**

- He came to the throne by treacherously murdering his uncle and father-in-law Jalaluddin Khalji.
- He proclaimed himself as Sultan winning over the nobles and soldiers to his side by the lavish use of gold.
- He massacred the rebellious nobles, relatives, family members and the Mongols who had settled in Delhi. Alauddin gave harsh punishment even to the wives and children of all nobles.
- Alauddin framed a series of regulations to prevent the nobles from conspiring against him. They were forbidden to hold banquets of festivals or to form marriage alliances without the permission of the Sultan.
- To discourage the festival parties, he banned the use of wines and intoxicants. He also instituted a spy service to keep himself informed of all that the nobles said and did.
- He firstly conquered Gujarat and married Raja's wife Kamla Devi. He acquired Malik Kafur from there.
- Then he captured Ranthambhor, Chittor and Malwa.
- Malik Kafur was sent towards South to expand the territory.
- He defeated Yadava king of Devagiri, Ramchandra Deva, Kakatiya king Pratap Rudra Deva I, Hoyasala king of Dwar, Samudra Vira Ballala III and Pandyas of Madurai (King Mahavarman Kulshekhar).
- He is said to have reached as far as Rameshwaram, where he built a mosque.
- Alauddin strengthened the North-West frontier, under his trusted commander Ghazi Malik.

### **Administrative Reforms of Alauddin Khalji**

- First Sultan to have a permanent army. He paid soldiers in cash.
- In order to avoid the problems created by the nobles, Alauddin issued four important ordinances.

- Confiscation of religious endowments and free grants of lands.
- Reorganised the spy system.
- Prohibited the use of wine and intoxicants.
- Laid down that the nobles should not have social gatherings and they should not inter-marry without his permission.
- He introduced the system of *Dagh* or branding the horses and *Chehra* or detailed description of each soldier.

#### **Revenue Reforms of Alauddin Khalji**

- Measured the cultivable land and fixed the land revenue. *Bishwa* was declared to be the standard of measurement.
- The state demanded half of the produce.
- The post of special official called **Mustakharaj** was created for the purpose of collection of revenue.
- Alauddin is credited to have built many forts, and the most important of them is **Alai Fort**.
- He also constructed the **Alai Darwaja**, the entrance gate of the Qutub Minar.
- He also built the palace of thousand pillars called '*Hazar Situn*', Hauz Khas and Jamait Khana Mosque and built his capital at Siri. He adopted the title **Sikandar-i-Sahni**.
- He was the first Turkish sultan who separated religion from politics, proclaimed kingship knows no kinship.
- He patronised many great poets in court like Amir Khusro and Mir Hasan Dehlvi.

#### **Market/Economic Reforms**

- ❖ *Alauddin controlled the market by many regulations*
- ❖ *Fixed the cost of all commodities.*
- ❖ *He set-up three markets at Delhi.*
- ❖ *All goods for sale were brought to the open market called 'Sarai-Adf.*
- ❖ *He established the market control department under a minister called diwan-i-riyasat.*

#### **Successors of Alauddin Khalji**

- After the death of Alauddin in 1316, Malik Kafur *Hazar Dinari* seized the throne, but he could not rule for long and nominated Shihabuddin (Alauddin's sixteenth son as king).
- Shihabuddin was deposed by Qutbuddin Mubarak Shah (1316-20).
- Nasiruddin Shah (AD 1320) killed Mubarak Shah and himself was killed by Ghazi Malik the Governor of Dipalpur.

- This ended the 30 years rule of Khalji dynasty and established the Tughlaq dynasty on throne.

## **The Tughlaq Dynasty**

**(AD 1320-1414)**

#### **Ghiyasuddin Tughlaq-(AD 1320-1325)**

- Ghiyaz Malik or Ghiyasuddin Tughlaq was the founder of Tughlaq dynasty or the dynasty of the Qaraunah Turks. He was the first Sultan of Delhi who took up the title of *Ghazi* or slayer of the infidels.
- He liberalised Alauddin's administrative policies and took a keen interest in construction of canals and formulated the famine policy. The judicial and police arrangements were made efficient.
- He gave up the land measurement system and started the *Batai System* or sharing of crops. Efficient postal service was restored.
- He sent his son, Jauna Khan to re-establish the authority in Warangal (Kakatiya) and Madurai (Pandyas).
- He built the city of *Tughlagabad* near Delhi and made it his capital.
- He died in 1325, after a fall from a high raised pavillion. *Ibn Battuta*, the moroccan traveller, who was in Delhi at time, opined that his death was due to sabotage arranged by his son, Jauna Khan (Muhammad-bin-Tughlaq).

#### **Muhammad-bin-Tughlaq (AD 1325-1351)**

- Jauna Khan ascended the throne under name Muhammad-bin-Tughlaq. He was one of the most extraordinary king who ever sat on the throne of Delhi. He was an expert in Arabic, Persian Astronomy, Philosophy, Maths and Medicine.
- He applied his rational and innovative mind in every aspect of administration but achieved little success as he was very hasty in nature.

#### **Five Ambitious Projects of Muhammad-Bin-Tughlaq**

*His five ambitious projects were:*

- ✓ ***Taxation in the Doab (1326)***—  
The Sultan made an ill-advised financial experiment in the Doab between the Gangas and the Yamuna. He not only increased the rate of taxation, but also revived and created, some additional Abwabs or Cessess.
- ✓ ***Transfer of the Capital (1327)***—  
The most controversial step was the Transfer of capital from Delhi to Devgiri.

Renamed Devgiri as Daulatabad.

✓ **Introduction of Token Currency (1329)—**

Muhammad -bin-Tughlaq decided to introduce bronze coin, instead of the silver coin which would have the same value.

✓ **The Khurasan Expedition (1329)—**

Under the vision of Universal Conquest, he decided to conquest Khurasan and Iraq and mobilised a huge army for this purpose.

✓ **Qarachil Expedition (1330)—**

This expedition was launched, in Kumaon hills in the Himalayas, allegedly to counter Chinese incursions. The attack was successful, but when the rainy season set in, the invaders suffered terribly. He died in **Thatta** (Sind), while campaigning against a Turkish slave Taghi.

**Diwan-i-Kohi**

A new department of agriculture *Diwan-i-Kohi* was set-up. He built the fortress of Adilabad and the city of "Jahanpanah".

**Ibn-Battuta**

The famous Moroccan traveller Ibn-Battuta came to Delhi in 1334 and acted as the Qazi of the capital for 8 years. He recorded the contemporary Indian scene in his *Safranamah* (*Raheta*).

**Firoz Shah Tughlaq (1351-1388)**

- Firoz Tughlaq faced the problem of preventing the imminent break up of Delhi Sultanate. So he tried to appease the nobility, the army and the Battuta theologians.
- He made the *Iqta system* hereditary.
- He extended the principle of heredity to the army. The soldiers were not paid by cash but by assignments on land revenue of villages (*Vajeha*). This technique led to many abuses.
- In order to encourage agriculture, the Sultan paid a lot of attention to irrigation. He repaired a number of canals. The first canal was from Sutlej to Ghaggar. The second canal carried water from Yamuna to Hissar. He imposed *Haq-i-Sharb* or *Hasil-i-Sharb* i.e. water tax.
- He encouraged the practice of slavery and selected young boys from the conquered territory for the purpose. *Diwan-i-Bandagon* was created as the department for slaves.
- Built new towns of Fatehabad, Hissar, Jaunpur (in memory of Muhammad -Bin- Tughlaq) and Firozabad. During his Bengal campaign, he renamed Ekdala as **Azadpur and Pandua as Firozabad**.

- He brought two pillars of Ashoka from Topara and Meerut, to Delhi and repaired Qutub-Minar when it was struck by lightning.
- He established a hospital at Delhi, known as *Darul-Shifa*.
- A new department of *Diwan-i-Khairat* was set-up to make provision for the marriage of poor girls.
- Introduced two new coins - *Adha* (50% *Jital*) and *Bikh* (25% *Jital*).
- Mathura was destroyed during his period.
- He made **Jaziya** a separate tax and he imposed this tax upon the Brahmins for the first time in the history of Sultanate.
- **Barani**, the historian, was in his court. He wrote *Tarikh-i-Firozshahi* and *Fatua-i-Jahangiri*.
- He died in AD 1388.

**THE LATER TUGHLAQS (1388-1414)**

- After Firozshah Tughlaq, Ghiyasuddin Tughlaq Shah-1 succeeded. He was repalced by Abu **Bakr Shah** in AD 1389.
- The states of Malwa, Sharqi (Jaunpur) and Gujarat broke away from the Sultanate.
- Abu Bakr was replaced by Nasiruddin Muhammad in AD 1390. Nasiruddin Muhammad was replaced by **Ala-ud-din Sikandar Shah** for a brief period in 1394, but regained the throne after Sikandar's death.
- He ruled till AD 1412. During his period, Timur invaded India.

**Timur's Invasion**

- Timur, the head of the Chaghtai Turks and the ruler of Mongols in (Central Asia) invaded India in 1398, during the reign of Nasiruddin Muhammad Tughlaq.
- He robbed people. He is said to have inflicted on India more misery, than have ever before been done by a conquerer in single invasion.
- Timur nominated **Khlzr Khan** to rule over Punjab and himself returned to Central Asia. He died on his way to conquer China in AD 1404.

**Taxation System**

Firoz Shah Tughlaq introduced new system of taxation according to the Quran.

- ❖ **Kharaj** : A land tax of  $1/10^{\text{th}}$  of the procedure of land.
- ❖ **Zakat** : 2.5% tax on property (by Muslim only).
- ❖ **Jaziya** : A tax by non-Muslims (even by Brahmins)
- ❖ **Khams** :  $1/6^{\text{th}}$  of the booty captured during war.

### **THE SAYYID DYNASTY (AD 1414-50)**

- Khizr Khan (1414-21) founded the Sayyid dynasty and claimed to have descended from the prophet of Islam.
- He helped Timur in his invasion, so was given the governorship of Lahore.
- Khizr Khan took the title of Rayat-i-Ala and not of a king. The coins were struck and *Khutba* was read in the name of Timur and his successor Shahrukh.
- Khizr Khan's three successors were incapable rulers. Mubarak Shah (1412-33) led successful expeditions against Mewatis, Katehars and the Ganges Doab area. He was killed and deposed by the nobles.
- **Muhammad Shah** (1434-43) ruled on a very small area, rest being governed by nobles. **Alauddin Shah Alam** (1443-1451) was the last Sayyid king who retired as a coward, descending in favour of Bahlol Lodhi. Thus, the Sayyid Dynasty was replaced by the Lodhi Dynasty.
- Yahya-bin-Ahmed-bin-Abdullah Sirhindī wrote *Tarikh-i-Mubarak Shahi* (History of Muhammad Shah of Sayyid Dynasty).

## **The Lodhi Dynasty (AD 1451-1526)**

Considered as the first Afghan dynasty of India. They were ruling over Sirhind, while Sayyids ruled over India.

### **Bahlol Lodhi (AD 1451-1489)**

- Founder of Lodhi dynasty in India.
- Revived Sultanate to quite an extent.
- Annexed entire Sharqi kingdom and issued Bahlol coins.
- Never sat on the throne, used to sit on carpets alongwith Amins.

### **Sikandar Lodhi AD 1489-1517**

- Noblest of the three Lodhi rulers, real name was Nizam Khan (Son of Bahlol Lodhi). Conquered Bihar and Bengal. In AD 1504, he built a new city Agra and made it his capital.
- He was a Muslim fanatic and broke the sacred images of Jwalamukhi temple at Nagarkot and ordered the temple of Mathura to be destroyed.
- He set-up an efficient espionage and judiciary system and introduced the system of auditing of accounts.

→ He encouraged agriculture. For measurement of land, he introduced *Gaj-i-Sikandari*.

→ He was a poet and wrote verses in Persian under the pen-name of Gulrukhi.

→ He repaired the Qutub Minar.

### **Ibrahim Lodhi (1517-1526)**

- Ibrahim Lodhi arrested the absolute power of the Sultan. As a result, some of the nobles turned against him. At last, Daulat Khan Lodhi the Governor of Punjab, invited Babur to overthrow Ibrahim.
- He captured Gwalior and was defeated by Rana Sanga of Mewar.
- He was defeated and killed at the hands of Babur in the First Battle of Panipat in AD 1526. This marked the end of the Delhi Sultanate.

### **Causes of the Decline of the Delhi Sultanate**

- ❖ Despotic, autocratic, and military forms of government.
- ❖ Wars of succession.
- ❖ Financial instability.
- ❖ Vastness of the empire and improper administrative control.
- ❖ Unsuccessful experiments of Muhammad-bin-Tughlaq, Timur's invasion.
- ❖ Incompetent nobility and increase in number of slaves during Firoz Tughlaq.

## **The Sultanate Administration**

- The Turkish Sultans in India declared themselves *Lieutenants of Painful*, which meant that they included the name of Caliphate of Baghdad in *Khutba*, but he had only moral position.
- Political, legal and military authority was vested in the Sultan. He was responsible for administration.
- He was the Commander-in-Chief of the military forces.
- The country was divided into *Iqtas*, which were distributed among the nobles, officers and soldiers for the purpose of administration and revenue collection. *Iqtadars* could be transferred.
- The key figure in the administration was *Wazir*. In the earlier period, the *Wazir* was primarily a military leader, but now he began to be considered more as an expert in the revenue affairs and supervised the collection of income and expenditure.
- The head of military department was

called *Ariz-i-Mamalik*. The responsibility of Ariz was recruitment, payment and inspection of army.

- *Diwan-i-Risalat* dealt with religious matters. It was presided over by a *Chief Sadr* or *Chief Qazi*. The *Qazi* dispensed civil law based on Muslim law (*Sharia*).
- *Diwan-i-Insha*, headed by *Dahir-i-Mumalik*, managed the royal correspondence.
- The rulers posted intelligence agents called *Barids* in different parts of the empire to keep themselves informed.
- *Wakil-i-Dar* was responsible for the maintenance of proper decorum at the court. The province were divided into *Shiqs* and headed by *Shiqdars*. The next unit was *Parganas*, groups of hundred villages, headed by the *Chaudhary*. *Pargana* was also headed by *Amil*. *Khuts* were the landowners.

## Cultural Developments

### Art and Architecture

- Arches and domes are a special feature of Muslim architecture. This required stronger cement, thus, finer quality of mortar became widespread in North India.
- For decoration, the Turks used geometrical and floral designs with verses from the *Quran*. Hindu motifs like bell, lotus and swastik etc were also used e.g. *Adhai Din ka Jhopra* at Ajmer, tomb of Ghiyasuddin Balban in Mehrauli (Delhi).

## Other Developments

- **Quwwat-ul-Islam** mosque, Delhi: Qutubuddin Aibak.
- **Adhai din ka Jhopra**, Ajmer : Qutubuddin Aibak.
- **Alai Darwaja**, Qutub Minar : Alauddin Khalji
- **Jamat Khan Masjid** at dargah of Nizamuddin Auliya : Alauddin Khalji
- **Siri** (city), **Hauzkhlas tank**, **Hazar Situn** : Alauddin Khalji.
- **City of Tughlaqabad** : founded by Ghiyasuddin Tughlaq.
- **City of Jahanpanah and Adilabad fort** : Muhammad-bin-Tughlaq.
- **City of Jaunpur Hissar, Firozabad**: Firoz-shah Tughlaq.

### Literary Sources

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Tarikh-i-Firozshahi	Ziauddin Barni
Gita Govind	Jayadeva
Mitakshara	Vigyaneshwara
Dayabhaga	Jimuta Vahana
Ashiqa and Khizr khan	Amir Khusro
Amuktamalyada	Krishnadeva Raya
Futuhat-i-Firozshahi	Firoz Shah
Parasana Kaghava	Jayadeva
Khamsah	Amir Khusro
Miftahul Futuh	Amir Khusro

### Music

- New musical modes and instruments like *Rabab* and *Sarangi*, were introduced.
- Amir Khusro introduced many Persian Arabic *ragas*. He also invented the *Sitar*.

### Paintings

Arabs introduced paper in the 15th century which encouraged painting.

### Literature

- Many Sanskrit works like *Rajatarangani* and *Mahabharata* were translated into Persian. Udayraja wrote *Raja Vinoda* on Mahmud Begarma.
- Zai Nakshabi translated Sanskrit stories into Persian under the title *Tuti Namah*.
- Merutanga wrote *Prabandha Chintamani*.

#### Amir Khusro

- ❖ He was a Persian poet (AD 1253-1325) associated with royal courts of more than seven rulers of the Delhi Sultanate.
- ❖ He was also a musician and invented the *Sitar*. He innovated *Khayal* (a style of singing).
- ❖ In his book *Tarikh-i-Alai*, he gave an account of the conquests of Alauddin Khalji.
- ❖ His book *Ashiqa*, contains the love story of Deval Rani and Khizr Khan.
- ❖ In his book *Nur-Siphirat* (nine skies), he gave the story of Sultan Mubarak Shah. He also lived in the court of Ghiyasuddin Tughlaq and wrote *Tughlaqnamah*.
- ❖ Khusro is also known as *Tuti-i-Hind* or *Parrot of India*.

## The Mughal Empire

### **Babur (AD 1526-1530)**

- He was the descendant of Timur on his father's side and Changez Khan on his mother's side. His family belonged to the Chagtaï section of the Turkish race and were commonly known as Mughals.

- Originally ruled over Ferghana (Afghanistan).
- He was invited to attack India by Daulat Khan Lodhi, Subedar of Punjab, Alam Khan Lodhi, uncle of Ibrahim Lodhi and Rana Sanga.
- He was successful in his fifth expedition. In the First Battle of Panipat in AD 1526, he finally defeated Ibrahim Lodhi.
- Defeated Rana Sanga of Mewar in Battle of Khanwa in 1527. Babur took the title of 'Ghazi' after this.
- Defeated another Rajput ruler Medini Rai in the Battle of Chanderi in AD 1528.
- In AD 1529, he defeated Muhammad Lodhi (uncle of Ibrahim Lodhi) in the Battle of Ghaghra.
- The battle of Ghaghra was the 1st battle which was fought on land and water simultaneously in medieval India.
- Babur was the first ruler to entitle himself 'Badshah'.
- He wrote Tuzuk-i-Babari or Baburnama in Turkish. It was translated into Persian by Abdul Rahim Khan-i-Khanan and in English by Madam Bebridge.
- His victory led to rapid popularisation of gunpowder and artillery in India.
- After the Kushanas, he was the first to have brought Kabul and Kandhar into the Indian empire.
- He died in AD 1530- and was buried at Aram Bagh in Agra. Later his body was taken to Aram Bagh at Kabul.

### **Humayun (AD 1530 - 40 and 1555 -56)**

- He was the son of Babur.
- Babur had divided his empire among the three brothers of Humayun (Kamran, Hindal and Asakari). So, Humayun had to face real problems ascending to the throne.
- His first campaign was against Kalinjar.
- In AD 1533, the first siege of Chunar and the March of Gaur was stopped by Jalal Khan, Sher Khan (Sher Shah) offered nominal submission by sending his son Qutb Khan to Humayun's court.
- **The Battle of Chausa (1539)** was fought between Sher Shah and Humayun's army. Humayun was badly defeated and escaped. He was saved by Nizam.
- **The Battle of Kannauj (Bilgrama) (1540)** : Humayun was again defeated

- by Sher Shah and had to flee.
- He passed nearly 15 years in exile. He wandered in Sindh during the reign of Shah Hussain Arghuna, and then reached the Iranian Court.
- He got a chance to return in AD 1555. By that time, Sher Shah and his son Islam Shah, who ruled upto 1553, had died. Muhammad Adil Shah was fond of pleasure and the entire affairs of his state were governed by Hemu, his minister.
- Bairam Khan, his most faithful officer helped him. The Mughals occupied Lahore without any march towards Delhi. After the Battle of Machhivara against the Afghans, and Battle of Sirhind against Sikandar Shah, Humayun's second coronation was organised. In AD 1556, he fell from the stairs of the library (Sher Mandal, Delhi) and died. Dinpanah was his second capital.

### **Akbar (AD 1556 -1605)**

- Akbar was born to Hamida Banu Begum at Amarkot in Rana Veersal's palace in AD 1542.
- Akbar was 14 years old when he was crowned at **Kalanaur** in 1556. Akbar already had shown his calibre at the battle field, when he captured Sirhind from Sikandar Shah, AD 1555.
- Bairam Khan represented him in the Second Battle of Panipat in AD 1556 against Muhammad Adil Shah Sur's Wazir, Hemu. Akbar defeated Hemu and reoccupied Delhi and Agra.
- Between 1556-1560, Akbar ruled under Bairam Khan's regency. The fort of Gwalior, Jaunpur, Ajmer and Ranthambore were successfully occupied. Later, Akbar asked Bairam Khan to proceed to Mecca. On the way near Patna, Bairam Khan was murdered.
- He also ended the interference from the Petticoat Government. (1560-62) represented by Maham Anaga and Adham Khan's Junta.
- Akbar conquered Malwa in AD 1561, defeating Baz Bahadur. He was later made the Mansabdar, to honour his skill as a musician.
- Akbar's earliest campaigns was against Rani Durgawati of Garh-Katanga (Gond and Rajput principalities).
- The two powerful forts of Rajasthan-Ranthambor and Chittor (Rana Udai Singh guarded by Jaimal) were captured by the Mughals.

- Akbar's Deccan campaign began with the siege of Ahmednagar defended by Chand Bibi.
- Akbar's East campaign was against Asirgarh, resulting into the annexation of Khandesh (1601).
- Akbar followed the policy of reconciliation with the Rajputs. In AD 1562, he married the eldest daughter of Raja Bharmal of Jaipur, Harakha Bai.
- In 1570, he married princesses of Bikaner and Jaisalmer. 1584. Prince Salim was married to the daughter of Raja Bhagwan Das.
- He won Gujarat in 1572. In order to commemorate his victory of Gujarat, Akbar built **Buland Darwaja** at Fatehpur Sikri.
- Raja Maan Singh conquered Bihar, Bengal and Orissa for him.
- In 1586, Akbar conquered Kashmir and in 1593, he conquered Sindh.
- At the time of Akbar's death in AD 1605, his empire included Kashmir, Sindh, Kandahar and extended as far as the Godvari in the Deccan.
- He was buried at Sikandara near Agra.

### **Navaratnas in Akbar's Court**

#### ***Abul Fazal:***

*He was the Wazir of Akbar. He wrote the Akbarnam-ah and also led the Muahal imperial army in its war in Deccan.*

#### ***Faizi Abul:***

*Fazal's brother and historian in Akbar's court. His famous work Lilavati is on Mathematics. Akbar appointed him as a teacher for his son.*

#### ***Tansen:***

*Believed to be one of the greatest musicians of all time. He was born to a Hindu family. He served as the court musician to King Ramchandra of Mewar and was sent to Akbar's court. He accepted Islam at the hands of great Sufi saint Shaikh Muhammad Ghaus of Gwalior. It was believed that Tansen made miracles, such as bringing rain and fire through his singing of the ragas, such as Megh Malhar and Deepak.*

#### ***Birbal:***

*Courtier in the administration of Akbar. His actual name was*

***Mahesh Das.*** *He was conferred the title of Raja by Akbar. He frequently had witty and humorous exchanges with Akbar.*

***Raja Todarmal:*** *He was Akbar's Finance Minister. He introduced standard weights for measurement and undertook revenue districts. His revenue collection arrangement came to be called as **Todarmal's Bandobast**.*

*His systematic approach to revenue collection became a model for the future Mughals as well as the British.*

#### ***Raja Man Singh:***

*He was the Raja of Amber, a Mansabdar and a trusted General of Akbar. He was the grand son of Akbar's father-in-law Bharmal and the adopted son of Raja Bhagwan Das. He assisted Akbar in many battles including the well known **Battle of Haldighati**.*

#### ***Abdul Rahim Khan-e-Khana:***

*He was a poet and the son of Bairam Khan, known for his Hindi couplets.*

***Faqir Azio Din:*** *He was the chief advisor of Akbar, sufi mystic*

#### ***Mullah Do Plaza:***

*He was among the Mughal emperor's chief advisor*

### **Important Aspects of Akbar's Rule**

- Akbar reorganised the central machinery of administration, on the basis of division of power between various departments.
- He abolished the Jaziya and pilgrimage tax, and the forcible conversion of prisoners of war. The use of beef was also forbidden.
- He believed in Sulh-i-Kul, that is peace for all.
- He built an **Ibadat Khana** at Fatehpur Sikri to discuss religious matters. He invited many distinguished persons, such as Purshottam Das (Hindu) Maharaji Rana (Parsi), Harivijaya Suri (Jain), Monserate and Aquaviva (Christian).

- To curb the dominance of the *Ulema*, Akbar introduced a new *Khutba* written by Faizi and proclaimed *Mahzarnamah* in 1579, which made him the final interpreter of Islamic law (*Mujtahid Iman-i-Adil*), in case of any controversies.
- It made him *Amir-ul-Momin* (leader of the faithful) and *Amir-i-Adil* (a just ruler).
- His liberation is reflected again in the pronouncement of *Tauhid-i-Ilahi* or *Din-i-Ilahi*, which propounded Sufi divine monotheism. Birbal, Abul Fazl and Faizi joined the order.
- Akbar established the painting *karkhana*, headed by Abdus Samad.
- Ralph Fitch (1585) was the first Englishman to visit Akbar's court.
- Abul Fazal wrote '*Akbarnamah*', the appendix of which was called *Ain-i-Akbari*.
- His land revenue system was known as Todarmal Bandobast or *Zabti system*.
- *Mansabdari System* was another feature of administration during Akbar's reign to organise the nobility as well as the army. He was the first Mughal ruler to separate religion from politics.
- Sufi saint Shaikh Salim Chisti blessed Akbar with a son who was named Salim (Jahangir). Akbar shifted his court to Fatehpur Sikri from Agra, in honour of the saint.
- Birbal was killed in the battle with the Yusufzai tribe (1586).
- Abul Fazal was murdered by Bir Singh Bundela (1601). In 1579, Akbar issued '*Decree of Infallibility*'.
- Persian was made the official language of Mughal empire.
- He culminated '*Din-i-illahi*', which recognised no prophets.

### **Maharana Pratap**

A Rajput ruler of Mewar, he belonged to the Sisodia clan of Suryavanshi Rajputs. He was a son of Udai Singh II. In 1568, during the reign of Udai Singh II, Mewar was conquered by Akbar.

Battle of Haldighati was fought on 18th June, 1576, in which Maharana Pratap was defeated by Akbar's army, led by Raja Maan Singh. Maharana had to flee the field on his trusted horse-Chetak. Thereafter, Pratap had to retreat into the Aravallis, from where he continued his struggle through the tactics of guerilla warfare. Rana Pratap died of injuries sustained in a hunting accident.

### **Jahangir (AD 1605-1627)**

- Akbar's eldest son, prince Salim assumed the title of *Nuruddin Muhammad Jahangir* and ascended the

- throne.
- He was born at Fatehpur Sikri near Agra in 1569. He was given a proper education by his tutor Rahim Khan Khankhana.
- In AD 1585, he married **Manbai**, the daughter of his maternal uncle Raja Bhagwan Das.
- In AD 1587 he married **Jodhabai** or Jagat Gosain, the daughter of Uday Singh, who gave birth to prince Khurram (Shahjahan). He mostly lived in Lahore, which he adorned with gardens and buildings.
- The eldest son of Jahangir, Khusro revolted against him, but was suppressed. Khusro received patronage of Guru Arjun Dev (5th Sikh Guru). Guru Arjun Dev was executed for his blessings to the rebel prince.
- **Rana Amar Singh** (son of Maharana Pratap) of Mewar, submitted before Jahangir in AD 1615. Rana Amar Singh was made a *Mansabdar* in Mughal court.
- His greatest failure was loss of Kandahar to Persia in 1622.
- Jahangir's wife Nurjahan (daughter of Itamad-daulah) exercised tremendous influence over the state affairs. She was made the official Badshah Begum.
- Coins were struck in her name and all royal *farmans* bore her name.
- She got high positions for her father (Itamaduddaulah) and her brother (**Asaf Khan**).
- He restored Muhammad faith and prohibited the sale of Tobacco.
- Nurjahan married her daughter by Sher Afghani to Jahangir's youngest son, Shahryar and she supported him for the heir apparent.
- Jahangir's military general, Mahabat Khan revolted and abducted him but Nurjahan saved him due to her diplomatic efforts.
- He was justice loving, a huge bell with a chain of 30 yards was placed at the gate of royal palace in Agra and anybody who sought justice from the emperor had to strike the bell. This bell was called *Zanzir-i-Adil*.
- Jahangir faced a formidable opponent in Malik Amber of Ahmednagar.
- Captain Hawkins (1608-11) and Sir Thomas Roe (1615-1616) visited Jahangir's court.
- **Pietra Valle**, the famous traveller,

came during his reign.

- Production of Tobacco (brought by the Portuguese) started in his reign.
- He was buried at Lahore.
- He wrote his autobiography, *Tuzuk-i-Jahangiri* in Persian.

### **Mehrunnisa**

*Nurjahan's actual name was Mehrunnisa. She was the widow of Sher Afgani. Jahangir married to her and conferred the title 'Nurjahan' to her.'*

### **Shah Jahan (AD 1628-58)**

- Born to Jodhabai or Jagat Gosain in Lahore in 1592. His real name was Khurram. He was the youngest prince to be appointed as the Governor of Deccan, at the age of 15.
- In AD 1612, he got married to Arjamand Bano Begum (known as Mumtaz Mahal), daughter of Asaf Khan
- He marched against Khan Jahan Lodhi the Governor of Deccan and Jujhar Singh Bundela, the independent ruler of Bundelkhand.
- Shah Jahan's policy of annexing Deccan was successful. Ahmednagar was annexed while Bijapur and Golconda accepted his suzerainty.
- The Portuguese established their control over Satgaon, through a Shahi firman. They started misusing their authority. Shah Jahan ordered Qasim Khan in 1532 to drive the Portuguese out of Hugli.
- In 1639, Shahjahan secured Kandahar and immediately fortified it. But Persia wrested Kandahar from Mughals in 1649. Shahjahan failed to recover Kandahar.
- Shahjahan was the second Indian ruler to invade Central Asia.
- Two French travellers : **Bernier** and **Tavernier** and the Italian traveller **Nicolo Manucci** visited during his reign. **Peter Mundi** described the famine that occurred during Shahjahan's reign. His reign is considered as the Golden age of the Mughal empire.
- The last 8 years of Shahjahan were very painful, because of the brutal war of succession between his four sons.
- He was imprisoned by his son Aurangzeb in Agra fort and died in captivity in AD 1658. He was buried at Taj Mahal (Agra) besides his loving wife.

### **War of Succession**

- Among Shahjahan's four sons, the eldest son Dara Shikoh was the

Governor of Punjab, Shuja was Governor of Bengal, Aurangzeb was Governor of Bengal and Murad was Governor of Gujarat.

- **Battle of Bahadurgarh** February 1658, was fought between Shuja and Dara, Shuja was defeated.
- **Battle of Dharmat April 1658**, where combined forces of Aurangzeb and Murad, defeated Dara.
- **Battle of Samugarh May 1658**, Dara led Mughal forces on behalf of Shahjahan against Aurangzeb. In this decisive battle, Shahjahan was put into prison by Aurangzeb in the Agra fort.
- **Battle of Khanjawa December 1658**, between Aurangzeb and Shuja. Shuja was defeated and fled to Arakan.
- **Battle of Devtrai March 1659**, Dara was defeated and executed by Aurangzeb. His dead body was paraded on the streets of Delhi.

### **Aurangzeb (AD 1658-1707)**

- He was the third son of Shahjahan born in Ujjain.
- Aurangzeb, made the victory of Deccan in 1636. Aurangzeb's first tenure was upto 1644.
- Aurangzeb's second term as Viceroy in Deccan began in 1653 and continued until 1658.
- He took the title of '**Alamgir**' in 1659. He was called a **Zinda pir** or the living saint.'
- Under him, the Mughal empire reached its greatest extent and the largest single state ever known in India.
- He forbade the inscription of *Kalma* on the coins, also forbade Sati and Jharokha-darshan. He ended the celebration of *Nauroz* (singing in the court) and in 1679, reimposed *Jaziya*.
- Mutasib (regulation of moral conduct) were appointed. He ended the use of almanacs and weighing of the emperor. Aurangzeb compiled the *Fatwa-i- Alamgiri*.
- The Hindu *Mansabdar*, however, maintained their high proportions during his rule.
- Thus, the Mughal empire stretched from Kashmir in the North to Jinji in the South and from Hindu Kush in the West to Chittagong in the East.
- Aurangzeb died in AD 1707 and was buried at Khuldabad (Daulatabad) near Aurangabad.
- He built **Bibi ka Maqbara**', similar to

Taj Mahal in Aurangabad.

### **Revolts under Aurangzeb**

- Aurangzeb's rule can be broadly divided into two periods, in the first 23 years, he concentrated in the North, when Maratha power under Shivaji emerged and the second period (1682-1707) is marked by his pre-occupations with the affairs of Deccan.
- **Sikhs** In 1675, he ordered the arrest and execution of the ninth Sikh Guru, **Guru Tegh Bahadur**. Against this, Guru Gobind Singh organised his followers into a military force called *Khalsa*, but he was also murdered in AD 1708 by an Afghan at Nanded in Deccan. Later, Banda Bairagi continued the war against Mughals.
- **Marathas under Shivaji:** Shivaji was a powerful king. Aurangzeb conspired with Jai Singh of Amber against Shivaji in 1665. Shivaji visited Mughal court on the request of Jai Singh, but was imprisoned. He managed to escape in 1674 and declared himself an independent monarch.
- After his death in 1680, his son and successor, Sambhaji was executed by Aurangzeb in 1689. Later, the Marathas, Rajaram and Tarabai, continued the movement against the Mughals.
- The **Jats** revolted under **Gokla, Rajaram and Churaman**.
- The **first Afghan Rebellion** was by Yusuf Shahi tribes of Afghanistan of Roshni sect.
- The **Second Afghan Rebellion** was led by Ajmal Khan.
- **Marwar** He annexed Marwar in AD 1678. The campaigning was led by Akbar II (Son of Aurangzeb) against Durgadas, General of Ajit Singh (Son of Raja Jaswant Singh). Akbar II died in the battle. This gave a serious blow to Rajput Mughal alliance.
- Bijapur and Golconda were annexed in AD 1686 and AD 1687, respectively.
- **Ahom**: In 1662, Mir Jumla Aurangzeb's ablest general led the expedition against Ahoms.

### **Religious Policy of Aurangzeb**

- Aurangzeb was a Sunni orthodox Muslim, who wanted to convert India from **Dar-ul-Harb to Dar-ul-Islam**. His religious policy was a departure from the policy of tolerance and universal peace followed by Akbar. He replaced

the solar calender by the lunar *Hira*, dismissed court musicians and royal painters, appointed Muhtasibts (court sensors) from amongst the *Ulema*, to enforce *shariat*.

### **Causes of the Fall of the Mughal Empire**

- ❖ Weak and incompetent successors.
- ❖ Wars of succession.
- ❖ Aurangzeb's Deccan, religious and Rajput policies.
- ❖ Jagirdari crisis.
- ❖ Growth of Marathas and other regional powers.
- ❖ Foreign invasions of Nadir Shah (1739) Abdali.

### **Socio Economic Conditions**

- Society Society was stratified into several classes. Both *Sati* and child marriage were readily practiced. *Purdah system* was in vogue, both among the Hindus and the Muslims.
- Economy Both trade and commerce flourished with the European nations. Cotton, Indigo, Opium and tobacco was produced. Mughal rulers encouraged agriculture, industries and crafts.
- **Ports:** Surat, Cambay, Cochin and Masulipattnam.

### **Central Administration**

- Akbar organised the central machinery of administration on the basis of the division of power between various departments and through checks and balance. The king was the head of all powers.
- The *wakil* (deputy of the king) was stripped off of all his powers after Bairam Kharis death.
- **Wazir** : The Prime Minister.
- **Diwan** : His responsibility were in three fields : Executive, revenue and finance.
- **Mir Bakshi**: He was the head of the military department, similar to that of Ariz-i-mamalik, under Delhi Sultanate
- **Mir Saman or Khan Saman**: Incharge of the royal households, like building roads, gardens etc.
- **Sadr-us-Sudur**: Incharge of religious matters, religious endowments and charities.
- **Chief Qazi**: Head of the Judiciary department after the king.
- **Barids**: Intelligence officers.

- **Mustaufi:** Auditor-General.

### Provincial Administration

- Mughal empire was divided into 12 Subas (provinces). After expansion of the empire, it became 15 during Akbar, 11 during Jahangir, 22 during Shahjahan and 21 during Aurangzeb.
- **Subedar:** Head of the province (governor).
- **Provincial Diwan:** Dealt with finance, directly responsible to central diwan.

### District or Sarkar

- **Fauzdar:** Administrative head of the Sarkar.
- **Amil/Amalguzar:** Collecting revenues and patrolling the roads.
- **Kotwal:** Duty was to maintain law and order in sarkar besides, trial of criminal cases and regulations of prices.

### Pargana

- **Siqdar:** Administrative head of the Pargana.
- **Amin/Qanungo:** They were revenue officials.

### Village

- **Lambardar:** Village Headmen.
- **Patwari:** Village Accountant.

### **Mansabdari System**

*Marsabdari system (1595-96) showed a noble's civil and military capacity. In its broad aspect, the mansab or rank awarded to an individual fixed both his status in the official hierarchy as well as his salary. Twin ranks Zat and Sawar were allotted. The Zat indicated the noble's personal status and the Sawar rank, the actual number of horsemen he was expected to maintain.*

### Revenue Administration

- The empire was divided into Khalisa (crown land), Jagirs (land granted to nobles) and Inam Madad-i-Maash Suyurghal (land granted to religious and learned men).
- **Dashala System of Raja Todarmal:** Under this system the average produce of different crops at the average price prevailing over the last 10 years were calculated. 1/3rd of the average produce was the state's share. For the measurement of land, 'Bigha' was adopted as the standard unit.
- **Zabti System** was based on the measurement and assessment of land.
- Methods of revenue collection

- ✓ **Rai:** Yield per unit area.

- ✓ **Kankut:** Based on estimate.

- ✓ **Zabti:** Based on the yields of crops.

**Jagirdari System:** In this system, every Jagirdar was assigned land in proportion to his salary.

- **Ijara System:** The Government began contracting the land with the middle man, also known as revenue farmers, who were supposed to pay fixed amount to the government, however, were left free to collect whatever they could, from the farmers leading to their exploitation.

### Mughal Paintings

- The Mughals introduced new themes depicting the court, battle scenes and added new colours (peacock blue and Indian red).
- Jaswant and Dasawant were two famous painters of Akbar's court.
- Mughal painting reached to its zenith during Jahangir's rule. Jahangir was a great patron of painting.

### Mughal Architecture

<b>Ruler</b>	<b>Architecture Built</b>
<b>Babur:</b>	<i>Mosques at Kabuligarh (Panipat) and at Sam bhal (Rohilkhand).</i>

**Humayun:** City of Dinpannah, Jam ali mosque and mosque of Isa Khan at Delhi.

### **Haji Begum**

(wife of

**Humayun:** Humayun Tomb.

**Akbar:** Agra fort, Jahangiri Mahal in Agra fort based on design of Manmandir; Lahore Palace, Allahabad fort, temple of Govind-deva at Vrindavana and several buildings at Fatehpur Sikri that included Panch Mahal (planned on Buddhist Vihara), Diwan-i-khas, Jodhabai's Palace, Diwan-i-Aam , Buland Darwaja (Iranian style). He began to build his own tomb at Sikandara which was completed by Jahangir.

### **Jahangir**

(Indo Persian

style): Moti Mosjid at Lahore, own Mausoleum at Shahdara.

**Nurjahan:** Itamaduddaulas marble tomb at Agra in pietra dura technique.

**Shahjahan: At Agra:** Taj Mahal, Moti ki Masjid, Khanas Mahal, Sheesh Mahal, Musamman Burz (Jasmine Palace where he spent his last years).

**At Delhi:** Jama Masjid, Red Fort (Diwan-i-Khas and Rang Mahal).

**Others:** Shalim ar Bagh (Lahore), City of Shahjahandabad (Red Fort and Taqht-i-Taus i.e. Peace throne), Nahor-i-Faiz.

**Aurangzeb:** Moti Masjid at Delhi, Bibi-ka-Makbara (tomb of his wife Rabbia-ud-Douna) at Aurangabad, Badshahi mosque at Lahore.

### Mughal Era Painting

Ruler	Famous Painters	Other Features
Humayun	❖ Mir Sayyid Ali ❖ Abdus Samad	
Akbar	❖ Adbus Samad ❖ Khusro Kuli ❖ Basawan ❖ Daswan ❖ Farrukh Beg ❖ Jamshed	Introduction of Persian style Daswan illustrated 'Razma Namah' (Persian Mahabharat) and Akbarnama.
Jahangir	❖ Bishan Das ❖ Ustad Mansur (animal paintings) ❖ Abdul Hassan	Painting reached at its zenith, use of halo (divine light) started.

### Mughal Period Literature

Scholars	Works
❖ Khan Abdur Rahman	Translated <b>Tuzuki-i-Baburi</b> from Turk to Persian during Akbar's reign
❖ Abul Fazal	Ain-i-Akbari, Akbarnama
❖ Abduf Qadir Badauni	Kitab-ul-Ahadish, Tarikh-i-Alfi, Muntakhab-ul-Tawarikh
❖ Khwaja Nizamuddin	Tabaqat-i-Akbari
❖ Jahangir	Tuzuk-i-Jahangiri (in Persian)
❖ Hamid	Padshah Namaah
❖ Khafi Khan	Muntakhab-i-Lubab
❖ Dara Shikoh	Translated Upanishadas and Bhagavada Gita, Safinat-ul-Auliya, Hasrat-UI-Arifim
❖ Mirza Muhammad Quzim	Alamgirnamah
❖ Ishwar Das	Fatuhat-i-Alamgiri
❖ Muhammad Salih	Shahjahanama

## Sher Shah Suri and Afghan Empire (1540-55)

- His real name was Farid.
- He was born to Hasan, a Jagirdar of Sasaram and Hajipur. Ibrahim Lodhi

transferred his jagir to him.

- He joined Babar Khan Lohanis service and then appointed as the Deputy Governor of Bihar.
- He usurped the throne as 'Hazarat-i-Ala'. He gained Chunar by marrying a widow Lad Malika.
- Battle of Chausa:** In 1539, he captured Chausa from Humayun. He assumed the title of Shershah as emperor.
- He also issued coins and Khutba was read in his name. The whole area from Bengal to Banaras was under his empire.
- Battle of Kannauj:** He also annexed Kannauj after defeating Humayun.
- Battle of Samel (1544):** Defeated Rajput forces of Marwar.
- The campaign of Bundelkhand was the last campaign of his life. While besieging its fort at Kalinjar, Sher Shah got burned due to fire in the bundle of rockets in 1545.

### Administration

- For administrative convenience, Shershah divided his whole empire into 47 divisions called **Sarkars** and further into smaller Parganas.
- Pargana**, composed of number of villages and was under the charge of **Shiqdar**, who looked after the law, the order and general administration of the **Pargana**. The **Amil** or **Munsif** looked after the collection of land revenue in the **Pargana**.

### Central Departments

- |                   |                     |
|-------------------|---------------------|
| ❖ Diwan-i-Wazarat | Revenue and finance |
| ❖ Diwan-i-Ariz    | Military            |
| ❖ Diwan-i-Insha   | Dispatches.         |
| ❖ Diwan-i-Rasalat | Correspondence      |

- Civil cases of the pargana was headed by Amin and criminal cases by a Qazi or **Min-i-Adal**.
- He introduced the principle of local responsibility for local crimes.

### Revenue System

- Land was measured using the **Sikandari-gaz**; one-third of the average produce was fixed as tax.
- The peasant was given a Patta and Qabuliyat, which fixed the peasants rights and taxes.
- Zamindars**, were removed and taxes were directly collected.

### Others

- Sher Shah introduced a regular postal service.
- He introduced silver **rupiya**.
- He promoted trade and commerce by

- reducing the number of customs duty at collection points.
- Sher Shah improved the transportation by building roads. The roads built by Sher Shah were termed as 'the arteries of the empire'. **Sarais** were built on the road. He restored the old imperial road Grand Trunk from Sonargaon in Bengal to Peshawar.
- He built **Purana Qila**, alongwith Grand-Trunk Road. He also built his tomb at Sasaram in Bihar.
- Malik-Muhammad Jayasi wrote **Padmavat** (Hindi) during his reign.
- Tarikh-i-Shershahi was written by Abbas Khan Sarwani, his court historian.

# INDIAN POLITY

## At a Glance

### PANCHAYATI RAJ

- Ensures the direct participation of people at the grass root level.
- In 1956, the National Development Council appointed a committee under Balwant Rai Mehta, which submitted its report in 1957 in which it recommended :
  - ◆ A 3-tier structure consisting of Zila Parishad at the District Level, Panchayat Samiti at the Block Level and Gram Panchayat at the Village Level.
  - ◆ Genuine transfer of power & responsibility to these institutions.
  - ◆ Adequate resources to them
  - ◆ All social & economic development programmes channelized through these.
  - ◆ The 3-tier system of Panchayat Raj was 1st adopted by Rajasthan (Nagaur District) on Oct 2, 1959. This was followed by Andhra Pradesh, Bihar, Gujarat, Himachal Pradesh, Maharashtra, Punjab, Tamil Nadu, UP & West Bengal.

#### THREE TIER SYSTEM

- It envisages Panchayat at the village level, Panchayat Samitis at the block level & Zila Parishad at the district level.
- (a) **Village Panchayat**
  - ◆ Consists of elected representatives of the people.
  - ◆ Membership varies from 5-31.
  - ◆ Seats reserved for SC, ST, women, etc.
  - ◆ Chairman is elected from among its members, known as 'Sarpanch'.
  - ◆ The Panchayat is accountable for all its actions to the Gram Sabha, the general body of Villagers.
  - ◆ Gram Sabha consists of all the adults residing within the jurisdiction of the Panchayat.
  - ◆ It exercises general supervision over the working of the Panchayat & lays down necessary guidelines for its working.

#### (b) **Block & Panchayat Samiti**

- ◆ The block, consisting of 2-60 villagers is administered through a Panchayat Samiti, consisting of indirectly elected members of village panchayat.

- ◆ The chairman of Panchayat Samiti is called 'Pradhan'.

#### (c) **Zila Parishad**

- ◆ It is the top level of the 3-tier structure.
- ◆ Elect its chairman from amongst its members who is known as the District Collector.

#### ASHOK MEHTA COMMITTEE

- Appointed in December, 1977 by the Janta Government.
- Submitted its report in 1978, which said :
  - (a) Replacement of 3-tier system by 2-tier system consisting of Mandal Panchayats at the base (consisting of a group of villages comprising a population of 15,000 to 20,000) and the Zila Parishad at the top.
  - (b) To reduce the dependence of Panchayati Raj Institutions on State govt. by giving them powers to collect certain taxes like profession tax, entertainment tax, etc. in their areas.
  - (c) Suggested the setting up of Social Justice Committee in each Zila Parishad to protect the interests of vulnerable sections of society.
  - (d) Favoured the open participation of political parties in the working of Panchayati Raj Institutions.
- In December, 1992 73rd constitutional amendment was passed to decentralize the power down to village level. It said (envisaged):
  - (a) Panchayati Raj institutions to be constituted through direct elections with reservation as well.
  - (b) Fixed term of 5 years, and if dissolved earlier, elections must be held within 6 months.
  - (c) They are authorized to make laws concerning economic and social development of villages. These have been listed in the eleventh schedule & comprise 29 subjects.

### MUNICIPALITIES

- ✓ The Municipalities are the **Local self government** units in the urban areas.
- ✓ Some of the provisions are similar to those present in the part IX (Panchayati

- ✓ Raj) of the Constitution like reservation of seats, State Finance Commission and the State Election Commission.
- ✓ The Municipalities are added in the Constitution through the 74th amendment act.
- ✓ The Municipalities are mentioned in the **12th Schedule** of the Constitution.
- ✓ They are mentioned under **Part IX A** of the Indian Constitution.
- ✓ The Articles from **243 P to 243 ZG** are related to Municipalities.

### Background :

- ✓ The **1st Municipal Corporation** in India was set up in the year 1687, in Madras.
- ✓ In the year 1726 municipal corporations were set up in Bombay and Calcutta.
- ✓ In the year 1882, the viceroy of India **Lord Ripon** issued a resolution of Local Self government.
- ✓ Lord Ripon is called the '**Father of Local Self Government**' in India.

### Constitutional Status to Municipalities

- ✓ Rajiv Gandhi was the first Prime Minister who made an attempt to provide the constitutional status to the Municipalities.
- ✓ In the year 1989, **65th Constitutional amendment bill (Nagar Palika bill)** was introduced in the Parliament.
- ✓ The Nagar Palika was passed in the Lok Sabha.
- ✓ But the Nagar Palika bill was rejected by the Rajya sabha in October 1989.

### NOTE:

1. These are the similar incidents like that of 64th amendment bill.
2. A Constitutional amendment bill must be passed separately by both the houses of the Parliament with a special majority.

- ✓ Hence the Nagar Palika bill was lapsed.
- ✓ In the year 1991 P V Narasimha Rao became the Prime Minister of India.
- ✓ In September 1991 the **74th Constitutional amendment bill** was introduced in Lok Sabha.
- ✓ The amendment bill was passed by both the houses of the Parliament in December 1992.
- ✓ Later the bill was approved by the half number of the states with a simple majority.
- ✓ The bill was given the consent by the President in April 1993.

### 74th Amendment Act:

- ✓ A new part IX-A has been added.
- ✓ This came into force on June 6, 1993.

- ✓ This consists of provisions from articles 243 P to 243 ZG.
- ✓ The act also added 12th schedule to the constitution.
- ✓ The 12th schedule consists of **18 items**.
- ✓ It is an obligation to the states to adopt the new system of municipalities in accordance with the provisions of the 74th amendment act.

### Salient features of the 74th Amendment Act

- ✓ The act created 3 types of municipalities.
  - ❖ Nagar Panchayat
  - ❖ Municipal Council
  - ❖ Municipal Corporation
- ✓ Article 243Q makes it obligatory for every state to constitute such units.
- ✓ Nagar Panchayat is a transitional area. This is an area in transition from a rural to an urban area.
- ✓ Municipal council is a smaller urban area.
- ✓ A Municipal Corporation is a larger urban area.
- ✓ To conduct elections at regular intervals entire municipal area is divided into wards.
- ✓ The members of a municipality shall be elected directly by the people.

### Reservation of Seats

- ✓ There shall be a reservation of seats for the Schedules Castes and Scheduled Tribes in every Municipality in proportion of their population.
- ✓ Out of the total number of seats to be filled by direct election at least **1/3rd** seats would be reserved **for women**, including the number of seats reserved for the women belonging to SC and ST.
- ✓ The reservation of **backward classes** may be provided by the state legislature.
- ✓ The state legislature may also provide reservation of offices of the chairpersons' in municipalities for the backward classes.

### Term

- ✓ The term of every municipality is **5 years**.
- ✓ A Municipality may be dissolved earlier according to law.
- ✓ Elections to constitute a Municipality shall be completed before the expiry of the period of 5 years.
- ✓ If a Municipality is dissolved earlier the elections must be conducted within 6 months of the dissolution.
- ✓ A Municipality constituted after its dissolution shall continue only for the remainder of the term.

- ✓ If the remainder period is less than 6 months it shall not be necessary to hold elections.

### **Qualifications :**

- ✓ Article 243V provides that all the persons who are qualified to be chosen to the state legislature shall be qualified for being a member of a Municipality.
- ✓ The persons who have attained the age of 21 years will be eligible to be a member.

**Note:** All the questions of disqualification shall be referred to such authority as the state legislature determines.

### **Subjects in the 12th Schedule**

- ✓ Urban planning including town planning
- ✓ Regulation of land use and construction of buildings
- ✓ Planning for economic and social development
- ✓ Roads and bridges
- ✓ Water supply for domestic, industrial and commercial purposes
- ✓ Public health, sanitation, conservancy and solid waste management
- ✓ Fire services
- ✓ Urban forestry, protection of environment and promotion of ecological aspects
- ✓ Safeguarding the interests of weaker sections of society, including the handicapped and mentally retarded
- ✓ Slum improvement and up gradation
- ✓ Urban poverty alleviation
- ✓ Provision of urban amenities and facilities such as parks, gardens, playgrounds
- ✓ Promotion of cultural, educational and aesthetic aspects
- ✓ Burials and burial grounds, cremations and cremation grounds, and electric crematoriums
- ✓ Cattle ponds, prevention of cruelty to animals
- ✓ Vital statistics including registration of births and deaths
- ✓ Public amenities including street lighting, parking lots, bus stops and public conveniences
- ✓ Regulation of slaughter houses and tanneries.

### **THERE ARE VARIOUS TYPES OF URBAN GOVERNMENTS:**

- ✓ Municipal corporations
- ✓ Municipalities
- ✓ Notified area committees
- ✓ Town area committees
- ✓ Cantonment board
- ✓ Township

- ✓ Port trust
- ✓ Special purpose agency

### **Municipal Corporation:**

- ✓ The Municipal Corporations are established in the states by the acts of the state legislatures.
- ✓ The Municipal Corporations are established in the Union Territories through the acts of the Parliament.
- ✓ The Municipal Corporations are created for the administration of big cities.
- ✓ The State Election Commission conducts the elections for a Municipal Corporation.
- ✓ For that purpose the total area is divided into the wards.
- ✓ The people in each ward elect a representative called Corporator / Councilor.
- ✓ A Municipal Corporation consists of three different authorities.
  - ❖ Council
  - ❖ Standing committees
  - ❖ Municipal Commissioner

### **Municipal Council:**

- ❖ The council consists of the members directly elected by the people.
- ❖ The council is the deliberative and legislative wing of the Corporation.
- ❖ The council is headed by a Mayor.
- ❖ The election of the Mayor is decided by the state legislature.
- ❖ If it is indirect election the Mayor is elected from among the members of the council.
- ❖ The meetings of the council are presided over by the Mayor.
- ❖ The Mayor is assisted by the Deputy Mayor.

### **Standing Committees:**

- ❖ The standing committees are large in size.
- ❖ They are created to facilitate the working of the council.
- ❖ The standing committees take decisions in their respective fields like education, health, taxation, Public works, finance etc.

### **Municipal Commissioner:**

- ❖ The Municipal Commissioner is appointed by the State Government.
- ❖ The Municipal Commissioner belongs to the IAS.
- ❖ The Municipal Commissioner is the chief executive authority of the Municipal

### Corporation

- ✓ The Municipal Commissioner is responsible for implementation of the decisions taken by the council and the standing committees.

### Municipalities:

- ✓ The Municipalities are established up by the acts of state legislatures.
- ✓ The Municipalities set for the administration of small cities and towns.
- ✓ For the Union Territories the municipalities are set up by the acts of the Parliament.
- ✓ The State Election Commission conducts the elections for a Municipality.
- ✓ For that purpose the total area is divided into the wards.
- ✓ The people in each ward elect a representative called Councilor.
- ✓ A Municipality consists of three different authorities.
  - ❖ Council
  - ❖ Standing committees
  - ❖ Chief Executive Officer / Municipal Commissioner

### Council:

- ✓ The council consists of the members directly elected by the people.
- ✓ The council is the deliberative and legislative wing of the Municipality.
- ✓ The council is headed by a Chairman or President.
- ✓ The election of the Chairman is decided by the state legislature.
- ✓ If it is indirect election the Chairman is elected from among the members of the council.
- ✓ The meetings of the council are presided over by the Chairman.
- ✓ The Mayor is assisted by the Vice-Chairman.

### Standing Committees:

- ✓ The standing committees are large in size.
- ✓ They are created to facilitate the working of the council.
- ✓ The standing committees take decisions in their respective fields like education, health, taxation, Public works, finance etc.

### **THE MUNICIPAL COMMISSIONER OR CHIEF EXECUTIVE OFFICER:**

- ✓ The Municipal Commissioner is appointed by the state government.
- ✓ The Municipal Commissioner is responsible for day to administration.

## **SUPREME COURT**

The Supreme Court of India was inaugurated on 28 January, 1950. Presently, Supreme Court is functioning at full strength (sanctioned strength 34). A small Bench, with two to three Justices, is *called a Division Bench*. A large Bench, with five or more Justices, is called a **Constitutional Bench**.

### Tenure and Qualification

- *Judges of the Supreme Court are appointed by the President and retire at the age of 65.*
- *The qualifications are (a) must be a citizen of India; (b) a Judge of a High Court for at least 5 years; or (c) an advocate of a High Court for at least 10 years; or he should be a distinguished jurist in the opinion of the President.*
- *The Constitution has not prescribed a minimum age for appointment as a judge of the Supreme Court.*

**Independence of Judges** (Article 125) The salaries and allowances of Judges are charged upon the Consolidated Fund of India (Present salary of the CJI is '2.8 Lakh and of other Judges is '2.5 Lakh). **Removal of Judges** Judges can be removed only on the grounds of proved **misbehaviour** or **incapacity**. Judges can be removed only by a resolution of both Houses of Parliament supported by a majority of total membership of both the Houses and 2/3 of members present and voting. The first Judge against whom the proceedings were initiated was **V Ramaswami** (1993) and the second one was **Soumitra Sen** (2011).

### Jurisdiction

The Supreme Court has original, appellate, advisory and writ jurisdictions.

- **Original Jurisdiction** means that certain types of cases can originate with the Supreme Court only. The Supreme Court has original jurisdiction in (a) disputes between the centre and one or more States; (b) disputes between the Centre and any State(s) on one side and one or more States on the other side; (c) disputes between two or more States; and (Article 131).
- **Appellate Jurisdiction** means that appeals against judgements of lower courts can be referred to it. The Supreme Court is the highest court of appeal in the country. Four types of cases fall within its appellate jurisdiction, namely, constitutional cases, civil cases, criminal cases and appeals by special leave.

- The first Chief Justice of India was HJ Kania (1950–51).
  - The shortest tenure so far is of KN Singh (25<sup>th</sup> November, 1991—12<sup>th</sup> December, 1991).
  - The longest tenure, so far is of Y.V. Chandrachud (1978–85).
  - The first woman Judge of the Supreme Court was Justice Fatima Beevi in 1987 and the second woman Justice was Gyan Sudha Mishra in 2010.
- **Advisory Jurisdiction** refers to the process where the President seeks the court's advice on legal matters (Article 143). The Supreme Court is a court of record (Article 129).
  - Under Article 139 (A) (inserted by the 44th Amendment), the Supreme Court may transfer to itself, cases from one or more

High Court if these questions involve a significant question of law.

## HIGH COURTS [Article 214–232]

There are **24** High Courts in India. The Calcutta High Court, established in 1862, is the oldest High Court in India. The Bombay and Madras High Courts were also established in the same year. The newest High Courts are the Tripura, Meghalaya and Manipur High Courts, all were established in the year 2013. As of 2019, there are 25 High Courts in India.

### Jurisdiction and Seats of High Courts

Court Name	Estd. in the Year	Territorial Jurisdiction	Seat
Mumbai	1862	Maharashtra, Dadra and Nagar Haveli, Goa, Daman and Diu	Mumbai (Bench at Nagpur, Panaji and Aurangabad)
Kolkata	1862	West Bengal, Andaman and Nicobar Islands	Calcutta (Circuit Bench at Port Blair)
Chennai	1862	Tamil Nadu and Puducherry	Chennai (Bench at Madurai)
	1866	Allahabad Uttar	Pradesh Allahabad (Bench at Lucknow)
Karnataka	1884	Karnataka	Bangalore (Circuit Benches at Hubli Dharwad and Gulbarga)
Patna	1916	Bihar	Patna
Madhya Pradesh	1956	Madhya Pradesh	Jabalpur (Benches at Gwalior and Indore)
Jammu & Kashmir	1928	Jammu and Kashmir	Srinagar and Jammu
Punjab and Haryana	1875	Punjab, Haryana and Chandigarh	Chandigarh
Orissa	1948	Odisha	Cuttack
Guwahati	1948	Assam, Nagaland, Mizoram and Arunachal Pradesh	Guwahati (Bench at Kohima, Aizawl and Itanagar)
Rajasthan	1949	Rajasthan	Jodhpur (Bench at Jaipur)
Kerala	1958	Kerala and Lakshadweep	Ernakulam
Gujarat	1960	Gujarat	Ahmedabad
Delhi	1966	National Capital Territory of Delhi	New Delhi
Himachal Pradesh	1971	Himachal Pradesh	Shimla
Sikkim	1975	Sikkim	Gangtok
Chhattisgarh	2000	Chhattisgarh	Bilaspur
Uttarakhand	2000	Uttarakhand	Nainital
Jharkhand	2000	Jharkhand	Ranchi
Tripura	2013	Tripura	Agartala
Manipur	2013	Manipur	Imphal
Meghalaya	2013	Meghalaya	Shillong
Andhra Pradesh	2019	Andhra Pradesh	Amaravati
Telangana	2019	Telangana	Hyderabad

# INDIAN ECONOMY

## At a Glance

### NATIONAL INCOME OF INDIA

- National Income (NI) is the net value of all the final goods and services produced by its nationals during a financial year. It is a flow concept. In India, the financial year is from 1st April to 31st March. The national income is calculated annually.
- According to National Income Committee (1949), “A national income estimate measures the volume of commodities and service turned out during a given period counted without duplication”.

**NI=C + G + I + (X-M) + (R-P)-depreciation - Indirect tax + subsidies.**

C	=	Total Consumption Expenditure
I	=	Total Investment Expenditure
G	=	Total Government Expenditure
X	=	Export
M	=	Import
(R-P)	=	Net Factor Income from abroad.

- When the National Income is measured at the base year price, it is called **national income at constant price**.
- When the national income is measured at the current year price, it is called national income at current year price.
- When NNP is calculated at Factor Cost (FC) it is called National Income. This measure is calculated by deducting indirect taxes and adding subsidies in NNP at Market Price (MP).
- **NNP<sub>FC</sub> = NNP<sub>MP</sub> - Indirect Taxes + Subsidies + Government surplus = National Income.**
- **NI = NNP + Subsidies - Indirect taxes**
- **NNP=GNP - Depreciation - Indirect taxes + Subsidies.**
- The CSO released the ‘New series’ of national accounts with base year 2017-18 instead of the base year 2011-12. The revisions happen every 5 years.

❖ **National Income** is the measurement of the production power of an economic system in a given time period.

❖ **National Wealth** is the measurement of the present assets available at a given time.

### Methods of Measuring National Income

#### Product Method—

In this method, net value of final goods and services produced in a country during a year is obtained, which is called total final product. This represents Gross Domestic Product (GDP). Net income earned in foreign boundaries by nationals is added and depreciation is subtracted from GDP

#### Income Method—

In this method, a total of net income earned by working people in different sectors and commercial enterprises is obtained. Incomes of both categories of people — paying taxes and not paying taxes are added to obtain national income. By income method, national income is obtained by adding receipts as total rent, total wages, total interest and total profit.

#### Consumption Method—

It is also called expenditure method. Income is either spent on consumption or saved. Hence, national income is the addition of total consumption and total savings.

In India, a combination of production method and income method is used for estimating national income.

#### Estimates of National Income in India

- In 1868, the first attempt was made by Dadabhai Naoroji in his book ‘Poverty and Un-British Rule in India’. He estimated the per capita annual income to be Rs. 20.
- The first scientific attempt to measure national income in India was made by professor V.K.R.V Rao in 1931-32. He divided the Indian economy into 13 sectors.
- In 1949, National Income Committee under the Chairmanship of **Professor**

**P.C Mahalanobis** was constituted. The other members were professor V.K.R.V Rao and professor D.R Gadgil.

- The Government of India appointed a National Income Committee under the Chairmanship of Dr. P.C Mahalanobis. This committee gave its first report in 1951 and final report in 1954.

## NATIONAL INCOME AGGREGATES

### Gross Domestic Product (GDP)

It is the total money value of all final goods and services produced within the geographical boundaries of the country during a given period of time.

$$GDP = C + G + I$$

Where,

C = Consumption expenditure

G = Government expenditure

I = Investment expenditure

But in closed economy,  $(R - P) = 0$ , then  $GDP = GNP$  where,  $(R - P) = \text{Net factor income from abroad}$ . [R= receipt; P= payment]

### GDP At Market Price (GDP<sub>MP</sub>)

- It refers to the total value of all the goods and services at market price produced during a year within the geographical boundaries of the country.
- Market price refers to the actual transacted price and it includes indirect taxes such as Excise Duty, VAT, Service Tax, Customs Duty etc but it excludes government subsidies.

### GDP at Factor Cost (GDP<sub>FC</sub>)

- GDP can be calculated at factor cost. This measure more accurately reveals the income paid to factors of production.
- The factor cost means the total cost of all factors of production consumed or used in producing a good or service. It includes government grants and subsidies, but it excludes Indirect Taxes.
- The difference between Market Price (MP) and Cost Price (CP) is because of the Indirect Taxes and Subsidies.
- $GDP_{FC} = GDP_{MP} - \text{Indirect Taxes} + \text{Subsidies}$ .
- In terms of value addition, the Gross Domestic Product of the economy is the sum total of the net value added and depreciation of all the firms of the economy.

### Calculation of GDP

- GDP in a country is usually calculated by the National Statistical Agency, which compiles the information from a large number of sources.
- In case of India, it is Central Statistics

Office (CSO), which estimates GDP. However, most countries follow established international standards for calculating GDP of their country.

- The international standards for measuring GDP are contained in the System of National Accounts (SNA), 1993, compiled by the International Monetary Fund (IMF), the European Commission (EC), the Organisation for Economic Cooperation and Development (OECD), the United Nations (UN) and the World Bank.

**Source** Central Statistics Office PE = Provisional Estimates (CSO)

### Nominal GDP and Real GDP

Nominal GDP is evaluated at current market prices. Therefore, nominal GDP will include all of the changes in market prices that have occurred during the current year due to inflation or deflation. Real GDP is a better measurement of GDP since it reflects the increase in quantity of goods and services by adjusting for any increase in prices. Real GDP is generally measured by using base year prices of goods and services.

### Gross Value Added (GVA)

It is a measure of the value of goods and services produced in an area, industry or sector of an economy. In national accounts, GVA is output minus intermediate consumption, it is a balancing item of the national accounts' production account.

### Gross National Product (GNP)

GNP refers to the money value of total output of production of final goods and services produced by the national residents of a country during a given period of time, generally a year.

*Symbolically,*

$$GNP = GDP + (X - M) + (R - P)$$

$$GNP = C + G + I + (X - M) + (R - P)$$

X = Exports

M = Imports

(R-P) = Net factor income from abroad

### Net National Product (NNP)

It is obtained by subtracting depreciation value (i.e. capital stock consumption) from GNP.

*Symbolically, NNP = GNP - Depreciation*

### Personal Income (PI)

It is that income, which is actually obtained by the individual or nationals.

*Symbolically, Personal Income = National Income - Undistributed profits of corporations*

*- Payment for social security provisions - Corporate taxes + Transfer payments + Net interest paid by the government.*

### **Personal Disposable Income (PDI)**

When personal direct taxes are subtracted from personal income, the obtained value is called personal disposable income.

**Symbolically, PDI = PI - Direct taxes** National Statistical Organisation (NSO) was setup on 1st June, 2005, for promoting statistical network in the country. It was then headed by professor S.D Tendulkar. Gross Value Added (GVA) is a measure in economics of the value of goods and services produced in an area, industry or sector of an economy.

**GVA = GDP + Subsidies - (direct, sales) taxes.**

#### **CSO and NSSO**

- ❖ CSO (*Central Statistical Office*) was set-up in 1951, constituted to publish national income data.
- ❖ NSSO (*National Sample Survey Office*) was set-up in 1950, for conducting large scale sample survey to meet the data needs of the country for the estimation of national income and other aggregates.

## **BANKING IN INDIA**

- The first Bank of India is **Bank of Hindustan** established in 1777.
- The first bank of limited liability managed by an Indian was **Oudh Commercial Bank** established in 1881. Subsequently, PNB was established in 1894.
- The largest bank **Imperial Bank of India** was nationalised in 1955 and renamed as **State Bank of India** followed by formation of its 7 associates in 1959.
- The step toward 'Social Banking' was taken with the nationalisation of 14 Commercial Banks on 19th July, 1969. Six more Commercial Banks were nationalised on 15th August, 1980.
- As on March 2011, there were ,4 non-Scheduled Commercial Banks in India.

### **Reserve Bank of India (RBI)**

- RBI is the Central Bank of the country.
- RBI was set-up on the basis of Hilton Young Commission recommendation in April, 1935 with the enactment of RBI Act, 1934. Its first Governor was **Sir Osborne Smith**.
- The main purpose of creating RBI was to separate currency and credit from Goi.
- RBI was nationalised in 1949 and its first Indian Governor was **C.D Deshmukh**.

### **Administration**

- The headquarter of the RBI is in **Mumbai**.

- There are 14 Directors in Central Board of Directors besides the Governor, four Deputy Governors and one Government Official.
- Governor of RBI - Mr Urjit Patel.

### **Functions**

*The main functions of the RBI includes*

- Monetary authority.
- Issue of currency, Banker and debt manager to government.
- Banker of Banks.
- Regulator of banking system.
- Manager of foreign exchange.
- Maintaining financial stability.
- Regulator and supervisor of the payment and settlement system.
- Since 1952, Monetary Policy of the RBI emphasise on twin goals.  
*These are as follows:*
  1. Economic growth
  2. Inflation control

### **Credit Control Instruments**

Instrument of credit control can be divided into two namely Qualitative/ Selective credit control and Quantitative credit control.

#### **Quantitative/General Credit Control**

Quantitative credit control are used to control the volume of credit and indirectly to control the inflationary and deflationary pressures caused by expansion and contraction of credit.

*The quantitative credit control consists of*

- **Bank Rate:** It is also called the rediscount rate. It is the rate, at which the RBI gives finance to Commercial Banks.
- **Cash Reserve Ratio (CRR):** It specifies the fraction of the total deposits of banks that they are obliged to keep with the RBI. Since 1962, the RBI has been empowered to vary the CRR requirement between 3% and 15% of the total demand and time deposits.
- **Statutory Liquidity Ratio (SLR):** It is the ratio of liquid asset, which all Commercial Banks have to keep in the form of cash, gold and unencumbered approved securities equal to not more than 40% of their total demand and time deposits liabilities, (ranges is 25-40%)
- **Repo Rate :** It is the rate, at which RBI lends short-term money to the banks against securities. Repo rate injects liquidity in the market.
- **Reverse Repo Rate :** It is the rate, at which banks park short-term excess liquidity with the RBI. Reverse Repo Rate withdraws liquidity from the market. This is always 100 base point 1% less than Repo rate.
- **Open Market Operations :** Under OMOs,

when the RBI sells G-secs in the market, it withdraws money liquidity from the market and thus, reduces volume of credit leading to control of inflation.

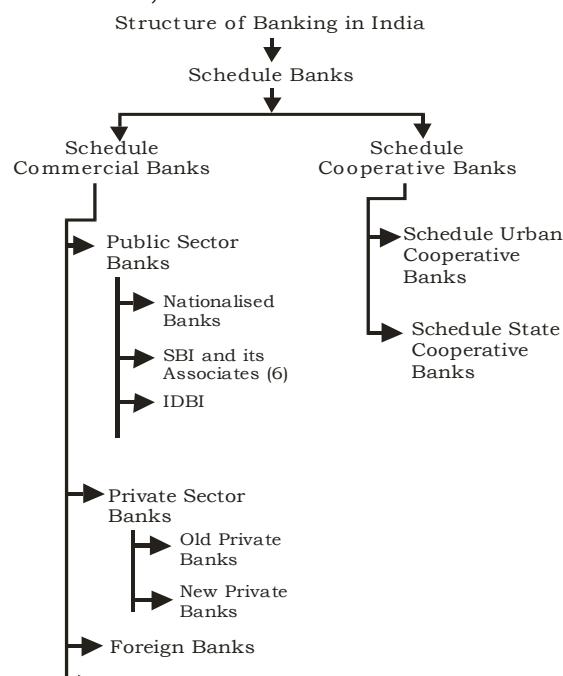
#### **Qualitative/Selective/Direct Credit Control**

Qualitative measures are used to make sure that purpose, for which loan is given is not misused. It is done through

- Credit rationing
- Regulating loan to consumption etc.
- Moral suasion

## **SCHEDULED AND NON-SCHEDULED BANKS**

- The scheduled banks are those, which are entered in the Second Schedule of the RBI Act, 1934. These banks have a paid-up capital and reserves of an aggregate value of not less than Rs. 5 lakh and satisfy the RBI that their affairs are carried out in the interest of their depositors.
- All commercial Banks (Indian and foreign), Regional Rural Banks and State cooperative Banks are Scheduled Banks. Non-Scheduled Banks are those, which are not included in the Second Schedule of the RBI Act, 1934.



#### **State Bank of India**

- State Bank of India (SBI) was previously called **Imperial Bank of India** in 1921, which was created by amalgamation of 3 presidency banks viz **Bank of Bengal**, **Bank of Bombay** and **Bank of Madras**.
  - It was nationalised in 1955.
  - In 2017, the five associates of SBI and Bhartiya Mahila Bank were merged

in State Bank of India. With this merger, SBI becomes one of the top 50 global banks.

## **PRIVATE SECTOR BANKS IN INDIA**

- All those banks, where greater parts of stake or equity are held by the private shareholders and not by the government are called private sector banks.
- There are two categories of private sector bank old and new.
- Banking Regulation Act, 1949 was amended in 1993 and once again in 2001 to permit the entry of new private sector banks in the Indian banking sector; the objective was to instill greater competition in the banking system to increase productivity and efficiency.

#### **Top Five Private Sector Banks**

1. ICICI Bank, 1994 Vadodara
2. HDFC Bank, 1994 Mumbai
3. Axis Bank, 1994 Ahmedabad
4. Kotak Mahindra Bank, 1985 Mumbai
5. Yes Bank, 2004 Mumbai

#### **Bank Board Bureau**

The Bank Board Bureau (BBB) is constituted on 28th February, 2016. The Bureau is mandated to play a critical role in reforming the troubled public sector banks by recommending appointments to leadership positions and boards in those banks, and advise them on ways to raise funds and how to go ahead with mergers and acquisitions. Vinod Rai, former comptroller and Auditor General of India, was named the first Chairman of the Banks Board Bureau.

#### **Indradhanush Scheme, 2015**

The Public Sector Banks (PSBs) plays a vital role in Indian financial system. The assets quality of PSBs have deteriorated because of rising Non-Performing Assets (NPA). Indradhanush Scheme is for the banking reforms in India. The seven Key reforms of Indradhanush mission include appointments, destressing, BBB, capitalisation, empowerment, frame work of accountability and governance reforms.

#### **RBI Grants New Bank Licence**

The decade-long wait for new bank licences finally ended on 3rd April, 2014, with the Reserve Bank of India (RBI) deciding to issue permits to two of the 25 applicants. The ones to make the cut were **IDFC**, a diversified

financial services firm with a special focus on infrastructure financing and **Bandhan**, the country's largest micro lender based in Kolkata.

### **RBI Guidelines for New Bank Licensing**

While preparing guidelines, RBI recognises the need for an explicit policy on banking structure in India keeping in view the recommendations of the Narsimha Committee, Raghuram Rajan Committee and others view points.

### **New Bank**

These new banks will be provided license under, the Banking Regulation Act, 1949 (Section 22(1)), only after the fulfilment of these two conditions.

**Bandhan Finance :** It is a microfinance company, based in West Bengal. It is headed by Shri Chandra Shekhar Ghosh and has a net worth of Rs. 1100 crore.

About 45% of its branches in the rural areas. Bandhan Bank received the inprinciple approval of the RBI in April 2014, the banking regulator gave its final nod in June, 2015.

**IDFC** The Infrastructure Development and Finance Corporation is based in Mumbai. It is originally an investment finance company, headed by Shri Rajiv Lal. IDFC has the net worth of Rs. 21000 crore, but with a lower rural presence, IDFC started operating banking service on 1st October, 2015 under RBI Banking licence.

### **Bharatiya Mahila Bank**

India's first all women bank, Bharatiya Mahila Bank was inaugurated in Mumbai on 19th November, 2013. The main objective of the bank was to focus on the banking needs of women and to promote their economic empowerment.

Usha Anantha Subramanian was appointed as the first Chairperson and Managing Director of public sector Bharatiya Mahila Bank (BMB). The BMB was based on the principle of 'Women empowerment in India'. It has been the merged with State Bank of India in 2017.

### **Basel Norms**

- These are set by Bank of International Settlement (BIS) headquartered in Basel, Switzerland. It prescribes for a set of minimum capital requirement for banks. 55 countries Central Banks are members of the BIS.
- In India Basel norms were introduced in 1988 by the RBI.
- So far two Basel norms *viz*, Basel-I and Basel-II have been implemented in India and third i.e.. Basel-III norms became operational from 1st January, 2013. RBI issued guidelines in 1992 to maintain a capital adequacy ratio of 9% as mandatory

for every Scheduled Commercial Banks (SCBs). Capital adequacy ratio is that ratio of the total capital of a bank to its risk weighted assets, which ensure's strength and stability of a bank to withstand reasonable degree of losses.

### **MUDRA Bank**

Micro Units Development and Refinance Agency Bank (or MUDRA Bank) was launched on 8th April, 2015 with a corpus of Rs. 20000 crore and a credit guarantee corpus of Rs. 3000 crore.

It is a public sector financial institution in India. It provides loans at low rates to small entrepreneurs. MUDRA Bank will be set-up through a statutory enactment. It is a 100% subsidiary of SIDBI.

### **Classification of MUDRA Bank**

MUDRA Bank has rightly classified the borrowers into three segments: the starters, the mid-stage finance seekers and the next level growth seekers. To address the three segments, MUDRA Bank has launched three loan instruments

- Shishu-covers loans upto Rs. 50,000/-
- Kishor-covers loans above Rs. 50,000/- and upto Rs. 5 lakh
- Tarun-covers loans above Rs. 5 lakh and upto Rs. 10 lakh.

## **Capital Markets**

Capital Market is a place where different financial instruments are traded between different entities. On one side there are entities that have abundant capital, much more than they require and on the other side, there are entities who need capital for various purposes. Capital markets are used to sell equities (stocks), debt securities.

### **Capital Markets - Types**

Capital markets are mainly divided into 2 different types.

1. Primary Markets: The primary market is the part of the capital market that deals with the issuance and sale of securities to investors directly by the issuer. Investors buy securities that were never traded before. Primary markets create long term instruments through which corporate entities raise funds from the capital market.
2. Secondary Markets: The secondary market, also called the aftermarket and follow on public offering is the financial market in which previously issued financial instruments such as stock and bonds are bought and sold.

### **Capital Market - Examples**

The examples of capital markets are given below

1. Stock Market: A stock market, equity market or share market is the aggregation of buyers and sellers of stocks, which represent ownership claims on businesses
2. Bond Market: The bond market is a financial market where participants can issue new debt, known as the primary market, or buy and sell debt securities
3. Currency and Foreign Exchange Markets: The foreign exchange market is a global decentralized or over-the-counter market for the trading of currencies. This market determines foreign exchange rates for every currency.

### **Which are the most common capital markets?**

Stock market and Bond market are considered as the most common capital markets.

### **Why do we need the capital market?**

Capital market is a cog in the wheel of the modern economy since capital markets move money from the entities that have money to the entities that require money for productive use.

To learn more about the Indian Economy, visit the linked article.

### **Capital Market - Features**

In capital markets, there are 2 entities, one who supplies capital and the other entity is the one who needs capital.

Usually, entities with surplus capital in the capital markets are retail and institutional investors. Entities seeking capital are people, governments and businesses.

Some common examples of suppliers of capital are

1. Pension funds: A pension fund, also known as a superannuation fund in some countries, is any plan, fund, or scheme which provides retirement income
2. Life insurance companies: Life insurance companies offer contracts between an insurance policy holder and an insurer or assurer, where the insurer promises to pay a designated beneficiary a sum of money (the benefit) in exchange for a premium, upon the death of an insured person (often the policy holder). The Insurance Development and Regulatory Authority of India manages everything related to insurance in India.

3. Non-financial companies: Non-financial companies are those businesses which don't accept deposits or make loans. Examples of non-financial companies are Healthcare, Technology, Industrial, sector related companies.

4. Charitable foundations: A charitable foundation is a category of nonprofit organization that will typically provide funding and support for other charitable organizations through grants.

Some common examples of users of capital

1. People looking to purchase vehicles, homes
2. Governments
3. Non-financial companies.

### **Capital Market - Structure**

Capital markets structure is made of primary and secondary markets.

Primary markets consist of companies that issue securities and investors who purchase those securities directly from the issuing company. These securities are called Initial Public Offerings (IPO). Whenever a company goes public it sells its stocks and bonds to large institutional investors like hedge funds and mutual funds.

Secondary markets are places where the trade of already issued certificates between investors are overseen by regulatory bodies. Issuing companies play no part in the secondary market.

Examples of secondary markets are New York Stock Exchange (NYSE), London Stock Exchange (LSE), Bombay Stock Exchange (BSE).

To know more about the Major Stock Exchanges in India, visit the linked article.

### **Capital Markets - Functions**

1. Capital markets bring together those requiring capital and those having excess capital.
2. Capital markets aim to achieve better efficiency in transactions.
3. It helps in economic growth
4. It ensures there is the continuous availability of funds
5. By ensuring the movement and productive utilisation of capital, it helps in boosting the national income.
6. Minimizes transaction costs and information costs.
7. Makes trading of securities easier for companies and investors.
8. It offers insurance against market risk.

### **Capital market - Advantages**

1. Money moves between people who need capital and who have the capital.
2. There is more efficiency in the transactions.
3. Securities like shares help in earning dividend income.
4. With the passage of time, the growth in value of investments is high.
5. The interest rates provided by securities like Bonds are higher than interest rates given by banks.
6. Can avail tax benefits by investing in stock markets.
7. Scope for a wide range of investments.
8. Securities of capital markets can be used as collateral for getting loans from banks

### **Stock Exchange of India**

- **Capital market** is the market for long-term funds while money market is the market for short-term funds.
- **Capital market of India** is regulated by SEBI (Securities and Exchange Board of India, 1988).
- **A Stock Exchange** provides services for brokers and traders to trade stocks, bonds, and other securities.
- **The Bombay Stock Exchange (BSE)** is a stock exchange located on Dalal Street, Mumbai and is the oldest stock exchange in Asia. The BSE has the largest number of listed companies in the world established in 1875.
- **The National Stock Exchange (NSE)** is the 16th largest stock exchange in the world. It is situated in Mumbai.

### **Insurance**

- Insurance industry includes two sectors, life Insurance and General Insurance.
- LIC was established on 1st September, 1956.
- **Insurance Regulatory and Development Authority of India (IRDAI)** was set-up on 19th April, 2000 to regulate the Insurance Sector IRDA has changed its name to Insurance Regulatory and Development Authority of India in December 2014.

### **Inflation**

Inflation can be defined as a calculated surge in the average prices of goods and services for a longer duration in the economy. It is a macro concept, wherein the effect of inflation is seen over a large basket of goods.

The ultimate effect of inflation is that the value of money is reduced i.e., the purchasing power of money is reduced.

### **Types of Inflation**

The different types of inflation in an economy can be explained as follows:

#### **Demand-Pull Inflation**

This type of inflation is caused due to an increase in aggregate demand in the economy.

Major reasons to support the statement are stated below:

- A growing economy or increase in the supply of money – When consumers feel confident, they spend more and take on more debt. This leads to a steady increase in demand, which means higher prices.
- Asset inflation or Increase in Forex reserves- A sudden rise in exports forces a depreciation of the currencies involved.
- Government spending or Deficit financing by the government – When the government spends more freely, prices go up.
- Due to fiscal stimulus
- Increased borrowing
- Depreciation of rupee

#### **Cost-Push Inflation**

This type of inflation is caused due to various reasons such as:

- Increase in price of inputs
- Hoarding and Speculation of commodities
- Defective Supply chain
- Increase in indirect taxes
- Depreciation of Currency
- Crude oil price fluctuation
- Defective food supply chain
- Low growth of Agricultural sector
- Food Inflation (growth agriculture sector has been averaging at 3.5%)
- Interest rates were increased by RBI

Cost pull inflation is considered bad among the two types of inflation. Because the National Income is reduced along with the reduction in supply in Cost-push type of inflation.

#### **Built-in Inflation**

This type of inflation involves a high demand for wages by the workers which the firms address by increasing the cost of goods and services for the customers.

#### **Remedies**

The different remedies to solve issues related to inflation can be stated as:

## 1. Monetary Policy (Contractionary policy)

The monetary policy of the Reserve Bank of India is aimed at managing the quantity of money in order to meet the requirements of different sectors of the economy and to boost economic growth.

This contractionary policy is manifested by decreasing bond prices and increasing interest rates. This helps in reducing expenses during inflation which ultimately helps halt economic growth and, in turn, the rate of inflation.

## 2. Fiscal Policy

- Monetary policy is often seen separate from the fiscal policy which deals with taxation, spending by government and borrowing. Monetary policy is either contractionary or expansionary.
- When the total money supply is increased rapidly than normal, it is called an expansionary policy while a slower increase or even a decrease of the same refers to a contractionary policy.
- It deals with the Revenue and Expenditure policy of the government.

### Tools of fiscal policy

Direct and Indirect taxes (Direct taxes should be increased and indirect taxes should be reduced).

Public Expenditure should be decreased (should borrow less from RBI and more from other financial institutions)

### **Supply Management measures:**

- Import commodities which are in short supply
- Decrease exports
- Government may put a check on hoarding and speculation
- Distribution through PDS

### Measurement of Inflation

1. Wholesale Price Index (WPI) – It is estimated by Min of Industry and Commerce and measured on a monthly basis, but with a lag of 14 days.
2. Consumer Price Indices – It is calculated by taking price changes for each item in the predetermined lot of goods and averaging them

- ❖ In 2011, CSO introduced three new CPI's
  - CPI – Urban
  - CPI – Rural
  - CPI – Combined

The reason to introduce these new CPI's was that there was no single CPI that could give the effect of inflation as a common man residing in India would experience. The base year for all the three CPI's is 2010.

3. Producer Price Indices – It is a measure of the average change in the selling prices over time received by domestic producers for their output.
4. Commodity Price Indices – It is a fixed-weight index or (weighted) average of selected commodity prices, which may be based on spot or futures price
5. Core Price Indices – It measures the prices paid by consumers for goods and services without the volatility caused by movements in food and energy prices. It is a way to measure the underlying inflation trends.
6. GDP deflator – It is a measure of general price inflation.

### **Effect of Inflation on the Economy**

The effect of inflation on the economy can be stated as:

- The effect of inflation is not distributed evenly in the economy. There are chances of hidden costs for different goods and services in the economy.
- Sudden or unpredictable inflation rates are harmful to an overall economy. They lead to market instability and thereby make it difficult for companies to plan a budget for the long-term.
- Inflation can act as a drag on productivity as companies are forced to mobilize resources away from products and services to handle the situations of profit and losses from inflation.
- Moderate inflation enables labour markets to reach equilibrium at a faster pace.

### **Terms related to Inflation**

1. Disinflation: Reduction in the rate of inflation
2. Deflation: Persistent decrease in price level (negative inflation)
3. Reflation: Price level increases when economy recovers from recession Based on value of inflation

4. Creeping inflation – If rate of inflation is low (upto 3%)
5. Walking/Trotting inflation – Rate of inflation is moderate (3-7%)
6. Running/Galloping inflation – Rate of inflation is high (>10%)
7. Runaway/Hyper Inflation – Rate of inflation is extreme
8. Stagflation: Inflation + Recession (Unemployment)
9. Misery index: Rate of inflation + Rate of unemployment
10. Inflationary gap: Aggregate demand > Aggregate supply (at full employment level)
11. Deflationary gap: Aggregate supply > Aggregate demand (at full employment level)
12. Suppressed / Repressed inflation: Aggregate demand > Aggregate supply. Here government will not allow rising of prices.
13. Open inflation: Situation where price level rises without any price control measures by the government.
14. Core inflation: Based on those items whose prices are non-volatile.
15. Structural inflation: Due to structural problems like infrastructural bottlenecks.

## TAX STRUCTURE IN INDIA

Tax is a compulsory payment by the citizens to the government to meet the public expenditure. It is legally imposed by the government on the taxpayer and in no case taxpayer can deny to pay taxes to the government.

### **Direct Tax**

A direct tax is that tax, which is born by the person on whom it is levied. A direct tax cannot be shifted to other person.

**Composition of Direct Taxes:** Out of 56.3% of

contribution of direct taxes to gross tax revenue in 2011-12, personal income tax contributed 19.5% and corporation tax contributed 39.0%.

### **Structure of Taxes**

Direct Tax	Indirect Tax
Personal Income Tax	Excise Duty
Corporation Tax	Custom Duty
Wealth Tax	Sales Tax
Gift Tax	Service Tax
Land Revenue	Value Added Tax
Profession Tax	Passenger Tax
Stamp Duty and Registration Charges	Entertainment Tax
Securities Transaction Tax	Electricity Duty
Banking Cash Transaction Tax	Motor Vehicles Tax

### **Indirect Tax**

→ These are those taxes, which have their primary burden or impact on one person. But that person succeeds in shifting his burden on to others. Indirect taxation is policy often used to generate tax revenue. Indirect tax is so called as it is paid indirectly by the final consumer of goods and services while paying for purchase of goods or for enjoying services.

→ **Composition of Indirect Taxes:** Out of 42.6% contribution of indirect tax to the total tax revenue in 2011-12, excise contribution was 16.7%, customs contribution was 13.4% and services tax contributed 9.3%.

### **GST (Goods and Services Tax)**

The Goods and Service Tax (GST) has been implemented from July 1, 2017. It incorporates many of the indirect taxes levied by states and the Central Government. Some of the taxes GST replaced include Sales Tax, Central Excise, Duty, Octroi, Service Tax etc. GST has three components

- ✓ CGST (Central Goods and Services act)
- ✓ SGST (State Goods and Services act)
- ✓ IGST (Integrated Goods and Services act)



## **Semester - IV**

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# INDIAN GEOGRAPHY

## At a Glance

### LOCATION

- Lying between latitude 8°4' to 37°6' N and from longitude 68°7' E to 97°25' E, the country is divided into almost equal parts by the Tropic of Cancer (passes from Jabalpur in MP).
- The southernmost point in Indian territory, (in Great Nicobar Island) is the Indira Point (6°45'), while Kanyakumari, also known as Cape Comorin, is the southernmost point of Indian Mainland. The country thus lies wholly in the northern and eastern hemispheres.
- The 82°30' E longitude is taken as the Standard Time Meridian of India, as it passes through the middle of India (from Naini, near Allahabad).

### AREA AND BOUNDARIES

- India stretches 3,214 km from North to South and 2,933 km from East to West.
- Area : 32,87,263 sq. km. Accounts for 2.4% of the total world area and roughly 16% of the world population.
- Mainland India has a coastline of 6,100 km. Including the Lakshadweep and Andaman and Nicobar Islands, the coastline measures about 7516.6 km.
- In India, or the total land mass:
  - Plains : 43.3%,
  - Plateaus : 27.7%,
  - Hills : 18.6%,
  - Mountains : 10.7%
- In the South, on the eastern side, the Gulf of Mannar and the Palk Strait separate India from Sri Lanka.
- Total land neighbours : 7 (Pakistan, Afghanistan, China, Nepal, Bhutan, Bangladesh and Myanmar).
- India's Islands include the Andaman and Nicobar Islands in Bay of Bengal and Lakshadweep, Minicoy and Amindive Islands in the Arabian Sea.

## PHYSIOGRAPHY

- Physiography, India can be divided into 3 units:
  - ✓ Mountains in the North
  - ✓ Plains in the Northern India and the Coast
  - ✓ Plateau region of the South
- To these can be added the fourth, namely, the coasts and islands.

### MOUNTAINS OF INDIA

#### The Himalayas

- Means 'Abode of Snow'. They are one of the youngest fold mountain ranges in the world and comprise mainly sedimentary rocks.
- They stretch from the Indus river in the west to the Brahmaputra river in the east. Total length is about 5000 km. The width of the Himalayas varies from 500 km in Kashmir to 200 km in Arunachal Pradesh. Their average height is 2000m.
- The Eastern Himalayas—made up of Patkai Hills, Naga Hills, Mizo Hills and the Garo, Khasi and Jaintia Hills—are also known as Purvanchal.
- The Pamir, popularly known as the *Roof of the World*, is the connecting link between the Himalayas and the high ranges of Central Asia.
- Can be divided into 3 parallel or longitudinal zones, each with separate features –  
**The Great Himalayas or the Himadri**
- Average elevation extends upto 6000m and some of the world's highest peaks are here—

Mt Everest (or Sagarmatha or Chomo Langma)	8848 m (in Nepal)
Mt Kanchenjunga	8598 m (in India)
Mt Makalu	8481 m (in Nepal)
Mt Dhaulagiri	8172 m (in Nepal)
Mt Cho You	8153 m (in Nepal)
Mt Nanga Parbat	8126 m (in India)
Mt Annapurna	8178 m (in Nepal)
Mt Nanda Devi	7817 m (in India)

- There are few passes and almost all of them have a height above 4,500 m. they include *Shipki La* and *Bara Lapcha La* in Himachal Pradesh, *Burzil* and *Zozi la* in Kashmir, *Niti, Lipulekh* and *Thag La* in Uttarakhand, and *Jelep La* in Sikkim.

### **Lesser Himalayas or The Himachal**

- Average height of mountains is 3700-4500 m.
- Mountains and valleys are disposed in all direction (mountains rising to 500 m and the valleys touching 1000 m).
- Its important ranges are: Dhauladhar, Pir Panjal, Nag Tibba, Mussoorie.
- Important hill resorts are: Shimla, Chhaila, Ranikhet, Chakrata, Mussoorie, Nainital, Almora, Darjeeling.

### **Outer Himalayas or the Shiwaliks**

- Lowest range (average elevation is 900-1200 m).
- Forms the foothills and lies between the Lesser Himalayas and the plains. It is the newest range.

### **Trans-Himalayan Zone**

- This range lies to the north of the Great Himalayas. It has some important ranges like Karakoram, Laddakh, Zanskar, etc. the highest peak in this region is K2 or Godwin Austin (8611 m, in Pak Occupied Kashmir). Other high peaks are Hidden Peak (8068m), Broad Peak (8047 m) and Gasherbrum II (8035 m).
- The longest glacier is Siachin in the Nubra valley, which is more than 72 km long (biggest glacier in the world). Biafo, Baltoro, Batura, Hispar are the other important glaciers in this region.
- This area is the largest snow-field outside the Polar Regions.

### **PENINSULAR MOUNTAINS**

- While the Himalayas are Fold Mountains, they are not.
- The Aravalli mountains** (Rajasthan): World's oldest. Guru Shikhar is the highest peak on which Mount Abu (1,722 m) is situated.
- The Vindhya mountains**
- The Satpura mountains** (Highest point at Dhupgarh {1,350 m} near Pachmarhi).
- The Western Ghats or Sahyadris:** Average height 1200 mtrs, 1600 km long. Its southern part is separated from the main Sahyadri range by *Palghat Gap* (link between Tamil Nadu and Kerala). Other

passes are *Thalghat* (connects Nasik to Mumbai) and *Bhordhat* (connects Pune to Mumbai).

### **FACTS ABOUT POSITION OF STATES**

- UP borders the maximum number of States-8 (Uttarakhand, HP, Haryana, Rajasthan, MP, Chhattisgarh, Jharkhand, Bihar). After UP is Assam, which touches the border of 7 States.
- Tropic of Cancer passes through 8 States: Gujarat, Rajasthan, MP, Chhattisgarh, Jharkhand, WB, Tripura, Mizoram.
- Indian Standard Meridian passes through 5 States : UP, MP, Chhattisgarh, Odisha, AP.
- 9 States form the coast of India. They are : Gujarat, Maharashtra, Goa, Karnataka, Kerala, Tamil Nadu, Andhra Pradesh, Orissa and West Bengal.
- 2 Union Territories, viz. Daman and Diu and Puducherry are also on the coast.
- The Union Territories of Andaman and Nicobar Islands and Lakshadweep are made up of islands only.

- The Eastern Ghats** (Highest peak: Mahendra Giri (1501 m).
- The Nilgiris or The Blue Mountains:** Meeting place of the Western and the Eastern Ghats. Two highest peaks are Doddabetta and Makurti.
- The highest peak of Peninsular India is **Anaimudi** (2695 m) in **Anaimalai Hills**.
- Cardamom hills or Ealaimalai** is the southernmost mountain range of India.

### **The Indian States on International boundaries are :**

<b>Bordering Pakistan</b>	Jammu and Kashmir, Punjab, Rajasthan, Gujarat
<b>Bordering China</b>	Jammu and Kashmir, Himachal Pradesh, Uttarakhand, Sikkim, Arunachal Pradesh
<b>Bordering Nepal</b>	Bihar, Uttarakhand, UP, Sikkim, West Bengal
<b>Bordering Bangladesh</b>	West Bengal, Mizoram, Megha-laya, Tripura, Assam
<b>Bordering Bhutan</b>	West Bengal, Sikkim, Arunachal Pradesh, Assam
<b>Bordering Myanmar</b>	Arunachal Pradesh, Nagaland, Manipur, Mizoram
<b>Bordering Afghanistan</b>	Jammu and Kashmir (Pakistan-occupied area).

**THE PLAINS**

- To the south of the Himalayas and to the north of the Peninsula lies the great plains of North India. They are formed by the depositional works of three major river systems, Indus, Ganga and Brahmaputra. The vast plains of north India are alluvial in nature and the westernmost portion is occupied by the Thar Desert.
- The thickness of the Alluvium is maximum in the Ganga plains and minimum in the Western Plains.
- In the Kerala plains are the backwaters of '*Kayals*', which are the shallow lagoons or inlets of the sea, lying parallel to the coastline. The largest among these is the Vembanad Lake.
- The plains consist of four divisions:
  - ✓ **Bhabar:** Along the foothills of Shiwaliks. Highly porous.
  - ✓ **Tarai:** Re-emergence of streams. Zone of excessive dampness.
  - ✓ **Bhangar:** Older alluvium of the plains. Studded with calcareous formations called '*kankar*'.
  - ✓ **Khadar:** New alluvium and forms the flood plains along the river banks.

**PENINSULAR PLATEAU**

- Spreads south of the Indo-Gangetic plains flanked by sea on three sides. This plateau is shaped like a triangle with its base in the north. The Eastern Ghats and the Western Ghats constitute its eastern and western boundaries, respectively.
- Narmada, which flows through a rift valley, divides the region into two parts: The Malwa Plateau in the north and the Deccan Plateau in the south.
- Most of the rocks are of the igneous type.
- Vindhya Plateau is situated south of Malwa plateau.
- Chhota Nagpur Plateau lies to the west of Bengal basin, the largest and most typical part of which is the Ranchi plateau.
- The Deccan Plateau is the largest plateau in India. It is made up of lava flows in the Cretaceous-Eocene era through the fissure eruptions.

**ISLAND OF INDIA**

- Total coastline of India: 7516 km. Longest coastline: Gujarat (Second longest is of Andhra Pradesh).

- Indian territorial limits include 2 Island Groups :

**The Andaman and Nicobar Group**

- Andamans is a group of about 550 Islands of which the largest is Middle Andaman.
- The Andamans are believed to be extensions of mountains system in the N.E. part of the country.
- Saddle Peak (737 m) in N. Andaman is the highest peak.
- The Nicobars is a group of 22 islands of which the largest is Great Nicobar. Most of them are volcanic in nature.
- Great Nicobar is the southernmost island and is only 147 km away from Sumatra island of Indonesia.
- Volcanic Island: Barren and Narcondam Islands. Barren is in the process of eruption these days after lying dormant for 200 years.

**The Arabian Sea Group**

- All the islands in the Arabian Sea (Total 36) are coral islands and are surrounded by Fringing Reefs (North: Lakshadweep, South: Minicoy)

**Note :**

- ❖ *Ten Degree Channel* separates Andamans from Nicobars (Little Andaman from Car Nicobar)
- ❖ *Duncan Passage* lies between South Andaman and Little Andaman.
- ❖ *Nine Degree Channel* separates Kavaratti from Minicoy Island.
- ❖ *Eight Degree Channel* separates Minicoy Island (India) from Maldives.

## **RIVERS OF INDIA**

- In India, the rivers can be divided into two main groups:
  - ✓ Himalayan Rivers
  - ✓ Peninsular Rivers

**HIMALAYAN RIVERS**

- In this three major river systems are there:
 

**The Indus System**
- It has a total length of 2880 km (709 km in India). Rises in Tibet (China) near Mansarovar Lake.
- In Jammu and Kashmir, its Himalayan tributaries are: Zanskar, Drass, Gartang, Shyok, Shigar, Nubra, Gilgit, etc.
- Its most important tributaries, which join Indus at various places, are: Jhelum (725

- km), Chenab (1800 km), Ravi (720 km), Beas (470 km) and Sutlej (1050 km).
  - Sources: Jhelum from Verinag (South East Kashmir), Chenab from Bara Lacha Pass (Lahaul-Spiti, Himachal Pradesh), Ravi from Kullu Hills near Rohtang Pass in Himachal Pradesh, Beas from a place near Rohtang Pass in Himachal Pradesh and Satluj from Mansarovar-Rakas lakes in West Tibet.
  - In Nari Khorsan province of Tibet Satluj has created an extraordinary canyon, comparable to the Grand Canyon of Colorado (US).
  - According to the Indus Water Treaty signed between India and Pakistan in 1960, India can utilize only 20% of the total discharge of Indus, Jhelum and Chenab.
- The Ganga System**
- It is 2525 km long of which 1450 km is in Uttarakhand and Uttar Pradesh, 445 km in Bihar and 520 km in West Bengal.
  - The Ganga, the head stream is constituted of two main rivers – Bhagirathi and Alaknanda, which combine at Devprayag to form Ganga.
  - Before Alakananda meets Bhagirathi at Devprayag, Mandakini meets Alakananda at Rudraprayag.
  - **Sources:** Bhagirathi from Gaumukh, Alaknanda from Badrinath, Mandakini from Kedarnath (all from Uttarakhand).
  - **Yamuna** (1375 km) is its most important tributary (on right bank). It rises at the Yamunotri glacier in Uttarakhand. It runs parallel to Ganga for 800 km and joins it at Allahabad. Important tributaries of Yamuna are Chambal (1050 km), Sind, Betwa (480 km) and Ken (all from south).
  - Apart from Yamuna, other tributaries of Ganga are Ghaghra (1080 km), Son (780 km), Gandak (425 km), Kosi (730 km), Gomti (850 km), Damodar (541 km). Kosi is infamous as ‘Sorrow of Bihar’, while Damodar gets the name ‘Sorrow of Bengal’ as these cause floods in these regions.
  - Hooghly is a distributary of Ganga flowing through Kolkata.
- The Brahmaputra system**
- It has a total length of 2900 km. It rises in Tibet (from Chemayungdung glacier), where it is called Tsangpo, and enters the Indian territory (in Arunachal Pradesh)

- under the name Dihang.
- Important Tributaries: Subansiri, Kameng, Dhansiri, Manas, Teesta.
- In Bangladesh, Brahmaputra is known by the name of Jamuna while Ganga gets the name Padma. Their combined stream is known as Padma only. Meghna is the most important distributary before it enters the Bay of Bengal.
- The combined stream of Ganga and Brahmaputra forms **The biggest delta in the world, the Sundarbans**, covering an area of 58,752 sq. km. Its major part is in Bangladesh.
- On Brahmaputra is the river island, Majuli in Assam, the biggest river island in the world.
- Brahmaputra, or the Red River, is navigable for a distance of 1384 km up to Dibrugarh and serves as an excellent inland water transport route.

**RIVERS OF THE PENINSULA**

- Different from the Himalayan rivers because they are seasonal in their flow (while Himalayan rivers are perennial).
- They can be divided into two groups.
  - A. EAST FLOWING RIVERS (or Delta forming rivers)**
  - **Mahanadi** (858 km): Rises in Raipur distt. in Chhattisgarh. Main tributaries: Ib, Seonath, Hasdo, Mand, Jonk, Tel, etc.
  - **Godavari** (1465 km): Also called Vriddha Ganga or Dakshin Ganga. It is the longest peninsular river. Rises in Nasik. Main tributaries: Manjra, Penganga, Wardha, Indravati, Wain-ganga, Sabari, etc.
  - **Krishna** (1326 km): Rises in Western Ghats near Mahabaleshwar. Main tributaries: Koyna, Dudhganga, Panchganga, Malprabha, Ghatprabha, Bhima, Tungabhadra, Musi, etc.
  - **Cauvery** (805 km): It is the largest peninsular river (maximum amount of water). Infact, it is the only peninsular river which flows almost throughout the year. Known as the ‘Ganga of the South’. It rises from the Brahmagiri range of Western Ghats. Main tributaries: Hemavati, Lokpawni, Shimsa. It is less seasonal than others as its upper

catchment area receives rainfall during summer by the S.W. monsoon and the lower catchment area during winter season by the retreating N.E monsoon. Its 90% – 95% irrigation and power production potential is already being harnessed.

- **Subarnarekha** (395 km) and **Brahmani** (705 km): Rises from Ranchi Plateau.

### **B. WEST FLOWING RIVERS**

- **Narmada** (1057 km) has only 1/10<sup>th</sup> part in Gujarat. Rises in Amarkantak Plateau and flows into Gulf of Khambat. It forms the famous Dhuan Dhar Falls near Jabalpur. Main tributaries: Hiran, Burhner, Banjar, Shar, Shakkar, Tawa, etc.
- **Tapti** (724 km): Rises from Betul distt in MP. Also known as twin or handmaid of Narmada. Main tributaries: Purna, Betul, Arunavati, Ganjal, etc.
- **Sabarmati** (416 km): Rises from Aravallis in Rajasthan.
- **Mahi** (560 km): Rises from Vindhya in MP.
- **Luni** (450 km): Rises from Aravallis. Also called Salt River. It is finally lost in the marshy grounds at the head of the Rann of Kuchchh.
- **Sharavati** is a west flowing river of the Sahyadris. It forms the famous **Jog** or **Gersoppa** or **Mahatma Gandhi Falls** (289 m), which is the highest waterfall in India.

### **INLAND DRAINAGE**

Some rivers of India are not able to reach the sea and constitute inland drainage. Ghaggar (494 km) is the most important of such drainage. It is a seasonal stream which rises on the lower slopes of the Himalayas and gets lost in the dry sands of Rajasthan near Hanumangarh. It is considered the old **Saraswati** of the Vedic times.

#### **Note :**

- ❖ The largest man-made lake in India **Indira Sagar Lake**, which is the reservoir of Sardar Sarovar Project, Onkareshwar Project and Maheshwar Project in Gujarat. MP.
- ❖ **Chilka Lake** (Odisha) is the largest brackish water lake of India. Otherwise also, it is

the largest lake of India. It is the largest wintering ground for migratory birds on the Indian sub-continent. In 1981, Chilka Lake was designated the first Indian wetland of international importance under the Ramsar Convention.

- ❖ **Wular lake** (J & K) is the largest fresh water lake of India. Dal Lake is also there in J & K.
- ❖ From **Sambhar** and **Didwana Lake** (Rajasthan), salt is produced.
- ❖ Other important lakes are **Vembanad** in Kerala and **Kolleru** and **Pulicat** in A.P.
- ❖ Three important Gulfs in the Indian territory are :
  - **Gulf of Kuchch** (west of Gujarat): Region with highest potential of tidal energy generation.
  - **Gulf of Cambay or Gulf Khambat** (Gujarat): Narmada, Tapti, Mahi and Sabarmati drain into it.
  - **Gulf of Mannar** (south east of Tamil Nadu): Asia's first marine biosphere reserve.

### **THE CLIMATE OF INDIA**

- India has tropical monsoon type of climate. It is greatly influenced by the presence of the Himalayas in the north as they block the cold air masses from Central Asia. It is because of them only that the monsoons have a watershed in India.
- The tropic of Cancer divides India into two almost equal climate zones, namely, the northern zone and the southern zone. The warm temperature or the subtropical climate of the northern zone gives it cold winter seasons and the hot summer seasons. The southern tropical climatic zone is warmer than the north and does not have a clear-cut winter season.
- The northern zone does not have the mid-day sun vertically overhead during any part of the year; the southern zone has the midday sun almost vertically overhead at least twice every year.

#### **SEASONS IN INDIA**

- In India, the year can be divided into four seasons, resulting from the monsoons which occur mainly due to the differential heating of land movement of the sun's vertical rays.
- The vertical rays of the sun advance towards Tropic of Cancer from mid-March, due to which **hot and dry weather** arrives. As temperature rise over most of northern and Central India, a vast trough of low pressure is created. The highest tempera-

- ture experienced in South India is in April while in North it is in May and June.
- This part of the year is marked by a dry spell and the north-western parts of the country experience hot, dry winds, called *loo*. In this period, the country also experience storms/dust storms at various places.
    - ✓ Tornado like dust storms in Punjab and Haryana, called '*Andhis*' in Up and '*Kalbaisakhis*' in West Bengal. They involve strong conventional movements causing some precipitation.
    - ✓ The '*Norwesters*' originate over the Chhotanagpur Plateau and blow in the north-east direction which brings about 50 cm of rainfall in Assam and about 10 cm rainfall in West Bengal and Orissa. This rainfall is very useful for Assam tea and spring rise crops of West Bengal.
    - ✓ Similarly, '*Cherry Blossoms*' are there in Karnataka, beneficial to coffee plantation and '*Mangoshowers*' in elsewhere South India, which beneficial to mango crops.
  - This weather is followed by hot, wet weather from June to September. In May, the **South-west monsoon** sets in, The normal dates of onset of the monsoon are May 20 in the Andaman and Nicobar Islands, June 3 in the Konkan, June 15 in Kolkata and June 29 in Delhi.
  - The south-west monsoon enters the country in two currents, one blowing over the Bay of Bengal and the other over the Arabian Sea. This monsoon causes rainfall over most of the country (except Tamil Nadu and Thar Desert area). The S. W. monsoon entering from Western Ghats causes heavy rainfall over Kerala coast, but Tamil Nadu falls on the leeward side. In the Thar area, the winds blow parallel to the Aravallis and do not cause rain. The Bay of Bengal current cause heavy rainfall in the north east parts of the country and a part of it turns west along the Himalayas over the Indo-Gangetic plains causing rainfall in this region. But the Bay of Bengal current, by the time of reaches W. Rajasthan, rains out of moisture.
  - Bay of Bengal branch after crossing the deltaic region, enters the Khasi valley in Meghalaya and gets entrapped in it due to funnel shape of the region. It strikes Cherrapunji in a perpendicular direction causing heavies rainfall in Mawsinram (Approx. 1400 cm).
  - From mid-September to mid-December, the monsoon retreats. As the sun's vertical rays start shifting towards the Tropic of Capricorn, the low pressure area starts moving south and winds finally start blowing from land to sea. This is called **north-east monsoon**. The withdrawal of monsoon is a much more gradual process than its onset. It causes rainfall in Tamil Nadu as the winds pick some moisture from Bay of Bengal. This explains the phenomenon why Tamil Nadu remains dry when the entire country receives rain and why it gets rain when practically the entire country is dry.
  - The **Cold and dry weather** starts in early December. In this, the average temperature in south is 24°-25°C, and while in the north is 10°-15°C. In the latter part of December and in January, the dry spell is broken by the **westerly depressions** (temperate cyclones) from Mediterranean Sea, which causes some rain in north-west India.
  - Almost all the precipitation in India is caused by the monsoons and it is primarily **orographic** in nature. Cyclonic storms provide only a little rain, mainly in the north.
- CLIMATIC REGIONS OF INDIA**
- India can be divided into a number of climatic regions.
  - **Tropical Rain Forests:** Found in the west coastal plains, the Western Ghats and parts of Assam. Characterized by high temperatures throughout the year. Rainfall, though seasonal, is heavy-about 200 cm annually during May-November.
  - **Tropical Savanna Climate:** In most of the peninsula region except the semi-arid zone in the leeward side of the Western Ghats. It is characterized by long dry weather throughout winter and early summer and high temperature (above 18.2°C); annual rainfall varies from 76 cm in the west to 150 cm in the east.
  - **Tropical Semi-Arid steppe Climate:** It prevails in the rain-shadow belt running southward from Central Maharashtra to Tamil Nadu in the leeward side of the Western Ghats and the Cardamom Hills. It is characterized by low rainfall which varies from 38 cm to 80 cm, high temperature between 20° and 30°.
  - **Tropical and Subtropical Steppes:** Large areas in Punjab, Haryana and Kutch re-

- gion. Temperature varies from 12-35°C. The maximum temperature reaches up to 49°C. The annual rainfall, varying from 30.5-63.5 cm, is also highly erratic.
- **Tropical desert:** This climate extends over the western parts of Barmer, Jaisalmer and Bikaner districts of Rajasthan and parts of Kutch. It is characterized by scanty rainfall (30.5 cm), which is highly erratic. Rains are mostly in the form of cloud-burst. Mean monthly temperature is uniformly high (about 35°C).
  - **Humid Subtropical Climate with Dry Winters :** This area includes south of the Himalayas, east of the tropical and subtropical steppes and north of tropical savannah. Winters are mild to severe while summers are extremely hot. The annual rainfall varies from 63.5 cm to more than 254 cm, most of it received during the south west monsoon season.
  - **Mountain Climate:** Such type of climate is seen in mountainous region which rise above 6,000 m or more such as the Himalayas and the Karakoram Range.

## SOIL IN INDIA

- Indian Council of Agricultural Research (ICAR) has divided Indian soils into eight major groups.

### ALLUVIAL SOIL :

- They are by far the largest and the most important soil group of India. They are composed of sediments deposited by rivers and the waves. Their chemical composition makes them one of the most fertile in the world. Usually deficient in nitrogen and humus (thus fertilizers are needed).
- Occupy the plains (from Punjab to Assam) and also occur in the valleys of Narmada and Tapti in M.P. and Gujarat, Mahanadi in the MP and Orissa, Godavari in A.P. and Cauvery in T.N.
- Can be divided into **Khadar** (new) and **Bhangar** (older, most clayey and *kankary* alluvium).

### BLACK SOIL :

- Also called *Regur* and is ideal for cotton crop. These soils have been formed due to the solidification of lava spread over large areas during volcanic activity in the Deccan Plateau, thousands of years ago.
- They are black due to compounds of iron and aluminium (also because of titaniferous magnetite).
- Mainly found in Deccan Plateau -

Maharashtra, Gujarat, M.P. Karnataka, Andhra Pradesh, Tamil Nadu.

- Apart from cotton cultivation, these fertile soils are suitable for growing cereals, oilseeds, citrus fruits and vegetables, tobacco and sugarcane.
- They have high moisture retention level.
- Lack in phosphorus, nitrogen and organic matter.

### RED SOIL :

- They are mainly formed due to the decomposition of ancient crystalline rocks like granites and gneisses and from rock types rich in minerals such as iron and magnesium. The term 'red soil' is due to wide diffusion of iron oxides through the materials of the soil.
- Covers almost the whole of Tamil Nadu, Karnataka, Andhra Pradesh, S.E. Maharashtra, Chhattisgarh, parts of Orissa, Jharkhand and Bundelkhand.
- Generally deficient in nitrogen, humus and phosphorous, but rich in potash.
- Suitable for rice, millets, tobacco and vegetables (also groundnuts and potatoes at higher elevations)

### LATERITE SOIL :

- Found in typical monsoon conditions – under conditions of high temperature and heavy rainfall with alternate wet and dry periods. The alterations of wet and dry season leads to the leaching away of siliceous matter and lime of the rocks and a soil rich in oxides of iron and aluminium compounds is left behind.
- Found in parts of Western Ghats, Eastern Ghats, Rajmahal hills, Maharashtra, Karnataka, Kerala, Odisha, West Bengal, Assam, Tamil Nadu, etc.
- Poor in nitrogen and minerals.
- Best for tea, coffee, rubber, cinchona, coconut and suitable for rice and millet cultivation if manured.

### FOREST AND MOUNTAIN SOILS :

- Such soils are mainly found on the hill slopes covered by forests. The formation of these soils is mainly governed by the characteristic deposition of organic matter derived from forest growth.
- In the Himalayan region, such soils are mainly found in valley basins, depressions and less steeply inclined slopes. Apart from the Himalayan region, the forest soils occur in higher hills in south and the peninsular region.
- Very rich in humus but are deficient in

- Potash, phosphorous and lime and needs fertilizers.
- Plantation of tea, coffee, spices and tropical fruits.

### **ARID AND DESERT SOILS :**

- A large part of the arid and semi-arid region in Rajasthan and adjoining areas of Punjab of Haryana lying between the Indus and the Aravallis receiving receiving less than 50 cm of annual rainfall is affected by desert conditions.
- This area is covered by a mantle of sand which inhibits soil growth.
- The phosphate content of these soils is as high as in normal alluvial soils. Nitrogen is originally low but its deficiency is made up to some extent by the availability of nitrogen in the form of nitrates. Thus the presence of phosphates and nitrates make them fertile soils wherever moisture is available.
- The change in the cropping pattern in the Indira Gandhi Canal Command Area are a living example of the utility of the desert soils.

### **SALINE AND ALKALINE SOILS :**

- In the drier parts of Bihar, UP, Haryana, Punjab, Rajasthan and Maharashtra, are salt-impregnated or alkaline soils. Known by different names: Reh, kallar, usar, etc.
- Some of the salts are transported in solution by the rivers and canals, which percolates in the sub-soils of the plains.
- The accumulation of salts makes the soil infertile and renders it unfit for agriculture.

### **PEATY AND MARSHY SOILS :**

- Originate in the humid regions as a result of accumulation of large amounts of organic matter in the soil. They contain considerable amount of soluble salts and 10 – 40% of organic matter.
- Peaty soils are found in Kottayam and Alappuzha districts of Kerala, where it is called Kari.
- Marshy soils, high in vegetable matter, are found in northern Bihar, coastal parts of Odisha, Tamil Nadu and West Bengal and parts of UP.

### **SOIL EROSION**

- Acute in hilly and dry regions.
- Causes – depletion of forests, wrong use of lands such as cultivation on very steep slopes, cattle rearing. It ultimately leads to Badland Topography.

- Remedy – Afforestation, contour cultivation etc.

## **NATURAL VEGETATION IN INDIA**

### **TROPICAL WET EVERGREEN FORESTS:**

- In areas over 250 cm rainfall. In Western Ghats, hilly areas in N.E. India and Andaman and Nicobar Islands.
- Trees are rosewood, shisham, ebony, ironwood, etc.

### **TROPICAL MOIST DECIDUOUS FORESTS:**

- In areas having rainfall between 100-200cm. In peninsular region and along the foothills of Himalayas in Shivaliks, Bhabhar and Tarai.
- The trees of these forests drop their leaves for about 6-8 weeks during the spring and early summer when sufficient moisture isn't available.
- Tree are teak, sal, bamboo, sandalwood, rosewood etc.

### **THORN FORESTS:**

- In areas having rainfall between 25 and 80 cm. In arid regions of Rajasthan, Punjab, Haryana and Gujarat.
- Trees are palm, acacia, etc.

### **HILL FORESTS:**

- In hills of S. India and the Himalayas.
- The type of trees depends upon the height of the mountain: sal and bamboo below 100 m; oaks, chestnuts and other fruit trees, and chir forests between 1000 and 2000 m; pine, deodar, silver fern and spruce between 1600 and 3300m; above 3600 m alpine forests with trees like silver firs, pines, birches, etc. Alpine forests give way to Alpine grasslands and scrubs as we move up further.

### **TIDAL OR MANGROVE FORESTS:**

- Also known as Littoral or Swamp Forests.
- Occur along the sea coast and in the estuaries of rivers, especially in Sunderbans and the Andamans.
- Most important tree is Sundari. It provides hard and durable timber which is used for construction and building purposes as well as for making boats.

### **Note :**

- ❖ According to the National Forest Policy, the minimum desired area which is considered safe for a tropical country like India is about 33%. At present, about 23.81% India is covered with forests (i.e. 7829 million hectare).
- ❖ Madhya Pradesh has the largest area under forests (11.24% of the total forest land in the

- country), following by Arunachal Pradesh and Chhattisgarh.
- ❖ As per percentage of forest area to total geographic area, first is Mizoram (90.68%), followed by Lakshadweep (84.56%), Chandigarh, Delhi, Daman & Diu, Goa and Kerala.
- ❖ Arunachal Pradesh has the highest per capita forest area.
- ❖ In Mangrove forests, West Bengal holds the first position, followed by Gujarat and Andaman and Nicobar Islands.
- ❖ The lowest forest percentage is in Haryana and Punjab, because of the extensive agriculture.

### **□ NATIONAL PARKS AND WILD LIFE SANCTUARIES**

- There are 104 National Parks and 515 Wildlife Sanctuaries in India.
- Madhya Pradesh and Andaman and Nicobar Islands have the maximum number of National Parks (9 each) while Andaman and Nicobar Islands has 96 and Maharashtra has 36 Wildlife Sanctuaries (maximum in India).

Gir Forests	Home of Asiatic lion. In Gujarat
Kaziranga Sanctuary	One horned rhino. In Assam
Manas Sanctuary	One horned rhino. In Assam
Chandraprabha Sanctuary	In Uttar Pradesh
Ghana or Keoladeo Bird Sanctuary	In Bharatpur, Rajasthan
Dachigam Sanctuary	For Hangul. In Kashmir
Corbett National Park (formerly Hailey National Park)	In Uttarakhand. Home of tiger (India's first National Park)
Kanha National Park	In Madhya Pradesh
Shiv Puri National Park	In Madhya Pradesh
Hazaribagh National Park	In Jharkhand
Periyar Game Sanctuary	In Kerala. For elephants
Dudhwa National Park	In Uttar Pradesh
Vedanthangal Bird Sanctuary	In Tamil Nadu
Nokrek National Park	In Meghalaya
Sariska Sanctuary	In Rajasthan
Ranthambhor National Park	In Rajasthan

Namdapha National Park	In Arunachal Pradesh
Keibul Lamjao Floating National Park	In Manipur
Palamau Tiger Project	In Bihar
Simlipal National Park	In Odisha
Ranganthittu Bird Sanctuary	In Mysore, Karnataka
Nagarhole National Park	In Karnataka
Mudumalai Santuary	In Tamil Nadu
Balpakram Santuary	In Meghalaya
Bandipur Sanctuary	Along the Karnataka-Tamil Nadu border
Jaldapara Sanctuary	In West Bengal. For rhinos
Wild Ass Santuary	In Rann of Kutch, Gujarat. For wild ass

#### **Note :**

- ❖ India's first national park was established in 1936 as Hailey National Park, now known as Jim Corbett National Park. All national park lands encompass a total 39,919 sq. km, comprising 1.21% of India's total surface area.

### **□ BIOSPHERE RESERVES IN INDIA**

- The biosphere reserve programme was launched by the UNESCO in 1971 under the aegis of its Man and Biosphere (MAB) Program, to provide a global network of protected areas for conserving natural communities.
- In India, the first biosphere reserve. Nilgiri biosphere reserve-came into being in 1986. So far, 18 biosphere reserves have been set up in the country.

1. Nilgiri (Western Ghats)
2. Nanda Devi (Uttarakhand)
3. Nokrek (Meghalaya)
4. Manas (Assam)
5. Sunderbans (West Bengal)
6. Gulf of Mannar (Tamil Nadu)
7. Great Nicobar (Andaman and Nicobar Islands)
8. Simlipal (Odisha)
9. Dibru-Saikhowa (Assam)
10. Dehang Dibang (Arunachal Pradesh)
11. Pachmarhi (MP)
12. Khangchendzonga (Parts of Kanchanjunga Hills)
13. Agastyalamai (Kerala)
14. Achaanak Maar-Amarkantak (MP)
15. Rann of Kutch/Gyan Bharti Reserve
16. Cold Desert (Himachal Pradesh)
17. Seshachalam Hills Andhra Pradesh)
18. Panna (Madhya Pradesh)

**Note :**

- ❖ Out of these 18, Nilgiri, Sunderbans, Nanda Devi, Nicobar Islands, Pachmarhi, Nokrek, Simlipal, Gulf of Mannar and Achaanak maar Amarkantak have been recognized on World Network of Biosphere Reserves by UNESCO.

**□ PROJECT TIGER**

- It was launched on April 1, 1973 to ensure maintenance of viable population of the tigers in India.
- There are many tiger reserves in the country. They are :

Name of Tiger Reserve	State
1. Bandipur Tiger Reserve	Karnataka
2. Jim Corbett Tiger Reserve	Uttarakhand
3. Kanha Tiger Reserve	Madhya Pradesh
4. Manas Tiger Reserve	Assam
5. Melghat Tiger Reserve	Maharashtra
6. Palamau Tiger Reserve	Jharkhand
7. Ranthambore Tiger Reserve	Rajasthan
8. Simlipal Tiger Reserve	Odisha
9. Sunderbans Tiger Reserve	West Bengal
10. Periyar Tiger Reserve	Kerala
11. Sariska Tiger Reserve	Rajasthan
12. Buxa Tiger Reserve	West Bengal
13. Indravati Tiger Reserve	Chhattisgarh
14. Namdapha Tiger Reserve	Arunachal Pradesh
15. Dudhwa Tiger Reserve	Uttar Pradesh
16. Kalakkad Mundanthurai Tiger Reserve	Tamil Nadu
17. Valmiki Tiger Reserve	Bihar
18. Pench Tiger Reserve	Madhya Pradesh
19. Tadoba Andhari Tiger Reserve	Maharashtra
20. Bandhavgarh Tiger Reserve	Madhya Pradesh
21. Panna Tiger Reserve	Madhya Pradesh
22. Dampa Tiger Reserve	Mizoram
23. Bandhra Tiger Reserve	Karnataka
24. Pench Tiger Reserve	Maharashtra
25. Pakhui Tiger Reserve	Arunachal Pradesh
26. Nameri Tiger Reserve	Assam
27. Satpura Tiger Reserve	Madhya Pradesh
28. Annamalai Tiger Reserve	Tamil Nadu
29. Udanti-Sitanadi Tiger Reserve	Chhattisgarh
30. Satkosia Tiger Reserve	Odisha
31. Kaziranga Tiger Reserve	Assam
32. Achanakmar Tiger Reserve	Chhattisgarh
33. Dandeli-Anshi National Park	Karnataka
34. Sanjay-Dubri Tiger Reserve	Madhya Pradesh
35. Mudumalai Tiger Reserve	Tamil Nadu
36. Nagarahole Tiger Reserve	Karnataka
37. Parambikulam Tiger Reserve	Kerala
38. Sahyadri Tiger Reserve	Maharashtra
39. Biligirirangam Swami Temple Tiger Reserve	Karnataka
40. Kaval Tiger Reserve	Telangana
41. Sathyamangalam Tiger Reserve	Tamil Nadu
42. Mukundra Hills Tiger Reserve	Rajasthan
43. Nawegaon-Nagzira Tiger Reserve	Maharashtra
44. Nagarjunasagar-Srisailam Tiger Reserve	Andhra Pradesh
45. Pilibhit Tiger Reserve	Uttar Pradesh
46. Bor Tiger Reserve	Maharashtra
47. Rajaji Tiger Reserve	Uttarakhand

**Note :**

- ❖ Nagarjunasagar-Srisailam Tiger Reserve in Andhra Pradesh and Telangana is the largest Tiger Reserve in India

**□ PROJECT ELEPHANT**

- It was launched in February 1992, to assist States having wild elephants to ensure long term survival of identified viable populations of elephants in their natural habitat.
- There are 28 Elephant Reserves in India.

## AGRICULTURE IN INDIA

**□ CROPPING SEASONS IN INDIA**

**KHARIF CROPS :**

- Sown in summers between May and July, and harvested after the rains, in September and October.
- Eg.: Rice, jowar, bajra, maize, cotton, jute, sugarcane, tobacco, groundnut, pulses, etc.

**RABI CROPS:**

- Sown at the beginning of winter and harvested before the onset of the summer season, between February and April.
- Eg.: Wheat, barley, oilseeds, gram, potatoes, etc.

**ZAYAD CROPS:**

- They are raised between April and June.
- Eg.: Melon, watermelon, cucumber, toris, leafy and other vegetables.

**CASH CROPS (COMMERCIAL CROPS):**

- Grown mainly for the market, only a small portion of the product is consumed by the farmers themselves (cotton, sugarcane etc.)

**□ TOP-3 CROP PRODUCING STATES**

Rice	West Bengal, Andhra Pradesh, Uttar Pradesh
Wheat	Uttar Pradesh, Punjab, Haryana
Maize	Andhra Pradesh, Karna-taka, Maharashtra
Bajra	Rajasthan, Gujarat, Uttar Pradesh
Jawar	Maharashtra, Karnataka, Madhya Pradesh
Coarse Grains	Rajasthan, Maharashtra, Karnataka
Total Food Grains	Uttar Pradesh, Punjab, Andhra Pradesh
Sugarcane	Uttar Pradesh, Maharashtra, Tamil Nadu
Cotton	Gujarat, Maharashtra, Andhra Pradesh
Jute & Mesta	West Bengal, Bihar, Assam
Total Oil Seeds	Madhya Pradesh, Maharashtra, Gujarat
Total Pulses	Maharashtra, Madhya Pradesh, Andhra Pradesh
Tea	Assam, West Bengal, Himachal Pradesh
Coffee	Karnataka, Kerala, Tamil Nadu
Rubber	Kerala, Tamil Nadu, Karnataka
Silk	Karnataka, West Bengal, Assam
Tobacco	Gujarat, Andhra Pradesh, Karnataka
Potato	Uttar Pradesh, West Bengal, Bihar
Onion	Maharashtra, Gujarat, Karnataka
Clove	Kerala, Tamil Nadu
Black Pepper	Kerala, Tamil Nadu
Red Chilli	Tamil Nadu, Andhra Pradesh
Turmeric	Andhra Pradesh, Odisha, Tamil Nadu
Groundnut	Gujarat, Andhra Pradesh, Tamil Nadu
Rapeseed & Mustard	Rajasthan, Uttar Pradesh, Haryana
Soyabean	Madhya Pradesh, Maharashtra, Rajasthan

**JHUM CULTIVATION**

- Shifting type of cultivation practiced in the hill slopes of Assam, Arunachal Pradesh, Mizoram and Nagaland.
- In this, the trees are felled and set on fire. The ash of the burnt trees and the other vegetation adds to the fertility of soil. This land is used for 2-3 years till the soil gets exhausted and the jhum is abandoned.

- The cultivators then move on to the other patch of forest land.
- Known by different names: Ladang (Malaysia), Chengin (Philippines), Milpa (Mexico), Monuko (Venezuela), Mazole (Zaire basin), Chena (Sri Lanka).

## MINERAL RESOURCES OF INDIA

<b>Coal</b>	West Bengal (Raniganj, Burdwan, Bankura, Purulia, Birbhum, Jalpaiguri, Darjeeling), Jharkhand (Jharia, Giridih, Kharhawadi, Bokaro, Hajaribagh, Karnapura, Rampur, Palamau), Odisha (Rampur, Hindgir, Talcher, Sambal), Madhya Pradesh and Chhattisgarh (Rewa, Pench valley, Umaria, Korba, Sohagpur, Mandi river area, Kanha valley, Betul), etc. Power sector is the largest consumer of coal in India followed by steel industry, cement industry etc.
<b>Manganese</b>	Odisha, Maharashtra (Nagpur, Bhandara, Ratnagiri), Madhya Pradesh (Balaghat, Chhindwara), Karnataka (Keonjharpur, Bonai, Kalahandji), Andhra Pradesh (Kadur, Garibadi).
<b>Copper</b>	Madhya Pradesh (Balaghat), Rajasthan (Khetri), Jharkhand (Singbhum, Masobani, Surda), Karnataka (Chitradurg, Hassan).
<b>Mica</b>	Jharkhand (Hazaribagh, Giridih, Kodarma), Bihar (Gaya, Bhagalpur), Andhra Pradesh (Guntur, Vizag, Kurnool), Rajasthan (Bhilwara, Udaipur, Jaipur).
<b>Petroleum</b>	Assam (Digboi, Naharkatiya, Badarpur, Mafusipur and Pailharia), Gujarat (Ankleswar, Khambat, Kalol), Mumbai High, Bassein (south of Mumbai High), etc. Recently oil has been discovered in Cauvery basin Krishna and Godavary basin, Khambat basin, etc.
<b>Iron</b>	India possesses Haematite, a very high-grade iron ore. In Madhya Pradesh (Bailadila, Jabalpur), Goa (North Goa), Karnataka (Babubudan hills, Chikmagalur, Hospet), Jharkhand (Singbhum, Naomundi), Andhra Pradesh, Odisha. India is the fifth largest exporter of iron ore in the world. Japan is the biggest buyer accounting for about 3/4 <sup>th</sup> of India's total exports. Major ports handling iron ore export are Vishakhapatnam, Paradip, Marmagao and Mangalore.
<b>Bauxite</b>	Chief ore for producing aluminium. In Odisha (Kalahandi, Koraput, Sundargarh, Bolangir, Sambalpur), Jharkhand (Lohardaga, Gumla), Madhya Pradesh (Jabalpur, Mandla, Shahdol, Katni, Balaghat), Maharashtra, Andhra Pradesh, Gujarat, Tamil Nadu.
<b>Gold</b>	Karnataka (Kolar, Hutt, Raichur), Andhra Pradesh (Ramgiri and Yeppannam goldfields in Chittoor and Anantapur districts).
<b>Silver, Zinc and Lead</b>	Rajasthan (Zawar mines near Udaipur), Andhra Pradesh (Mysore, Chitradurg), Karnataka (Kolar mines).
<b>Uranium</b>	Jharkhand (Jaduguda), Rajasthan (Ajmer), Andhra Pradesh (Nellore, Nalgonda), Karnataka (Gulbarga).
<b>Thorium</b>	Kerala Coast (From Monazite sand), rocks of Aravallis in Rajasthan.

### OIL REFINERIES

- There are 22 refineries in India, 17 in public sector, two in joint sector and three in private sector. Public sector refineries are located at Digboi, Guwahati, Bongaigaon, Barauni, Mangalore, Haldia, Koyali, Mathura, Kochi, Chennai, Vishakhapatnam, Mumbai (2), Panipat, Narimanam, Numaligarh and Tatipaka. Joint Sector Refineries are located at Bina in Madhya Pradesh and Bhatinda in Punjab. The two Private Sector Refineries of Reliance Limited are Jamnagar, Gujarat, while Essar's Refineries is at Vadinar, Gujarat.

Haldia Refinery (IOC)	Mumbai Refinery (BPCL)
Panipat Refinery (IOC)	Vishakhapatnam Refinery (BPCL)
Digboi Refinery (IOC)	Mumbai Refinery Mahaul (BPCL)
Gujarat Refinery (At Koyali) (IOC)	Nagapattinam Refinery (CPCL)
Barauni Refinery (IOC)	Kochi Refinery (BPCL)
Guwahati Refinery (IOC)	Numaligarh Refinery (NRL)
Mathura Refinery (IOC)	Mangalore Refinery (MRPL)

Bongaigaon Refinery (IOC)	Tatipaka Refinery (ONGC)
Manali Refinery (at Chennai) (CPCL)	Essar Refinery (at Vadinar Gujarat) (Essar)
Jamnagar Refinery (1) Reliance Petroleum	Bina Refinery (at Sagar, M.P.) (J.V. of BPCL and Oman Oil Co. Ltd.)
Jamnagar Refinery (2) Reliance Petroleum	Guru Gobind Singh Refinery (at Bhatinda, Punjab) (Joint Venture between HPCL and Mittal Energy Limited, a company owned by L. N. Mittal)

## INDUSTRIES IN INDIA

<b>Cotton Textile</b>	Most important industry in terms of employment and production of export goods. In Maharashtra (Mumbai, Sholapur, Pune, Kolhapur, Satara, Wardha, Hajipur), Gujarat (Ahmedabad, Vadodara, Rajkot, Surat, Bhavnagar), Tamil Nadu (Coimbatore, Manchester of South India). Tamil Nadu has the largest number of cotton textile mills in India.
<b>Silk Textile</b>	The location of silk industry is governed by two factors-prevalence of sericulture practices and availability of skilled labour. Karnataka is the leading procedure, followed by West Bengal, Bihar etc.
<b>Woolen Textile</b>	In Punjab (Dharmiwal, Amritsar, Ludhiana, Ferozpur), Maharashtra (Mumbai), UP (Kanpur, Mirzapur, Agra, Tanakpur), etc.
<b>Jute</b>	India manufactures the largest quantity of jute goods in the world. Mainly located in West Bengal, followed by Andhra Pradesh, Bihar, UP, MP.
<b>Iron and Steel</b>	Located near the sources of raw materials and fuel (coal). In Jamshedpur (Jharkhand), Durgapur, Burmpur (W.B.), Bhadravati (Karnatak), Bokaro (Jharkhand), Rourkela (Odisha), Bhilai (Chhattisgarh), Salem (T.N.), Vishakhapatnam (A.P.).
<b>Aluminium Smelting</b>	Located mainly near the sources of raw materials, means of transport and cheap electricity. In Hirakud, Koraput (Odisha), Renukoot (UP), Korba (MP), Ratnagiri (UP), Ratnagiri (Maharashtra), Mettur (TN), Alwaye.
<b>Copper Smelting</b>	In Khetri, Alwar, Jhunjhunu (Rajasthan), Singhbhum (Jharkhand), Agnigundam (A.P.).
<b>Heavy Machinery</b>	In Ranchi, Vishakhapatnam, Durgapur, Tiruchirappalli, Mumbai, Naini.
<b>Aircraft</b>	Hindustan Aeronautics India Ltd. (HAL) was formed by merging two aircraft factories of Bengaluru and Kanpur. Four other factories are at Nasik, Hyderabad, Koraput (Odisha), Lucknow.
<b>Rubber Industry</b>	Bareilly (UP), Baroda (Gujarat) - Synthetic Rubber Units, Mumbai, Ahmedabad, Amritsar-Reclaimed Rubber Units.
<b>Machine Tools Industry</b>	In forms the basis for the manufacturing of industrial, defence equipments, automobiles, railway engines and electrical machinery. In Bengaluru, Pinjore (Haryana), Kalamassery (Kerala), Hyderabad, Secunderabad, Srinagar, Ajmer.
<b>Heavy Electrical Equipments</b>	In Bhopal, Tiruchirappalli, Jammu, Ramchandrapuram (Hyderabad), Hardwar, Bengaluru, and Jagdishpur (UP).
<b>Railway equipments</b>	Locomotives: In Chittaranjan (WB), Varanasi, Jamshedpur, Bhopal. Coaches: Perambur (TN), Kapurthala (Punjab), also at Bengaluru and Kolkata.
<b>Ship Building</b>	Hindustan Shipyard at Vishakhapatnam, Cochin Shipyard, Mumbai (Mazgaon Dock) and Kolkata (Garden Reach Workshop). For Indian Navy, only at Mazgaon.
<b>Cycles</b>	In Mumbai, Asansol, Sonepat, Delhi, Chennai, Jalandhar and Ludhiana.
<b>Tractors</b>	At Faridabad, Pinjore, Delhi, Mumbai, Chennai.
<b>Fertilizers</b>	About 70% of the plants producing nitrogenous fertilizers use naphtha as raw material. Naphtha is a by-product of oil refineries. Phosphate plants are dependent on mineral phosphate found in UP and MP. Now natural gas-based fertilizer plants are also being set up. The Fertilizer Corporation of India (FCI) was set up in 1961. National Fertilizer Limited (NFL) was set up in 1974. In Sirdi (Bihar), Nangal, Trombay, Gorakhpur, Durgapur, Namrup, Cochin, Rourkela, Neyveli, Varanasi, Dadra, Vishakhapatnam, Kota and Kanpur.
<b>Pharmaceuticals and Drugs</b>	Antibiotics are prepared at Pimpri and Rishikesh. The Indian Drugs and Pharmaceuticals Limited has 5 plants of Hyderabad, Rishikesh, Chennai, Gurgaon and Muzaffarpur. A number of other units are concentrated in Mumbai, Baroda, Delhi, Kolkata and Kanpur.
<b>Pesticides</b>	Delhi and Alwaye.
<b>Sugar Industry</b>	U.P., Maharashtra, A.P., TN, Karnataka and Bihar.

## NUCLEAR POWER STATIONS

<b>Tarapur</b>	Maharashtra
<b>Kalpakkam</b>	Tamil Nadu, called Indira Gandhi Nuclear Power Station
<b>Narora</b>	UP
<b>Rawatbhata</b>	Kota, Rajasthan
<b>Kaiga</b>	Karnataka
<b>Kakrapara</b>	Gujarat
<b>Kudankulam</b>	Thirunelveli District, Tamil Nadu
<b>Banswara</b>	Rajasthan (Under construction)

## MAJOR THERMAL POWER PLANTS

Power Plant	State
Neyveli	Tamil Nadu
Korba	Chhattisgarh
Obra	UP
Harduaganj	UP
Rihand	UP
Singrauli	UP
Parichha	UP
Talcher	Odisha
Farakka	West Bengal
Ramagundam	AP
Vindhyanachal	MP

## MAJOR RIVER VALLEY PROJECTS

<b>Bakra Nangal Project</b>	On Satluj in Punjab. Highest in India. Ht 226 m. Reservoir is called Gobind Sagar Lake
<b>Mandi Project</b>	On Beas in HP.
<b>Chambal Valley Project</b>	On Chambal in MP and Rajasthan 3 dams are there: Gandhi Sagar Dam, Rana Pratap Sagar Dam and Jawahar Sagar Dam
<b>Damodar Valley Project</b>	On Damodar in Bihar. Based on Tennessee Valley Project, USA.
<b>Hirakud</b>	On Mahanadi in Odisha. World's longest dam: 4801m
<b>Rihand</b>	On Son in Mirzapur. Reservoir is called Govind Vallabh Pant reservoir
<b>Koshi Project</b>	On Kosi in N. Bihar
<b>Mayukashi Project</b>	On Mayukashi in WB
<b>Kakrapara Project</b>	On Tapi in Gujarat
<b>Nizamsagar Project</b>	On Manjira in Telangana.
<b>Nagarjuna Sagar Project</b>	On Krishna in Telangana and AP
<b>Tungabhadra</b>	On Tungabhadra in AP and Karnataka.

## TRANSPORTATION IN INDIA

### RAILWAYS

- Indian railway system is the largest in Asia and the third largest in the world after US and Russia. It is the biggest departmental public undertaking in the country.
- The first train ran in India between Bombay and Thane, a stretch of 34 km. On April 16, 1853. The Indian Railways celebrated its 150<sup>th</sup> anniversary on April 16, 2003. To commemorate the occasion, 16 Jan-Shatabadi inter-city express trains were announced to be inducted.
- The second train ran between Howrah and Hooghly in 1854.
- The headquarters of Indian Railway is in New Delhi.
- The first electric train in India was 'Deccan Queen'. It was introduced in 1929 between Bombay and Poona.
- Indian Railways has the second biggest

electrified system in the world after Russia.

- The fastest train in India is Gatimaan Express between Delhi and Agra, attaining the speed of 160 km/hr.
- The total route covered is approx.. 1,15,000 km.
- The total number of railway stations in India is 7,500.
- The longest railway platform in India is at Gorakhpur (U.P.).
- Mumbai is the destination where maximum number of trains in India head for.
- The longest train route is of 'Vivek Express' from Dibrugarh, Assam to Kanyakumari, Tamil Nadu. It covers a distance of 4,286 km in 83 hours.
- The first Metro Rail was introduced in Kolkata (West Bengal) on Oct 24, 1984. The two stations connected were Dum Dum and Belgachhia.
- The Indian Railways operate in four different gauges:
  - Broad Gauge (Distance between rails is 1.67 m)
  - Metre Gauge (Distance between rails in 1.00 m)
  - Narrow Gauge (Distance between rails is 0.762)
  - Light Gauge (Distance between rails is 0.610 m)
- The broad gauge accounts for nearly 90% route followed by metre gauge (7.9%) and the remaining by narrow gauge and light gauge.
- Indian railways are divided into 17 zones, headed by a General Manager who is responsible to the Railway Board, for all matters.

Railway Zones	Head Quarters
Central	Mumbai CSMT
Eastern	Kolkata
Northern	New Delhi
North Eastern	Gorakhpur
North-East Frontier	Maligaon-Guwahati
Southern	Chennai
South Central	Secunderabad
South Eastern	Kolkata
Western	Mumbai Churchgate
East Coast	Bhubaneshwar
Eastern Central	Hajipur
North Central	Allahabad
North Western	Jaipur
South Western	Bengaluru (Hubli)
West Central	Jabalpur
South East Central	Bilaspur
Kolkata Metro	Kolkata

- Northern Railway (NR) is the largest railway zone having length of 10,995 km.
- North-East Frontier (NEF) is the smallest railway zone having just 3,860 km route length.
- **Konkan Railways:** It is a project to shorten the distance between Maharashtra, Goa and Karnataka. The total route length is 738 km between Roha station (Maharashtra) and Mangalore (Karnataka).

### □ RAILWAY MANUFACTURING UNITS

- **Chittaranjan Locomotive Works:** Located in Chittaranjan (W.B.) and manufactures electric engines.
- **Diesel Locomotive Works:** Located in Varanasi (UP) and manufactures diesel engines.
- **Integral Coach Factory:** Located in Perambur (TN) and manufactures rail coaches.
- **Wheel and Axle Plant:** Located at Yalahaka (Bangaluru, Karnataka) and manufactures wheels and axles.
- **Diesel Component Works:** Located and Patiala (Punjab) and Manufacturer components of diesel engines.
- **Rail Coach Factory:** Located at Kapurthala (Punjab) and manufactures rail coaches.

### □ ROAD TRANSPORT

- India's road network is one of the largest in world. The total length of roads is more than 43 lakh km.
- For the purpose of maintenance and construction, roads are classified into National Highways, State Highways, District Highways, Village Roads, Border Roads, etc.
- National highways are maintained by the Central Government, State highways by the respective state government while District highways by the respective District Board. Border roads and International highways are also the responsibility of Central Government.
- The present length of the National Highways in India is more than 71,000 km. They constitute only 2% of the total road length and carries nearly 40% of the road traffic.
- Some of the important National Highways are:
  - ◆ **NH 1** : New Delhi – Ambala – Jalandhar – Amritsar.
  - ◆ **NH 2** : Delhi – Mathura – Agra –

- Kanpur – Allahabad – Varanasi – Kolkata.
  - ◆ **NH 3** : Agra – Gwalior – Nasik – Mumbai.
  - ◆ **NH 4** : Thane and Chennai via Pune and Belgaum.
  - ◆ **NH 5** : Kolkata – Chennai.
  - ◆ **NH 6** : Kolkata – Dhule.
  - ◆ **NH 7** : Varanasi – Kanyakumari.
  - ◆ **NH 8** : Delhi – Mumbai (via Jaipur, Baroda and Ahmedabad).
  - ◆ **NH 9** : Mumbai – Vijaywada
  - ◆ **NH 10** : Delhi – Fazilka
  - ◆ **NH 11** : Agra – Bikaner
  - ◆ **NH 12** : Jabalpur – Jaipur
  - ◆ **NH 24** : Delhi – Lucknow
  - ◆ **NH 27** : Allahabad – Varanasi
  - ◆ **NH 28** : Barauni – Lucknow
  - ◆ **NH 29** : Gorakhpur – Varanasi
  - ◆ **NH 56** : Lucknow – Varanasi
- NH 7 is the longest highway of India, while NH 47A is the shortest. NH 47A covers a distance of 6 km between Kundannoor and Willingdon Island in Kochi, Kerala.

### Note :

- ❖ **The Golden Quadrilateral Project** connecting the four Metropolitan cities of Delhi, Mumbai, Chennai and Kolkata covering a total distance of 5846 km is currently being processed. It is the first phase of the **National Highways development Project (NHDP)**. Total cost of the project is Rs. 300 billion, funded largely by the government's special petroleum product tax revenues and government borrowing. In January 2012, India announced the four lane Golden Quadrilateral highway network as complete.
- ❖ **The North South – East West Corridor (NS-EW)** is the largest ongoing expressway project in India. It is the second phase of the Natioal Highways Development Project (NHDP), and consists of building 7300 kilometers of four/six lane expressways connecting Srinagar, Kanyakumari, Porbandar and Silchar. As of January 2012, 5945 of 7300 kilometers project has been completed.
- ❖ Maharashtra has the maximum length of surfaced roads in India (1,65,000 km), followed by Tamil Nadu, Uttar Pradesh and Madhya Pradesh. In terms of density of roads, Punjab leads the way.

### □ AIR TRANSPORT

- J.R.D Tata was the first person to make a

solo flight from Mumbai to Karachi in 1931.

- In 1935, the 'Tata Air Lines' started its operation between Mumbai and Thiruvananthapuram and in 1937 between Mumbai and Delhi.
- In 1953, all the private Airline companies were nationalized and Indian Airlines and Air India came into existence.
- Air India used to administer international flights while Indian Airlines caters to the domestic circuit.
- Indian Airlines is now known by the name of 'Air India'.
- Vayudoot Limited started in 1981 as a private air carrier and later on it merged with Indian Airlines.
- Pawan Hans Limited operate helicopter support services to oil sector, hill stations and remote areas.
- A number of private airlines also operates in India. They are Jet Airways, IndiGo, SpiceJet GoAir, Deccan 360, etc.
- The Civil Aviation Centre in Fursatgarh near Allahabad provided, among other things, ground training to the pilots.

### □ AIR TRANSPORT

- There are many international airports in India, important ones being :
  - ✓ Rajiv Gandhi International Airport, Hyderabad
  - ✓ Calicut International Airport, Calicut
  - ✓ Chhatrapati Shivaji International Airport, Mumbai
  - ✓ Anna International Airport, Chennai
  - ✓ Bengaluru International Airport, Bangalore
  - ✓ Lal Bahadur Shastri International Airport, Varanasi
  - ✓ Lokpriya Gopinath Bordoloi International Airport, Guwahati
  - ✓ Indira Gandhi International Airport, Delhi
  - ✓ Netaji Subhash Chandra Bose International Airport, Kolkata
  - ✓ Guru Ramdas International Airport, Amritsar
  - ✓ Sardar Vallabhbhai Patel International Airport, Ahmedabad
  - ✓ Thiruvananthapuram International Airport, Thiruvananthapuram
  - ✓ Jaipur International Airport, Jaipur
  - ✓ Cochin International Airport, Kochi
  - ✓ Veer Savarkar International Airport, Port Blair
  - ✓ Biju Patnaik International Airport, Bhubaneswar
  - ✓ Imphal International Airport

- The Indira Gandhi International Airport and the Chhatrapati Shivaji International Airport handle more than half of the air traffic in South Asia. Besides these airports several other domestic airports are located in India.
- Most of the airports in India are owned by Airport Authority of India (AAI). AAI managed Airports can be categorized as : International Airports, Domestic Airports, Customs Airports, Civil Enclaves.

### □ WATER TRANSPORT

- Most efficient, least costly and environment friendly means of transportation.
- The total length of navigable waterways in India comprising rivers, canals, backwaters etc., is 14500 km out of which 3700 km is navigable by mechanized boats.
- The government has recognized the following National Waterways of India :

**NW 1** Allahabad to Haldia 1,629 km

**NW 2** Sadia to Dhubari (on Brahmaputra river) 819 km

**NW 3** Kollam to Kottapuram 186 km

**NW 4** Bhadrachalam to Rajahmundri and Wazirabad to Vijaywada (along Godavari and Krishna River) 1,100 km

**MW 5** Mangalgarhi to Paradeep and Talcher to Dhamara (along Mahanadi and Brahmani River Systems) 623 km

**NW 6** Lakhipur and Bhanga of the Barak River (Assam) 121 km.

### □ PORTS IN INDIA

- The Waterways Authority in India divides Indian ports into three categories, major, minor and intermediate.
- India has about 190 ports in all, with 13 major and the rest intermediate and minor.
- The 13 major ports are :

Port	State
Kolkata (including Haldia)	West Bengal
Paradip	Odisha
Vishakhapatnam	Andhra Pradesh
Chennai	Tamil Nadu
Ennore	Tamil Nadu
V.O. Chidambaram (formerly Tuticorin)	Tamil Nadu
Cochin	Kerala
New Mangalore	Karnataka
Mormugao	Goa
Jawaharlal Nehru	Maharashtra
Kandla	Gujarat
Port Blair	Andaman and Nicobar Islands

- All these ports are administered by the respective Port Trusts, except the newly constructed Ennore port which is under the Ennore Port Ltd. Company.

#### SALIENT FEATURES

- KOLKATA PORT (INCLUDING HALDIA) :** Kolkata is a riverine port, located about 128 km from the Bay of Bengal on the banks of river Hooghly. Haldia was developed because excessive silting prevented the entry of large marine vessels in Kolkata.
- PARADIP PORT :** Located on the Odisha coast along the Bay of Bengal. India exports raw iron to Japan from here.
- VISHAKHAPATNAM PORT :** The deepest port, located in Andhra Pradesh. It serves the Bhilai and Rourkela steel plants.
- CHENNAI PORT :** Oldest artificial harbour. This port ranks only second after Mumbai in terms of the traffic handling capacity.
- ENNORE PORT :** Declared a major port in 2001. It is the first port with corporate participation. Provided with all the modern facilities for handling the thermal coal required for Tamil Nadu Electricity Board Power Station.
- V.O. CHIDAMBARAM (FORMERLY TUTICORIN) PORT :** It came into existence during the reign of Pandya kings. It has an artificial deep sea harbour.
- COCHIN PORT :** A fine natural harbour located on Kerala coast. Handles the export of tea, coffee and spices and import of petroleum and fertilisers.
- NEW MANGALORE PORT :** The 'Gateway of Karnataka'. Handles the export of iron-ore of Kudremukh.
- MARMUGAO PORT :** It has a naval base. India's leading iron-ore port.
- MUMBAI PORT :** A natural port, India's busiest. A new port, Nhava Sheva, is being developed near Mumbai port.
- JAWAHARLAL NEHRU PORT :** Occupies the 5<sup>th</sup> position in the world's faster growing port.
- KANDLA PORT :** Called the 'offspring of partition' as it was developed after the partition of substitute of Karachi port. It is a

tidal port and a free trade zone located in the Rann of Kachchh.

- PORT BLAIR PORT :** Recently added in the list of Major Ports. The port is of strategic importance to India and is closer to two international shipping lines, namely Saudi Arabia-Singapore and US-Singapore.

## MISCELLANEOUS INFORMATION OF INDIA

### ■ NICK NAMES OF IMPORTANT INDIAN PLACES

Nick Names	Place
Golden city	Amritsar
Manchester of India	Ahmedabad
City of Seven Islands	Mumbai
Queen of Arabian Sea	Cochin
Spice City	Bangalore
Garden City of India	Bangalore
Silicon Valley of India	Bangalore
Electronic City of India	Bangalore
Pink City	Jaipur
Gateway of India	Mumbai
Twin City	Hyderabad-Secunderabad
City of Festivals	Madurai
Deccan Queen	Pune
City of Buildings	Kolkata
Dakshin Ganga	Godavari
Old Ganga	Godavari
Egg Bowls of Asia	Andhra Pradesh
Soya Region	Madhya Pradesh
Manchester of the South	Coimbatore
City of Nawabs	Lucknow
Venice of the East	Cochin
Sorrow of Bengal	Damodar river
Sorrow of Bihar	Kosi river
Blue Mountains	Nilgiri
Queen of the Mountains	Mussoorie (Uttarakhand)
Sacred River	Ganga
Hollywood of India	Mumbai
City of Castles	Kolkata
States of Five Rivers	Punjab
City of Weavers	Panipat
City of Lakes	Srinagar
Steel City of India	Jamshedpur (Called Tatanagar)
City of Temples	Varanasi
Manchester of North	Kanpur
City of Rallies	New Delhi
Heaven of India	Jammu & Kashmir
Boston of India	Ahmedabad
Spices Garden of India	Kerala
Switzerland of India	Kashmir
Abode of the God	Prayag (Allahabad)
Pittsburgh of India	Jamshedpur

## ■ IMPORTANT INDIAN TOWN OF RIVERS

Town	River
>Allahabad	At the confluence of the Ganga and Yamuna
Patna	Ganga
Varanasi	Ganga
Kanpur	Ganga
Haridwar	Ganga
Badrinath	Alaknanda
Agra	Yamuna
Delhi	Yamuna
Mathura	Yamuna
Ferozpur	Satluj
Ludhiana	Satluj
Srinagar	Jhelum
Srinagar	Jhelum
Lucknow	Gomti
Jaunpur	Gomti
Kota	Chambal
Jabalpur	Narmada
Panji	Mandavi
Ujjain	Shipra
Surat	Tapti
Jamshedpur	Swarnarekha
Dibrugarh	Brahmaputra
Guwahati	Brahmaputra
Kolkata	Hooghly
Sambalpur	Mahanadi
Cuttack	Mahanadi
Srirangapatnam	Cauvery
Hyderabad	Musi
Nasik	Godavari
Ayodhya	Saryu
Bareily	Ram Ganga
Ahmedabad	Sabarmati
Vijaywada	Krishna
Curnool	Tungabhadra
Tiruchirapalli	Cauvery

## ■ FAMOUS HILL STATIONS OF INDIA

Hill Stations	Height from Seal level (m)	States
Gulmarg	2250	J & K
Ooty (Ootacamund)	2290	Tamil Nadu
Shimla	2210	HP
Pahalgam	2200	J & K
Darjeeling	2135	West Bengal
Kodaikanal	2120	Tamil Nadu
Lansdowne	2120	Uttarakhand
Dalhousie	2035	HP
Mussoorie	2006	Uttarakhand
Mukteshwar	1975	Uttarakhand
Nainital	1940	Uttarakhand
Kasauli	1895	HP
Coonoor	1860	Tamil Nadu
Gangtok	1850	Sikkim
Manali	1830	HP
Ranikhet	1830	Uttarakhand
Ranchi	1800	Jharkhand
Srinagar	1770	J & K
Almora	1650	Uttarakhand
Shillong	1500	Meghalaya
Mahabaleshwar	1370	Maharashtra
Kalimpong	1250	West Bengal
Kullu Valley	1200	HP
Mt. Abu	1220	Rajasthan
Panchgani	1200	Maharashtra
Mannar	1160	Kerala
Panchmarhi	1065	MP
Periyar	915	Kerala
Mandi	709	HP
Lonawala	620	Maharashtra
Khandala	620	Maharashtra

## ■ TRIBAL GROUPS OF INDIA

Tribal Groups	Found in
Abhors	North-East
Adivasis	MP (Bastar distt.)
Angami	Manipur
Apatamis	Arunachal Pradesh
Badagas	Tamil Nadu
Baigas	MP
Bakkarwals	J & K
Bhils	MP & Rajasthan
Bhotias	Uttarakhand
Bhuia	MP
Birhors	MP and Bihar
Chang	North-East
Chenchus	AP and Odisha
Chutia	Assam
Goddis	Himachal Pradesh
Gallong	North-East
Garos	Assam
	and Meghalaya

↳ <b>Gonds</b>	<i>MP and Bihar</i>
↳ <b>Gujjars</b>	<i>J &amp; K and HP</i>
↳ <b>Irula</b>	<i>Tamil Nadu</i>
↳ <b>Jaintias</b>	<i>Meghalaya</i>
↳ <b>Jarawas</b>	<i>Little Andamans</i>
↳ <b>Kanikar</b>	<i>Tamil Nadu</i>
↳ <b>Katkari</b>	<i>MP</i>
↳ <b>Kharia</b>	<i>MP</i>
↳ <b>Khond</b>	<i>MP</i>
↳ <b>Khas</b>	<i>UP</i>
↳ <b>Khasis</b>	<i>Assam and Meghalaya</i>
↳ <b>Khonds</b>	<i>Odisha</i>
↳ <b>Kol</b>	<i>MP</i>
↳ <b>Kalam</b>	<i>AP</i>
↳ <b>Katas</b>	<i>Tamil Nadu</i>
↳ <b>Kuki</b>	<i>Manipur</i>
↳ <b>Lahaulas</b>	<i>Himachal Pradesh</i>
↳ <b>Lepchas</b>	<i>Sikkim</i>
↳ <b>Lushai</b>	<i>Tripura</i>
↳ <b>Murias</b>	<i>MP</i>
↳ <b>Minas</b>	<i>Rajasthan</i>
↳ <b>Moplahs</b>	<i>Kerala</i>
↳ <b>Mundas</b>	<i>Bihar</i>
↳ <b>Murias</b>	<i>MP</i>
↳ <b>Nishi</b>	<i>North-East</i>
↳ <b>Nagas</b>	<i>Nagaland</i>
↳ <b>Oarons</b>	<i>Bihar and Odisha</i>
↳ <b>Onges</b>	<i>Andaman &amp; Nicobar</i>
↳ <b>Pho</b>	<i>North-East</i>
↳ <b>Santhals</b>	<i>WB, Odisha and Bihar</i>
↳ <b>Sangtam</b>	<i>North-East</i>
↳ <b>Sema</b>	<i>Nagaland</i>
↳ <b>Sentinelese</b>	<i>Andaman &amp; Nicobar</i>
↳ <b>Shompens</b>	<i>Andaman &amp; Nicobar</i>
↳ <b>Todas</b>	<i>Tamil Nadu</i>
↳ <b>Uralis</b>	<i>Kerala</i>
↳ <b>Wancho</b>	<i>North-East</i>
↳ <b>Worlis</b>	<i>Maharashtra</i>

## ■ INDIAN TOWNS ASSOCIATED WITH INDUSTRIES

Town	State	Industries
Ahmedabad	Gujarat	Cotton Textiles
Agra	U.P.	Leather, Marble, Carpets
Aligarh	U.P.	Locks, Cutlery
Ankleswar	Gujarat	Oil fields
Ambarnath	Maharashtra	Machine Tools
Amritsar	Punjab	Woolen Clothes
Anand	Gujarat	Milk and its products
Alwaye	Kerala	Fertilizer, Monazite factory
Ambala	Haryana	Scientific instruments
Bokaro	Jharkhand	Steel Plant
Bangalore	Karnataka	Telephones, Aircrafts, Motors, Cotton Textiles, Toys
Batagar	West Bengal	Shoes
Bareilly	U.P.	Resin industries, Match factory
Bhilai	Chhattisgarh	Steel Plant
Barauni	Bihar	Chemical Fertilizer
Burnpur	West Bengal	Steel Plant
Bhurkunda	Jharkhand	Glass industries
Bhagalpur	Bihar	Silk industries
Bhandara	Maharashtra	Explosives
Bhadrapati	Karnataka	Iron & Steel
Bongaigaon	Assam	Petroleum
Bhadoi	U.P.	Carpets
Churk	M.P.	Cement
Cyberabad	Andhra Pradesh	Electronics, Computers, information technology
Chittaranjan	West Bengal	Locomotive
Kolkata	West Bengal	Jute, leather, electric goods
Cochin	Kerala	Ship Building, coconut oil, rubber
Calicut	Kerala	Coffee, coconut
Coimbatore	Tamil Nadu	Cotton industries
Dhariwal	Punjab	Woolen clothes
Durgapur	West Bengal	Steel
Digboi	Assam	Petroleum
Delhi	Delhi	Textiles, Electronics, D.D.T.
Dalmianagar	Bihar	Cement
Darjeeling	West Bengal	Tea
Dindigul	Tamil Nadu	Cigar, Tobacco
Firozabad	M.P.	Bangle works
Guntur	Andhra Pradesh	Cotton Industries
Gwalior	Madhya Pradesh	Tottery, Tobacco
Gomia	Jharkhand	Explosives
Hardwar	Uttarakhand	Heavy electrical
Hatia	Jharkhand	Heavy Engineering Corporation
Haldia	West Bengal	Chemical fertilizer
Hazira	Gujarat	Artificial Rayan
Jamshedpur	Jharkhand	Iron & Steel, Locomotives, Railway coaches
Jalandhar	Punjab	Surgical goods and sports articles
Jaipur	Rajasthan	Cloth Printing, Brass
Jharia	Jharkhand	Coal mines
Jabalpur	Madhya Pradesh	Bidi industries
Jainakot	Jammu & Kashmir	H.M.T. watch
Jaipal	Jharkhand	Cement
Kanpur	U.P.	Cotton and Wollen mills, Leather, Sugar

Town	State	Industries
Kathi	M.P.	Cement
Korba	Chhattisgarh	Aluminium factory, Thermal plant
Koyna	Maharashtra	Aluminium factory
Koyali	Gujarat	Petrochemical industries
Kolar	Karnataka	Gold mining centre
Kota	Rajasthan	Automatic power plan
Kanchipuram	Tamil Nadu	Silk clothes
Karnal	Haryana	Dairy product
Kandla	Gujarat	Chemical fertilizer, famous port
Khetri	Rajasthan	Copper industries
Ludhiana	Punjab	Hosiery
Lucknow	U.P.	Embroidery work, Chicken work
Chennai	Tamil Nadu	Leather, Cigarette, Integral coach factory
Madurai	Tamil Nadu	Cotton and Silk Weaving
Mirzapur	U.P.	Carpet, Pottery, Brass industries
Muradabad	U.P.	Brassware, cutlery
Mathura	U.P.	Oil refinery
Mysore	Karnataka	Sandalwood oil, Silk goods
Mathura	U.P.	Oil refinery
Meerut	U.P.	Publication work, Sports goods, Scissors making
Mumbai	Maharashtra	Cinema industries, Cotton textiles
Modinagar	U.P.	Nylon thread
Moorie	Jharkhand	Aluminium
Majhagaon	Maharashtra	Ship building
Nagpur	Maharashtra	Cotton mills, Oranges
Nepanagar	Madhya Pradesh	Newsprint
Nasik	Maharashtra	Security Printing Press
Neyveli	Tamil Nadu	Lignite industries
Nunamati	Assam	Oil refineries
Narora	U.P.	Automatic Power Plant
Nangal	Punjab	Fertilisers
Panna	M.P.	Diamond mining
Pinjore	Haryana	Hindustan Machines Tools
Perambur	Tamil Nadu	Integral coach factory
Pimpri	Maharashtra	Penicillin factory
Raniganj	West Bengal	Coal mining
Rourkela	Odisha	Steel Plant Chemical fertilizer
Rana Pratap Sagar	Rajasthan	Hydro Power Plant
Renukoote	U.P.	Aluminium Plant
Roopnarayanpur	West Bengal	Cables

Town	State	Industries
Rishikesh	Uttarakhand	Antibiotic Plant
Saharanpur	U.P	Cigarette factory, Newsprint
Sindri	Jharkhand	Chemical fertilizer
Srinagar	Jammu & Kashmir	Woollen shawls, Silk, Woodwork
Surat	Gujarat	Cotton Textiles, Diamond cutting
Surajpur	Haryana	Cement factory
Suratgarh	Rajasthan	Agricultural implements
Singhbhum	Jharkhand	Copper, Iron
Singreni	Andhra Pradesh	Coal mining
Salem	Tamil Nadu	Iron and Steel
Samastipur	Bihar	Jute, Paper, Tobacco, Sugar
Tarapur	Maharashtra	Atomic Power Plant
Titagarh	West Bengal	Paper & Jute
Thiruvananthapuram	Kerala	Coir matting
Trombay	Maharashtra	Oil refinery
Tiruchirapalli	Tamil Nadu	Cigar
Tirupati	Andhra Pradesh	Scooter
Tanjore	Tamil Nadu	Silk clothes
Thumba	Kerala	Rocket launching station
Vijaypur	M.P.	Fertilizers
Vijaynagar	Karnataka	Steel Plant
Vishakhapatnam	A.P.	Ship building, Iron and Steel, Oil refinery
Varanasi	Maharashtra	Baby food
Zainkot	J & K	HMT Watches

**■ LARGEST, LONGEST, HIGHEST AND SMALLEST IN INDIA**

Longest river	Ganges
The longest tributary river of India	Yamuna
The longest river of south	Godavari
Highest mountain peak	Godwin Austin (K2)
Largest lake (Fresh water)	Wular lake (Kashmir)
Highest Dam	Bakra Dam (Punjab)
Largest Mosque	Jama Masjid, Delhi
Longest Road	Grand Trunk Road
State with longest coastline	Gujarat

Longest railway route	From Dibrugarh (Assam) To Kanya Kumari
Longest tunnel	Pir Panjal tunnel (Jammu & Kashmir)
Longest national highway	NH-7 which runs from Varansi to Kanyakumari
Longest Bridge	PVNR Expressway, Hyderabad (11,600 m)
Longest Dam	Hirakud Dam (Odisha)
Longest River Bridge	Bhupen Hazarika Setu, Dhola – Sadiya, Dist Tinsukia
Largest populated City	Mumbai (12,478,447, census 2011)
Largest Museum	National Museum, Kolkata
Largest Delta	Sunderban Delta, West Bengal
Largest Dome	Gol Gumbaz, Bijapur (Karnataka)
Largest Zoo	Zoological Gardens, Alipur, Kolkata
Largest Man-made Lake	Dhebar Lake, Udaipur (Rajasthan)
Largest Desert	Thar (Rajasthan)
Highest Tower	Pitampura Tower, Delhi
Smallest State (Area)	Goa
Smallest State (Population)	Sikkim
Highest Waterfall	Kunchikal waterfall (Karnataka)
Longest Electric railway line	From Delhi to Kolkata via Patna
Densest Populated State	Bihar
Largest cave temple	Kailash temple, Ellora (Maharashtra)
Largest animal Fair	Sonepur (Bihar)
Highest Gateway	Buland Darwaza, Fatehpur Sikri (Agra)
Biggest Hotel	Oberai-Sheraton (Mumbai)
Largest State (Area)	Rajasthan
Largest State (Population)	Uttar Pradesh
Place of heaviest rainfall	Mausinram (Meghalaya)
Largest corridor	Rameshwaram temple corridor (Tamil Nadu)
Largest cantilever span bridge	Howrah Bridge (Kolkata)
Largest forest state	M.P.
Highest straight gravity Dam	Bakra Dam
Longest Railway Platform	Gorakhpur (Uttar Pradesh)
Largest Stadium	Salt lake (Yuva Bharti), Kolkata

Largest Port	Mumbai
Highest Lake	Devatal (Garhwal)
Largest Lake (Saline water)	Chilka lake, Odisha
Highest Award	Bharat Ratna
Highest Gallantry Award	Paramveer Chakra
Largest Gurudwara	Golden Temple, Amritsar
Deepest river valley	Bhagirathi & Alaknanda
State with longest coastline of South India	Andhra Pradesh
Longest river which forms estuary	Narmada
Largest Church	Saint Cathedral (Goa)
Largest Beach	Marine Beach, Chennai
Highest Battle field	Siachin Glacier
Highest Airport	Leh (Laddakh)
Largest river island	Majuli (Brahmaputra river, Assam)
Largest Planetarium	Birla Planetarium (Kolkata)

## ■ IMPORTANT MONUMENTS OF INDIA

Name	Place	Built by
Ajanta Ellora Caves	Aurangabad (Maharashtra)	Gupta rulers
Aram Bagh	Agra (UP)	Babur
Agra Fort	Agra (UP)	Akbar
Akbar's Mousoleum	Sikandra (UP)	Akbar
Itmad-ud-daula Fort	Agra (UP)	Noorjahan
Anand Bhawan	Allahabad (UP)	Motilal Nehru
Bada Imambara	Lucknow (UP)	Asaf-ud-doula
Bharatpur Fort	Bharatpur (Rajasthan)	Raja Surajmal Singh
Bibi Ka Maqbara	Aurangabad (Maharashtra)	Aurangzeb
Char-Minar	Hyderabad (AP)	Quli Qutab Shah
Charar-e-Sharif	Jammu & Kashmir	Sainul Abedin
Chhota Imambara	Lucknow (UP)	Muhammad Ali Shah
Dilwara's Jain Temple	Mount Abu (Rajasthan)	Siddharaja
Deewan-e-Khas	Agra Fort (UP)	Shahjahan
Adhai Din Ka Jhopra	Ajmer (Rajasthan)	QutubuddinAibak
Elephanta Cave	Mumbai (Maharashtra)	Rashtrakuta rulers
Fatehpur Sikri	Agra (UP)	Akbar
Ferozshah Kotla	Delhi	Ferozshah Tughlaq
Golghar	Patna (Bihar)	British Govt.
Gateway of India	Mumbai (Maharashtra)	British Govt.
Hauz Khas	Delhi	Alauddin Khilji
Hawa Mahal	Jaipur (Rajasthan)	Maharaja Pratap Singh
Humayun's Tomb	Delhi	Humayun's wife
Jama Masjid	Agra (UP)	Shahjahan
Jama Masjid	Delhi	Shahjahan
Jagannath Temple	Puri (Odisha)	Anantvarman Ganga
Jantar-Mantar	Delhi	Sawai Jai Singh

Name	Place	Built by
Jaigarh Fort	Jaipur (Rajasthan)	Sawai Jai Singh
Jim Corbett Park	Nainital (Uttarakhand)	Sir Malcom Hailey
Jodhpur Fort	Jodhpur (Rajasthan)	Rao Jodhaji
Kanheri's Fort	Mumbai (Maharashtra)	Buddhists
Khirki Masjid	Delhi	Ghyasuddin Tughlaq
Lal Bagh	Bangalore (Karnataka)	Hyder Ali
Lakshmi Narayan Temple	Delhi	Birla Family
Makka Masjid	Hyderabad (Andhra Pradesh)	Quli Qutab Shah
Moti Masjid	Agra Fort (UP)	Shahjahan
Moti Masjid	Delhi Fort	Aurangzeb
Nahargarh Fort	Jaipur	Swai Jai Singh
Nishad Garden	Srinagar (J & K)	Asaf Ali
Purana Qila	Delhi	Shershah Suri
Pathar Ka Masjid	Patna (Bihar)	Pervez Shah
President House	Delhi	British Govt.
Qutub Minar	Delhi	Qutubuddin Aibak
Red Fort	Delhi	Shahjahan
Safdar Jung Tomb	Delhi	Shuja-ud-Daula
Sabarmati Ashram	Ahmedabad (Gujarat)	Mahatma Gandhi
Shantiniketan	West Bengal	Rabindra Nath Tagore
Sish Mahal	Agra (UP)	Shahjahan
Shalimar Garden	Srinagar (J & K)	Jahangir
Shershah's Tomb	Sasaram (Bihar)	Shershah's son
Saint George Fort	Chennai (TN)	East India Company
Sati Burj	Mathura (UP)	Raja Bhagwan Das
Sun Temple	Konark (Odisha)	Narsimhadeva 1
Swarna Mandir (Golden Temple)	Amritsar (Pun.)	Guru Ramdas
Tajmahal	Agra (UP)	Shahjahan
Belur Math	Kolkata (WB)	Swami Vivekanand
Victoria Memorial	Kolkata (WB)	British Govt.
Vishnupad Temple	Gaya (Bihar)	Rani Abhiliabai
Vinaya Stambha	Chittorgarh (Raj.)	Maharana Kumbha
Sun Temple	Konark (Odisha)	Narsimhadeva 1
Swarna Mandir (Golden Temple)	Amritsar (Pun.)	Guru Ramdas
Tajmahal	Agra (UP)	Shahjahan
Belur Math	Kolkata (WB)	Swami Vivekanand
Victoria Memorial	Kolkata (WB)	British Govt.
Vishnupad Temple	Gaya (Bihar)	Rani Abhiliabai
Vijaya Stambha	Chittorgarh (Raj.)	Maharana Kumbha

# INDIAN HISTORY

## At a Glance

## MODERN INDIA

### Advent of the Europeans

#### **Portuguese—**

- The Cape Route from Europe to India was discovered by **Vasco da Gama**. He reached Port of Calicut via Cape of Good Hope (Africa) on 17th May, 1498 and was received by the Hindu ruler of Calicut, **Zamorin**. This led to the establishment of trading stations at **Calicut, Cochin** and **Cannanore**.
- Cochin (1502) was the initial capital of the Portuguese in India, later on replaced by **Goa**.
- The first Governor of Portuguese in India was **Francisco Almeida** (1505-09). He introduced '**The Policy of Blue Water**'.
- **Alfonso d' Albuquerque** arrived in India in 1503 and became Governor of the Portuguese in India in 1509. He captured Goa from the ruler of Bijapur in 1510 and introduced the policy of Imperialism.
- **Nino-da-Cunha** (1529-1538) transferred the capital from Cochin to Goa in 1530. He acquired Diu and Bassein from Bahadur Shah of Gujarat (1534).
- Portuguese acquired Daman in 1559. They lost Hugly in 1631, during the reign of Shah Jahan.
- In 1661, the Portuguese king gave Bombay to Charles II of England as dowry, for marrying his sister.
- First Portuguese factory was established at **Calicut**.
- The famous Jesuit Saint **Francisco Xavier** arrived in India with Martin Alfonso de Souza (1542-45).
- Gradually, almost all of their territories were lost to Marathas (Salsette and Bassein in 1739), Dutch and English. Only Goa, Diu and Daman remained with them until 1961.

#### **Dutch—**

- The Dutch East India Company established factories in India at Masulipatnam in 1605, Pulicat (1610), Surat (1616), Bimlipatnam (1641), Karaikal (1645), Chinsura,

Kasimbazar, Patna, Balasore, Nagapatam and Cochin.

- They replaced the Portuguese as the most dominant power in European trade with East.
- Pulicat was their main centre in India till Nagapatam replaced it in 1690.
- The Dutch conceded to British after their defeat in the **Battle of Bedera** in 1759.

#### **English—**

- Before the establishment of the East India Company, **John Mildenhall**, an English merchant came to India over land route to trade with Indian merchants in 1599.
- The English East India Company was formed by a group of merchants in 1599 known as **Merchant Adventurers**.
- Jahangir issued a *farman* to **Captain Hawkins** (1609) permitting him to establish a factory at Surat.
- **Sir Thomas Roe** visited Jahangir's court (1615) as an ambassador of King James I to seek permission to trade in India.
- First factory was built at Surat (1608). Surat was replaced by Bombay acquired from Charles-II on lease as the headquarters on the West coast in 1687.
- In 1639, obtained Madras from Raja of Chandragiri with permission to build a fortified factory, which was named **Fort St. George**.
- In 1690, Job Charnock, established a factory at Sutanati and the **Zamindari** of three villages Sutanati, Kalikata and Govindpur were acquired by the British (1698). These three villages grew as city of Calcutta.
- The factory at Sutanati was fortified and named **Fort William** in 1700.
- In 1717, John Surman obtained royal *farman* from Mughal emperor Farrukhsiyar. This *farman* is also called the *Magna Carta of the British rule* in India as it gave large concessions to the company.

#### **Danes—**

- The Danes arrived in India in 1616.

They established settlement at **Tranqueber** (Tamil Nadu) in 1620 and **Serampore** (Bengal) in 1676. Serampore was their headquarters.

- They were forced to sell their settlements to the British in 1854.

### **French—**

- The French East India Company formed in 1664 by **Colbert** under state patronage during the reign of **Louis XIV**.
- The first French factory was established at Surat by **Francois Caron** in 1668 and second at **Masulipatnam** 1669.
- They occupied **Mahe, Yanam** and **Karaikal**.
- The foundation of Pondicherry was laid in 1673, which afterwards became their capital. They also developed a factory at Chandernagar.
- The Governors, **Lenoir** and **Dumas** revived the French power in India between 1720-42 and the Anglo-French conflict started with the arrival of Governor Dupleix in 1742.

## **Conquest of Bengal**

- **Murshid Quli Khan** (1717-27): He was made Governor of Bengal (1717) and Orissa (1719). He transferred capital of Bengal from Dacca to Murshidabad. He died in 1727.
- **Shuja-ud-din** (1727-39): He was granted Governorship of Bihar by Mughal emperor Muhammad Shah Rangeela.
- **Sarfaraz Khan** (1739-40): Alivardi Khan deposed and killed Shuja-ud-din's son, Sarfaraz Khan and made himself Nawab.
- **Alivardi Khan** (1746): Bribed Muhammad Shah Rangeela and legalised his position by receiving a *farman* from him. He prevented the English and French fortifications at Calcutta and Chandranagar respectively.

### **Shiraj-ud-Daula (1756-57)**

- Under the *farman* of 1717, the Company had rights to import or export their goods in Bengal without paying tax and right to issue passes or *dastaks*. *Dastaks* were misused for private trade by Company's servants.
- In 1756, Siraj-ud-Daula seized the English factory at Kasimbazar and marched to Calcutta and occupied Fort William. **Black hole tragedy** took

place. Robert Clive recovered Calcutta and **Treaty of Alinagar** was signed on 2nd January, 1757.

- **Battle of Plassey:** On 23rd June, 1757, English won the battle against Siraj-ud-daula, and compelled the Nawab to concede all the demands.
- Mir Jafar, (*Mir Bakhsh*), Manik Chand (Officer incharge of Calcutta), Aminchand (rich Sikh merchant), Jagat Seth (banker), Khadim Khan (Commander of Nawab's army) all were on the English side.
- Mir Madan and Mohan Lal, Nawab's soldiers, fought bravely.
- Nawab was killed by Mir Jafar's son Miran.

### **Mir Jafar (1757-60)**

- Mir Jafar was the first Nawab of Bengal, Bihar and Orissa under the British rule in India.
- He granted free trade right to the Company in Bengal, Bihar and Orissa.
- In 1760, Mir Jafar was replaced by his son-in-law, Mir Qasim.

### **Mir Qasim (1760-64)**

- Mir Qasim ceded Burdwan, Midnapur and Chittagong. He shifted his capital from Murshidabad to Monghyr.
- Mir Qasim soon revolted as he was angry with the British for misusing *dastaks* (free duty passes).
- **Battle of Buxar:** He formed an alliance with Nawab of Awadh, Shuja-ud-daula and Mughal Emperor Shah Alam-II and fought with the British army at Buxar on 22nd October, 1764. Mir Jafar was again put on the throne by the Britishers.
- On Mir Jafar's death, his son Nizam-ud-daula was placed on the throne and he signed a treaty on 20th February, 1765, by which the Nawab had to disband most of his army and to administer Bengal through a deputy *subedar* nominated by the company.
- Robert Clive became the first Governor of Bengal in 1765.
- After the Battle of Buxar, the Company gave Shah Alam-II a subsidiary of Rs. 26 lakh and secured *Diwani* of Arrah and Allahabad.
- The important outcome is the **Treaty of Allahabad**.

### **Treaty of Allahabad (August, 1765)**

- English got the *Diwani* rights (right to collect revenue) of Bengal, Bihar and

Orissa) and gave 26 lakhs.

- The Dual Government of Bengal was established in 1765, wherein the company got the right to collect revenue but the *Nizamat right* (duty of administration) was with the Nawab.
- **Warren Hastings** ended the **Dual System** of Government in 1772.

## Revolt of 1857

### Causes of the Revolt

- **Political** Nana Sahib was refused pension as he was the adopted son of Peshwa Baji Rao-II. He lead the revolt at Kanpur.
- **Awadh** (Lucknow) was annexed in 1856, on charge of maladministration and Jhansi was annexed owing to the **Doctrine of Lapse**.

### Military Discrimination

Indian soldiers were paid low salaries, they could not rise above the rank of Subedar and were racially insulted.

### Religious Discrimination

The social reforms by British was against the people's will (widow remarriage, abolition of sati, school for girls, Christian missionaries etc). Soldiers were asked to use the *Enfield Rifles* with greased (by pork or beef) cartridges.

### Economic Grievances

Heavy taxations, discriminatory tariff policy; destruction of traditional handicrafts that hit peasants, artisans and small zamindars.

### Outbreak of the Revolt

- **Bengal Resentment** in which 19 native infantries of Behrampur, refused to use the newly introduced Enfield Rifle.
- **Mangal Pandey** & 34th native infantry fired at the sergeant major of his regiment. Known as a part of Mutiny of Barrackpur.
- Mangal Pandey was hanged.
- On 10th May, 1857, the sepoys at Meerut refused to use Enfiled Rifles and revolted. The mutiny spread throughout Uttar Pradesh and sepoys moved to Delhi crying **March to Delhi**.
- At Delhi, **Bahadur Shah II** was declared '*Shahenshah-i-Hindustan*'.
- Where the rulers were loyal to the British, the soldiers revolted as in Gwalior and Indore. In some places, people revolted before the sepoys.
- In the beginning, the rebels were successful. Europeans were killed,

police stations and law courts were attacked and revenue records were destroyed. But, the revolt was soon suppressed.

#### **Centres of Revolt and their Leaders**

- ❖ **Delhi:** Bahadur Shah II, General Bakht Khan
- ❖ **Kanpur:** Nana Sahib/Dhondhu Pant (adopted son of Baji Rao-II) Tantia Tope, Azimullah Khan
- ❖ **Jhansi:** Rani Lakshmi Bai
- ❖ **Lucknow:** Begum Hazrat Mahal, her son Birjis Qadir.
- ❖ **Faizabad:** Maulavi Ahamdullah
- ❖ **Bareilly:** Khan Bahadur Khan
- ❖ **Bihar (Arrah):** Kunwar Singh, Zamindar of Jagdishpur.

### Suppression of the Revolt

- **John Lawrence** remarked, "Had a single leader of ability arisen among them we must have been lost beyond redemption." Delhi was captured on 20th September, 1857 by **John Nicholson** and Bahadur Shah II was deported to Rangoon, where he died in 1862. His sons were shot dead at Delhi.
- Jhansi as captured by Hugh Rose on 17th June 1858. Rani Lakshmi Bai died in the battle field.
- Lucknow was recaptured on 21st March, 1858 by **Colin Campbell, Havelock** and **Outram**.
- Nana Sahib and Hazrat Mahal both escaped to Nepal.
- **William Taylor** and **Edgre** supressed the revolt at Arrah. Tantia Tope was betrayed by a friend. He was captured and executed on 15th April, 1859.

#### **Rani Lakshmi Bai**

Rani Lakshmi Bai, nicknamed *Manu*, married to Raja Gangadhar Rao in 1842. The couple adopted a child in 1853 Lord but Lord Dalhousie wished to annex Jhansi under the *Doctrine of Lapse*. Rani did not surrender and died fighting at Kalpi near Jhansi during the Revolt of 1857.

### Causes Behind the Failure of the Revolt

- Lack of unity and poor organisation of the revolt. All the classes of the society were not effected or participated in the revolt.
- Lack of common motive for participating in the revolt. Some of the rulers like **Scindhias**, **Nizam** and **Holkars** helped Britishers in repressing the revolt.
- The military equipments of rebels were inferior.
- The most significant feature of the

revolt was the exhibition of Hindu-Muslim Unity.

- Concentrated on the Northern part of India.

The following historians had different views on the revolt.

Historian	Views on the revolt
V. D. Savarkar	'First war of independence'.
R. C. Majumdar	'Neither 'first' nor 'national' nor a war of independence'.
Disraeli	'An national revolt rooted in deep mistrust'.
Malleson	'Sepoy mutiny'

### **Impacts of the Revolt**

- In August 1858, the British Parliament passed an Act, which put an end to the rule of the Company. The responsibility of the administration of British India passed into the hands of the **British Queen** and the Parliament.
- An office of the Secretary of State for India with a 15 members' council was constituted for the administration of India.
- The designation of the **Governor General** was changed to Viceroy, who was to act as a representative.
- 'Doctrine of Lapse' was withdrawn. Princely states were assured against annexation.
- The British pursued the **divide and rule** policy.
- Increase in the number of **white soldiers** in the army.
- Total expense of the suppression was borne by the Indians.

### **Opinions on the Nature of the 1857 Revolt**

Opinion Maker	Nature of Revolt
Sir John Seeley	<i>Wholly unpatriotic and selfish se po y m u tiny w ith no native leadership</i>
T. R. Holmes	<i>A conflict between civilisation and barbarism.</i>
Outram and Taylor	<i>A Hindu -Muslim conspiracy</i>
V.D Savarkar	<i>Indian War of Independence.</i>
Bipin Chandra	<i>The entire movement lacked a unified and forward looking program to be implemented after the capture of power.</i>
S.N Sen	<i>What began as a</i>

*fight for religion ended as a war of independence.*

*Benjamin Disraeli*

*Is it a military mutiny or is it an ational revolt?*

*Dr. R.C Majumdar*

*The so called First National War of Independence 1857, is neither First, nor National, nor War of Independence.*

## **Governor Generals of Bengal**

### **Warren Hastings (1772-85)**

- He became Governor of Bengal in 1772 and first Governor-General of Bengal in 1773, through the **Regulating Act of 1773**.
- He abolished the **dual system of administration**.
- Divided Bengal into districts and appointed collectors and other revenue officials.
- Established India's first Supreme Court in Calcutta.
- He founded **Asiatic Society of Bengal** with William Jones in 1784 and wrote introduction to the first English translation of the **Gita** by **Charles Wilkins**.
- Started *Diwani* and *Faujdari adalats* and the district level *Sadar diwani* and *Nizmat adalats* (appellate courts).
- He redefined Hindu and Muslim laws. A translation of code in Sanskrit appeared under the title 'Code of Gentoo laws'.
- First Anglo-Maratha War occurred during his period, which ended with **Treaty of Salbai** (1776-82).
- Second Anglo-Mysore War (1780-84), ended with **Treaty of Mangalore**.
- Rohilla War in 1774.
- Pitts India Act, 1784 and Edmund Burke Bill, 1783 was passed.
- Deprived *zamindar* of their judicial powers. Maintenance of records was made compulsory.
- Impeachment proceedings started against him in Britain on the charges of taking bribes. After a trial of 7 years, he was finally acquitted.

### **Lord Cornwallis (1786-1793)**

- First person to codify laws (1793). The code separated the revenue administration from the administration of justice.
- He introduced *Izaredari System* in 1773.
- He started the **Permanent Settlement of Bengal**.
- He created the post of **District Judge**. He is known as **Father of Civil Services in India**.
- Third Anglo-Mysore War and the **Treaty of Seringapatnam**.
- He undertook police reforms.
- Reform of the Judiciary (1793) setting up courts at different levels and separation of revenue administration from Judicial administration.

### **Lord Wellesley (1798-1803)**

- Introduced the system of **Subsidiary Alliance**. Madras presidency was formed during his tenure.
- In **Fourth Anglo-Mysore War** 1799, Tip Sultan died.
- First subsidiary treaty with Nizam of Hyderabad.
- Second Anglo-Maratha War.
- In 1800, he set-up **Fort William College** in Calcutta. He was famous as *Bengal Tiger*. He brought the Censorship of Press Act, 1799.

#### **Subsidiary Alliance**

- ❖ *The subsidiary alliance system was used by Wellesley to bring Indian states within the orbit of British political power.*
- ❖ *Under this system, the ruler of the allying Indian state was compelled to accept the Permanent Stationing of a British force within his territory and to pay a subsidy for its maintenance. British promised that they will not interfere in the internal affairs, but this was a promise they seldom kept.*
- ❖ *It disarmed the Indian states and threw British protectorate over them.*
- ❖ *First to accept subsidiary alliance was Nizam of Hyderabad 1798, the second was the Nawab of Awadh, 1801.*
- ❖ *The Peshwa, the Bhonsle, the Scindia and Rajputs of Jodhpur, Jaipur accepted the subsidiary alliance.*

## **Governor Generals of Bengal of India**

### **Lord William Bentinck (1828-1834)**

- Most liberal and enlightened amongst all the Governor Generals of India,
- Regarded as the '**Father of Modern Western Education in India**'.

- Abolition of Sati in 1829.
- Suppression of *Thugi* (1830).
- Passed the Charter Act, of 1833.
- Deposition of Raja of Mysore and annexation of his territories (1831).
- Abolition of Provincial court of Appeal and appointment of commissioners instead.
- **He was the First Governor-General of India.**
- **First Medical College** was opened in Calcutta in 1835.
- **Treaty of Friendship** with Ranjit Singh (1831).
- Annexed Coorg (1834) and Central Cachar (1831).

### **Lord Dalhousie (1848-56)**

- Second Anglo-Sikh War (1848-49) and annexation of Punjab.
- Abolished titles and pensions.
- Widow Remarriage Act (1856).
- Introduced **Doctrine of Lapse**.
- **Woods Educational Despatch** of 1854.
- Introduction of the **Railway, Telegraph** and the **Postal System** in 1853.
- Establishment of a separate **Public Works Department** in every province.
- An **Engineering College** was established at Roorkee.
- Planned to open universities in Calcutta, Bombay and Madras on the model of Universities of London.
- Second Anglo-Burmese War (1852).
- Santhal uprisings (1855-56).
- Charter Act of 1853.

## **Viceroy of India**

### **Lord Canning (1856-1862)**

- Revolt of 1857.
- Universities of Calcutta, Bombay and Madras were opened in 1857.
- He was last Governor General appointed by the East India Company and the **first Viceroy**.
- Passed the **Government of India Act of 1858**, which ended the rule of the East India Company.
- The Doctrine of Lapse was withdrawn. The **Indian Penal Code** (1859) was passed. Income tax was introduced for the first time in 1858.
- The Indigo riots in Bengal.
- The **Indian Councils Act of 1861** was passed, which proved to be a landmark in the constitutional history of India. Indian High Court Act, (1861). Under this act, High Courts were opened in 1865.
- Bombay and Madras founded in 1857

### Lord Mayo (1869-72)

- Introduction of financial decentralisation in India and made the first Provincial Settlement in 1870.
- He established the **Department of Agriculture and Commerce**.
- He organised the Statistical Survey of India.
- In 1872, the first **Census** was done in India.
- He established the **Rajkot College** in Kathiawar and **Mayo College** at Ajmer.
- He was the only **Viceroy to be murdered** in office by a convict in the Andaman 1872.
- He introduced state railways.

### Lord Lytton (1876-80)

- Most unpopular Viceroy of India.
- Arranged the Grand Darbar in **Delhi** (in 1877), when the country was suffering from severe famine.
- Passed the Royal Title Act, (1876) and Queen Victoria was declared as **Kaiser-i-Hind**
- He passed Arms Act, (1878) the infamous **Vernacular Press Act**, (1878) and lowered the maximum age of ICS from 21 to 19 years.
- **Second Anglo-Afghan War 1878-80.**
- Famine Commission under Starchy was appointed by him in 1878.
- In 1876, **Deccan Agrarian Relief Act** was passed.

### Lord Ripon (1880-1884)

- He was appointed by the Liberal Party under Gladstone. Repealed the Vernacular Press Act in 1882.
- The first Factory Act, came in 1881 (Improve the labour condition). In rural areas, Local Boards were set-up in 1889 Madras Local Board Act, was passed. He was famously known as "**Father of Local Self Government**".
- First Official Census in India (1881).
- Famine code was adopted (1883).
- Appointed **Hunter Commission** for Educational reforms in 1882.
- **Ilbert Bill Controversy (1883-84)**, which empowered Indian Judges to inquire into European cases.
- Foundation of **Punjab University**.

### Lord Dufferin (1884-88)

- Third Anglo-Burmese War and annexation of Burma (1885).
- Formation of **Indian National Congress (INC)** in 1885.
- Bengal Tenancy Act, in 1885.
- Dufferin called the Indian National Congress as 'microscopic minority'.

### Lord Lansdowne (1888-94)

- Factory Act, of 1891.
- Indian Council Act, of 1892.
- Civil Services were classified- Imperial, Provincial and Subordinate services.
- In 1891, Age of Consent Act, under which marriage of girl below 12 years was prohibited.
- Appointment of **Durand Commission in 1893** to define the line between British India and Afghanistan.

### Lord Curzon (1899-1905)

- Appointed a Police Commission in 1902 under Andrew Frazer.
- Universities Commission appointed in 1902, under Thomas Railey.
- **Indian Universities Act**, passed in 1904.
- Famine Commission under Macdonell.
- A new Department of Commerce and Industry established.
- Partition of Bengal (16th October, 1905).
- The risings of the frontier tribes in 1897-98 led him to create the North-Western Frontier Province.
- He passed the **Ancient Monuments Protection Act**, (1904) to restore India's cultural heritage. Thus, the **Archaeological Survey of India was established**.
- Passed the **Indian Coinage and Paper Currency Act**, (1899) and put India on a gold standard.
- **PUSA Agricultural Institute** in 1903.

### Lord Minto-II (1910-1916)

- Swadeshi Movement.
- **Surat split** (split in Congress between the moderates and the extremists, 1907).
- Indian Councils Act, 1909 and Morley-Minto Reforms.
- Foundation of Muslim League, 1906.
- Newspapers Act, 1908.

### Lord Hardinge-II (1910-1916)

- Annulment of the Partition of Bengal in 1911.
- Bomb was thrown at Hardinge near Chandni Chowk, but escaped unhurt.
- Transfer of capital from Calcutta to Delhi in 1911.
- Darbar in Delhi and Coronation of King George V in 1911.
- In 1912, Bihar and Orissa separated from Bengal and, became a new state.
- Establishment of **Hindu Mahasabha** by Madan Mohan Malviya (1915).
- Gandhiji came back to India from South Africa (1915).

### Lord Chelmsford (1916-21)

- Government of India Act, 1919 also known as Montague-Chelmsford Reforms.
- Repressive Rowlatt Act, (1919).
- **Jallianwala Bagh Massacre** (13th April, 1919).
- **Home Rule Movement** both by Tilak and Annie' Beasant.
- **Saddler Commission** on Education in 1917.
- Appointment of **Hunter Commission** to look into Jallianwala Bagh Tragedy.
- Chambers of Prince, 1921, established.
- Non Co-operation Movement started, Khilafat movement initiated.
- An Indian Sir S.P Sinha was appointed as the Governor of Bengal.
- Death of Tilak (1920).

### Lord Reading (1921-1926)

- Rowlatt Act was repealed along with Press Act of 1910.
- Holding of simultaneous examination for the ICS in England and India from 1923. Prince of Wales visited India in November, 1921.
- Moplah Rebellion (1921) took place in Kerala.
- Chauri-Chaura incident and withdrawal of Non-Cooperation Movement.
- Formation of Swaraj Party by C.R Das and Motilal Nehru (1923).
- Communist Party of India founded by M.N Roy (1925).
- Kakori Train Conspiracy (1925).
- Vishwabharati University (1922).
- Lee Commission (1924) for public services. **Young Hilton Committee** for currency notes (1926).
- Royal Commission on agriculture.
- RSS founded in 1925.
- Murder of Swami Shraddhanand.

### Lord Irwin (1926-1931)

- Simon Commission visited India in 1928. Buttler Commission in 1927.
- Deepawali declaration by Lord Irwin (1929).
- All India Youth Congress, 1928.
- Nehru Report, 1928.
- Lahore Session of the Congress, (1929) and Poorna Swaraj declaration.
- First Round Table Conference 1930, Congress boycotted it.
- Civil Disobedience Movement, 1930 started with **Dandi March** (12th March, 1930).
- Gandhi-Irwin Pact, 5th March, 1931.
- Sharda Act, 1929, under which marriageable age of girls (14 years)

and boys (18 years) was raised.

- Jawaharlal Nehru and Subhash Chandra Bose founded **Independence of India League**.

### Lord Wellington (1931-1936)

- Second and Third Round Table Conferences.
- Communal Award by McDonald (British PM), **Government of India Act, 1935**.
- **Poona Pact** was signed.
- During his period Orissa was separated from Bihar (1936) and a new province **Sindh** was created (1936), Burma separated from India as well in 1935.
- All India Kisan Sabha, 1936.
- Foundation of Congress Socialist Party, 1934.

### Lord Linlithgow (1934-44)

- First General Election (1936-37) Congress Ministries.
- S.C. Bose president of 51st INC (1938).
- Forward Bloc founded in 1939.
- **Deliverance day** by Muslim League 1939.
- Lahore Resolution of Muslim League (1940) demand of Pakistan.
- **August Offer**, 1940.
- "Divide & Quit" at the Karachi Session (1940).
- Passing of Quit India resolution (1942).
- **Cripps Mission**, 1942.
- **Quit India Movement**, 1942.
- In 1943, Muslim League celebrated 'Pakistan day'.

### Lord Wavell (1943-47)

- **C. R Formula** (Rajaji Formula), 1944.
- **Wavell Plan and Shimla Conference**, 1945.
- Cabinet Mission came to India in May, 1946. The Congress and the Muslim league both rejected its proposals.
- Muslim League celebrated 16th August, 1946 as '**Direct Action Day**'.
- INA trials and the Naval Mutiny, 1946.

### Lord Mountbatten

- **June third plan**
- Last British Viceroy of British India.
- First Governor General of free India.
- Boundary commissions under **Radcliffe**
- Introduction of Indian **Independence Bill** in the House of Commons.

### C. Rajagopalachari

- **Last Governor General of Free India**.
- The only Indian Governor General to remain in office from 21st June, 1948 to 25th January, 1950.

# Growth of Modern Education in India

## First Phase (1758-1812)

- Initially, the East India Company was not interested in the development of education. Some minor exceptions were efforts by individuals.
- The **Calcutta Madrasa** established by Warren Hastings in 1781, for the study of Muslim law.
- The **Sanskrit College** established by Jonathan Duncan at Banaras in 1791, for the study of Hindu law and philosophy.
- **Fort William College** established by Wellesley in AD 1800, for training of Civil Servants of the Company in Indian Languages and customs (closed in AD 1802).

## Second Phase (1813-1853)

- For the first time, the British Parliament included in 1813 Charter, a clause under which the Governor General-in-Council was bound to keep a sum not less than one lakh rupees, for education. However, the company used this fund for promoting Indian language and literature.
- The charter allowed the Christian missionaries to spread their religious ideas in India.
- The greatest importance of the 1813 Act was that the Company, for the first time, acknowledged state responsibility for promotion of education in India.
- Establishment of **Hindu College** in 1817 with the efforts of Raja Ram Mohan Roy for imparting Western education. Sanskrit college was set-up at Calcutta in 1824.
- In 1823, a **General Committee of Public Instruction** was appointed to look after the development of education in India, but failed due to Orientalist-Anglicist controversy over the nature of education i.e. traditional or Western and the medium of instruction.
- The controversy was settled by **Macaulay's Education Policy** 1835, which was approved by Lord William Bentinck. The policy favoured English education to a traditional one.
- In 1844, Lord Hardinge decided to give government employment to Indians educated in English schools. This further boosted the Western education in India.
- **Bethune school** was founded by J.E.D Bethune at Calcutta (1849), **Agricultural Institute at Pusa** (Bihar)

and **Engineering Institute at Roorkee**.

## Third Phase (1854-1900)

- In 1854, Charles Wood prepared a despatch on an Educational System for India, which came to be called the *Magna Carta of Education* in the country. According to Wood's scheme
  - (i) The government needed to spread Western education through English medium for higher education. But Vernacular primary schools should be set-up in rural areas.
  - (ii) A **grants-in-aid system** to encourage private enterprises involvement in education.
  - (iii) A department of public instruction to be set-up in each of the five provinces.
  - (iv) Universities in Calcutta (1857), Bombay (1857) and Madras (1857) were established.
  - (v) Teacher's training institutions.
  - (vi) Promotion of Education for Women.
- Most of Wood's proposals were implemented, which led to Westernisation of the Indian Educational System.

## **Sergeant Plan, 1944**

- ❖ The Sergeant Plan, worked out by the Central Advisory Board of Education in 1944, called for elementary and higher secondary schools, universal, free and compulsory education for children in the 6-11 age group and a six-year school course for the 11 -17 age group.
- ❖ Though, the plan aimed to reconstruct education in 40 years, it was later restricted to 16 years.
- ❖ Sir John Sergeant was the Educational Advisor to the Government of India.

- In 1882, Lord Ripon appointed the Hunter Commission under Sir W.W Hunter. The commission's views were restricted to primary and secondary education. It emphasised over the state's role in extending education, female education and to involve private enterprise in education.
- As a result, Punjab (1882) and Allahabad (1887) Universities were established.

## Fourth Phase (1901-1920)

- Lord Curzon appointed University Commission under Sir Thomas Rayleigh Based on his report, the **Indian Universities Act** was passed in 1904.

## Social and Cultural Uprisings

### Brahmo Samaj

- Founded by Raja Rammohan Roy (1771-1833).
- He is regarded as the first great leader and reformer of modern India. He was one of the earliest propagators of modern education.
- He started **Atmiya Sabha** in 1815. **Brahmo Sabha** in 1828 and **Brahmo Samaj** in 1830.
- He was deeply influenced by monotheism, anti-idolatry of Islam, Sufism, ethical teachings of Christianity, liberal and rationalist doctrine of the West.
- He laid emphasis on human dignity and criticised social evils.
- He launched a movement for the abolition of *Sati* through his journals **Sambad Kaumudi** (1819), **Precepts of Jesus** in 1820.
- He was a gifted linguist. He knew more than a dozen languages including Sanskrit, Persian, Arabic, English, French, Latin, Greek and Hebrew. He was opposed to Sanskrit system of education.
- He gave enthusiastic assistance to David Hare, who founded the famous **Hindu College in Calcutta** in 1817.
- Established a **Vedanta College** (1825), in which courses both in Indian and Western, Social and Physical sciences were offered.
- He wrote **A Gift to monotheists** or 'Tuhafat-ul-Muwaihidin' in Persian in 1809.
- Other important leaders of Brahmo Samaj were **Devendranath Tagore**, who joined in 1848 and **Keshab Chandra Sen** in 1858.
- Later, there was a split and in 1866, Devendranath Tagore founded **Adi Brahmo Samaj** and **Tattva Bodhini Sabha** and **Brahmo Samaj of India** was founded under the leadership of Keshab Chandra Sen.
- **Anand Mohan Bose** started Sadharan Brahmo Samaj.
- Justice M.G Ranade founded the **Prarthana Samaj**.

### Arya Samaj

- The first Arya Samaj unit was founded by Swami Dayanand Saraswati in 1875 in Bombay.

- Swami Dayanand Saraswati was born in 1824 in Gujarat. His original name was Mula Shankar.
- He was known as the earliest Neo-nationalist. He looked on the Vedas as India's Rock and Ages. His motto was **go back to the Vedas** and **India for the Indians**.
- Arya Samaj stood for four-fold Varna system determined by merit and not by birth; for equal rights for men and women.
- Opposed untouchability, caste discrimination, child marriage and supported widow remarriage and intercaste marriages.

### Brahmo Ideas

*The purpose of Brahmo Samaj was to purify Hinduism and to preach monotheism. It was opposed to idol worship, priesthood and ritualistic worship; Emphasised on worship through prayer, meditation and reading from the upanishada.*

- He wrote three books-**Satyartha Prakash, Veda-Bhashya Bhumika and Veda Bhashya**.
- In 1886, Lala Hansraj instituted Dayanand Anglo Vedic (DAV) school in Lahore. In 1902, **Gurukul Pathshala** was established at Haridwar.
- After the death of Dayanand in 1883, difference occurred in **Gurukul section** and DAV section. While Gurukul section laid emphasis on the traditional pattern of education, the DAV stood for the spread of English education.
- The Arya Samaj started the **Shuddhi Movement** to convert non-Hindus to Hinduism. Other prominent Arya Samajists were Lala Hansraj, Pt. Guru Dutt, Lala Lajpat Rai and Swami Shraddhanand.

### Ramakrishna Mission

- It was established by Swami Vivekanand to carry on humanitarian relief and social work after death of his **Guru Ramkrishna Paramhansa** in 1897.
- His original name was **Narendranath Dutta**. He was born in Calcutta in 1863.
- He stressed on social action and proclaimed the essential oneness of all religions and condemned any narrowness in religious matters.
- He attended the Parliament of religions held at Chicago in 1893 and published two papers **Prabhudha Bharata** in English and **Udbodhana** in Bengali.
- He urged people to inculcate the spirit of liberty, equality and free thinking.

- He worked for emancipation of women.
- He emerged as a preacher of **Neo Hinduism**. He advocated the **Doctrine of Service**-the service of all human beings. He was considered as the Spiritual Father of the Modern Nationalist Movement.
- Irish woman **Margaret Noble** (Sister Nivedita) popularised Ramakrishna Mission after Vivekananda's death.

### **Dharma Sabha**

- The orthodox Hindus organised the Dharma Sabha under leadership of Raja **Radhakant Dev** in 1830 to counter Brahmo Samaj.
- It was opposed to reforms and protected orthodoxy, but played an active role in promoting Western Education even to girls.

### **Young Bengal Movement**

- During the late 1820 and early 1830, there emerged a radical intellectual trend among the youth in Bengal, which came to be known as the 'Young Bengal Movement'.
- It was founded by **Henry Louis Vivian Derozio**. He was a teacher in Hindu College in Calcutta.
- They believed in truth, freedom and religion. Supported women's education.
- Derozio edited the papers-**Calcutta Gazzette** and **India Gazette**.

### **Tribal Movements**

<b>Revols</b>	<b>Years</b>	<b>Area</b>
Chaur Uprising	1966-70	Bengal and Bihar
Kol Uprising	1824-28, 1839,1899	Gujarat
Bhil Uprising	1818-31	Wester Ghat
Rampa Rebellion	1879	Coastal Ghat
Khasi Rising	1846-48, 1855, 1914	Orissa
Kuki Rising under Rani Gaidilie	1917-19	Manipur
Ho Rising	1820,1822, 1832	Singhbhum and Chhotanagpur
Singpo Rising	1830-39	Assam
Kol Rising under Buddha Bhagat	1831-32	Ranchi, Singhbhum and Hazaribag
Khond Rising under Chakrabisai	1846-48, 1855,1941	Khandmal area in Orissa
Naikad Revolt under Roop Singh and Joria Bhagat	1858-59, 1868	Gujarat
Kachhag Revolt under Sambhudaan	1882	Chhachar area Assam
Bhil Rising under Govind Guru	1913	Baswana and Durgapur area of South Rajasthan
Oraon Revolt under Jatra Bhagat	1914-15	Chhotonagpur area
Tharo Kuti Rising under Jadonand and Rani Gaidilie	1917-19	Manipur
Munda Revolt under Birsa Munda	1899-1900	Chhotonagpur area
Rampa Rebellion under Allari Sita Ram Raju	1923-24	Andhra Pradesh

### **Indian Reform Association**

- Founded by **Keshab Chandra Sen** in Calcutta in 1870.
- Objective was to create public opinion against child marriages and for legalising the Brahma form of marriage. Promoted intellectual and social status of women.

### **Theosophical Society**

- Founded by **Madam H.P Blavatsky** and **Col. H.S Olcott** in New York in 1875.
- In 1882, its headquarters were shifted to Adyar (Tamil Nadu).
- The Theosophical Society of India was founded by Annie Besant. She founded Central Hindu College in 1898, which later became Banaras Hindu University in 1916.
- They drew inspiration from Indian thought and culture. It advocated the revival and strengthening of ancient religion of Hinduism, Zoroastrianism and Buddhism. It accepted the law of Karma and was inspired by *Upanishada*, *Sankhya*, *Yoga* and *Vedanta*.

### **Khudai Khidmatgar Movement**

Started by **Khan Abdul Gaffar Khan** in NWFP (1929).

### **Lokahitawadi**

Started by **Gopal Hari Deshmukh**. He advocated Western education and free education for upliftment of women. As a votary of national self-reliance, he attended Delhi durbar in 1876, wearing hand spun **khadi cloth**.

# The Indian National Movement

## The Indian National Congress

- The **National Conference** in 1883, decided to invite prominent public men and associations to discuss questions on general concern.
- **Indian National Union-1884** was formed by A.O Hume. The National Conference and the Indian National Union merged to form the Indian National Congress in 1885.
- The first meeting of INC was organised by **A. O Hume** at **Gokuldas Tejpal Sanskrit College** on **28th December, 1885** in **Bombay**. A.O Hume was a retired British Civil Servant. Meeting was presided over by Womesh Chandra Bonnerjee and attended by 72 delegates.
- It was the first organised expression of the Indian National Movement on an all India scale. In 1886, the delegates to Congress became 436.
- The venue of first meeting was changed from Pune to Bombay due to out break of Cholera in Pune.
- Kadambini Ganguly was the first woman graduate of Calcutta University to address the Congress Session in 1889.
- **Safety Valve Theory:** British historians argue that Hume's main purpose was to provide a *safety valve* to the growing discontent among the educated Indians.
- **Opposition to Congress:** By Syed Ahmed Khan, Raja Shiva Prasad of Banaras and Lord Dufferin (then Viceroy).

### Quick Digest

❖ 1st President of INC	W.C Bannerjee
❖ 1st Woman President	Annie Besant
❖ 1st Muslim President	Badruddin Tayabji
❖ 1st English President	George Yule
❖ Gandhi became President	1924, Belgaum
❖ Jawaharlal Nehru became President	1929, Lahore
❖ Subhash Bose became President	1938, Haripura

## Objectives and Methods of Work

### **Moderate Phase, (1885-1905)—**

- Development and consolidation of feeling of national unity irrespective of race, caste, religion or province.

→ Peaceful constitutional agitations, prayer and petitions were the instruments of work.

→ They succeeded in passing the Indian Councils Act of 1892, which allowed some members to be indirectly elected by Indians, but keeping the official majority intact.

### **Moderate Leaders—**

- A.O Hume, D.B Naoroji, Badruddin Tayabji, M.G Ranade, W.C Banerjee, S.N Banejee, Pherozeshah Mehta, C. Shankaran Naiyar, M.M Malviya, V.S Shrinivas Shastri, Tej Bahadur Sapru, G.K Gokhale, Anand Mohan Bose, E. Dinesh Wacha, Ras Bihari Ghosh, Mohanlal Ghosh, P. Anand Charlu, C.Y Chintamani, R.C Dutt, S. Subrahmanyam Aiyer, K.T Tailang, Madhusudan Das, Rahimtulla M. Sayani.
- They worked to create a strong public opinion to arouse consciousness and national spirit. They persuaded the British Government and British public opinion to introduce reforms in India.

### **Extremist Phase (1905-17)**

#### **Cause for the Rise of Extremists—**

- Dissatisfaction with the methods and achievements of moderates.
- Growing consciousness about the exploitative character of the British rule. Loss of Britain in the Boer wars (1899-1902) demolished the myth of whiteman supremacy.
- Reactionary policies of Curzon University Act (1904), Indian Official Secrets Act (1904) to restrict freedom of press and partition of Bengal.
- Extremists gave the idea of India's independence the central place in India's politics.

#### **Methods of the Extremists**

- Promotion of Swadeshi and Boycott of foreign goods. Non-Co-operation with Britishers (Passive Resistance). *Extremist leaders*—Lala Lajpat Rai, Bal Gangadhar Tilak, Bipin Chandra Pal, Sir Aurobindo Ghosh.
- They wanted to take the movement outside Bengal.

#### **Partition of Bengal**

- Through a royal proclamation, **Lord Curzon** ordered Partition of Bengal creating East Bengal and Assam out of rest of Bengal on **16th October, 1905**.

- The objective was to set up a communal gulf between the Hindus and Muslims.
- The Indian National Movement entered its second phase after the Partition of Bengal.
- The British said that the existing province of Bengal was too big to be efficiently administered by a single Provincial Government.
- The Indian National Congress and the nationalists of Bengal firmly opposed the Partition. Within Bengal, different sections of population— zamindars, merchants, lawyers, students and even women rose up in spontaneous opposition to the partition of their province.
- **Divide and Rule:** The nationalists could see that it was a deliberate attempt to divide the Bengal's territory on religious grounds as for Eastern part Muslims will be in majority and for the Western part, the Hindus.
- **Rabindranath Tagore:** composed the National Song Amar Sonar Bangla for the occasion. This song was adopted as National Anthem by Bangladesh in 1971, after its liberation from Pakistan.

### The Anti-Partition Movement

- The Anti-Partition movement was initiated on 7th August, 1905. On that day, a massive demonstration against the partition, was organised in the Town Hall in Calcutta.
- The partition took effect on 16th October, 1905.

- ❖ **Banaras Session of INC, 1905-**  
Presided by GK Gokhale-first call for Swadeshi.
- ❖ **Meeting of INC at Calcutta 7th August, 1905** Resolution to boycott British goods was adopted.

### The Swadeshi and Boycott

- It had its origin in the Anti-Partition movement of Bengal. Mass meetings were held all over Bengal, where **Swadeshi** or the use of **Indian goods** and the boycott of **British goods** were proclaimed and pledged. Public burning of foreign cloth were organised and shops selling foreign cloths were picketed.
- An important aspect of the Swadeshi Movement was the emphasis placed

- on self reliance or Atmashakti.
- Acharya P.C Roy organised his famous Bengal Chemical Swadeshi stores.
- The **Swadeshi Movement** had several consequences like flowering of nationalist poetry, prose, journalism, self-reliant and constructive activity, coupled with opening up of many national educational institutions.
- Nationalist Educational Institutions were founded e.g., Bengal Technical Institute, Bengal National College.
- B.C Pal and Chidambram Pillai led **Vandemataram** Movement in Madras.
- Lala Lajpat Rai and Ajit Singh led the movement in Punjab.

### Why Swadeshi Movement Failed?

- Severe government repression.
- Split in nationalists at Surat.
- Lack of effective organisation.
- The movement was rendered leaderless.

### Formation of Muslim League

- Set-up in 1906, under the leadership of Aga Khan, Nawab Salimullah of Dhaka and Nawab Mohsin-ul-Mulk.
- League supported Partition of Bengal, opposed the Swadeshi Movement, demanded special safeguards for its community and separate electorate for Muslims.
- **Calcutta Session of INC (1906)**  
Dadabhai Naoroji, the President of the session, declared that Self Government or *Swaraj*, like that of United Kingdom was the goal of Indian people.

### Surat Split (1907)

- The INC split into two groups during the session at Surat in 1907. Extremists were led by **Lal, Bal, Pal**, while Moderates were led by G.K Gokhale.

#### Moderates

- They demanded mild constitutional reforms, economic relief, administrative reorganisation and protection of civil rights.

#### Extremists

- They were dissatisfied with the achievement of the moderates. They realised that the true nature of British was exploitative.
- There were 3 groups of extremists The **Maharashtrian** group (headed by Bal Gangadhar Tilak), **the Bengal group** (represented by B.C Pal and Aurobindo) and **the Punjab group** (led by Lala Lajpat Rai).

- Aurobindo published **New lamps for old** in the **Indu Prakash** in 1954-94. It was the first systematic critique of the moderates.

### **Indian Councils Act of 1909 or the Morley Minto Reforms**

- Number of elected members in the imperial and provincial legislative councils increased. Separate electorates introduced for Muslims.
- Non-official members to be elected indirectly. Thus, election introduced for the first time.
- Legislatures could pass resolutions, ask questions and supplementaries and vote for separate items on the budget.
- One Indian to be taken in Viceroy's executive council. Satyendra Sinha was first Indian member to the executive council.
- **Annulment of Partition:** In 1911, the government announced annulment of the Partition of Bengal. Western and Eastern Bengal were to be reunited.

### **Ghadar Party (1913)**

- Formed by Lala Hardayal, Taraknath Das and Sohan Singh Bakhna.
- The war period witnessed the growth of revolutionary movement not only in India, but outside India as well, by the Indians.
- Indian revolutionary in the United States of America and Canada had established the Ghadar (Rebellion) Party in 1913. Most of the members of the party were Punjabi Sikh peasants and ex-soldiers, who migrated.
- The party was built around the weekly paper '*The Ghadar*', which carried the caption *Angrezi raj ka Dushman*.
- Headquarters were at **San Francisco**.
- The outbreak of the first World War provided the Ghadarites with an opportunity to free India from a government, which was indifferent to their cause.
- They began to return India in thousands for a coordinated revolt, but unfortunately the authorities came to know about their plans and took immediate action. The rebellious regiments were disbanded and their leader were either imprisoned or hanged.
- Some of the prominent Ghadar leaders were—Baba Gurumukh Singh, Kartar Singh Sarabha, Sohan Singh Bakhna, Rahmat Ali Shah, Bhai Paramanand and Mohammad Barkatullah.

- To carry out other revolutionary activities, "*Swadeshi Sevak Home*" at Vancouver and United India House at Seattle was set-up.

### **Komagata Maru Incident (1914)**

- Komagata Maru was a Japanese steam ship that carried Sikh and Muslim immigrants from Punjab to Vancouver, Canada. But the ship was forced to return back to India by the Canadian authorities. The ship docked at Budge Budge in Calcutta. The Britishers considered the passengers as dangerous political agitators and tried to arrest Baba Gurdit Singh from among them. Police opened fire on them and 19 passengers died in the incident.

### **Home Rule Movement (1916)**

- After **Tilak's** return having served sentence of six years in **Mandlay**, he tried securing the readmission of himself and other extremists into the Indian National Congress. With the need being felt for popular pressure to attain concessions, disillusionment with Morley-Minto' reforms and wartime miseries, Tilak and **Annie Besant** readied to assume leadership.
- The Home Rule League was pioneered on lines of a similar movement in Ireland. Muslim League supported the movement. Its objective was to work for social and political reforms.

### **Tilak's Home Rule Movement**

- It started in April, 1916 at Poona. Tilak's league was to work in Maharashtra, Karnataka, Central Province and Berar excluding Bombay. Tilak linked up the question of *Swaraj* with the demand for the formation of linguistic states and education in Vernacular language.
- He gave the slogan "*Swaraj is my birth right and I shall have it.*" Tilak's newspapers **Maratha** and **Kesari** were organs for home rule.

### **Annie Besant's Home Rule Movement**

- Started with Subramanyam Iyer at Adyar in September, 1916. Annie Besant's league worked in rest of India.
- Annie Besant's newspapers **New India**, **Commonwealth** and **Young India** became important for this movement. She coined the term Commonwealth.
- George Arundale was the organising secretary of the movement.

- Many moderate nationalists, who were dissatisfied with the Congress inactivity, joined home rule agitation. In June 1917, Annie Besant was arrested, popular pressure forced the government to release her in September, 1917.

#### Lucknow Session of the Congress (1916)

- Presided by a moderate Ambika Charan Majumdar. The growing nationalist feeling in the country produced two historic developments at the Lucknow Session of the Indian National Congress in 1916. Firstly, the two wings of the Congress were reunited. The Lucknow Congress was 1st united Congress, i.e., brought about an union of moderates and extremists.
- Secondly at Lucknow, the Congress and the All India Muslim League sank their old differences and put up a common political demand for representative government and dominion status, before the government. Congress accepted the separate electorates. This led to **Congress-League Pact**.

#### Montague Declaration (1917)

- A British policy was announced after the Lucknow pact, which came to be known as the August Declaration. It aimed at “increasing association of Indians in every branch of the administration for progressive realisation of responsible government in India. The declaration formed the basis of **Montague-Chelmsford Reforms**, of 1919.

#### Rowlatt Act (1919)

- In 1919, a **Sedition Committee** headed by **Justice Rowlatt** led to the Rowlatt Act. This act authorised the government to imprison any person without trial and conviction by the Court of Law for 2 years. The law also enabled the government to suspend the right of Habeas Corpus, which had been the foundation of Civil Liberties in Britain. It led to a countrywide agitation and marked the foundation of Non-Cooperation Movement.
- During March and April 1919, the country witnessed a remarkable political awakening in India. There

were hartals, strikes, processions and demonstrations.

#### Gandhi's Return to India

- Gandhi returned to India in January, 1915. He did not join any political organisation that did not accept the creed of non-violent Satyagraha.

*During 1917 and 1918, he was involved in three struggles.*

#### Champaran Satyagraha (1917)

- 1st Civil Disobedience Movement.
- To look into the problems of indigo planters (*tinkathia system*)

#### Ahmedabad Mill Strike (1918)

- First hunger strike. To settle disputes between the mill owners of Ahmedabad and the workers.

#### Kheda Satyagraha (1918)

- First Non-Cooperation Movement. Due to failure of crops, the farmers, with Gandhi, withheld the revenue to get remission based of revenue code.

#### Jallianwala Bagh Massacre (13th April, 1919)

- The dissatisfaction against Rowlatt Act led to mass agitations. The government was determined to suppress the mass agitation. A large but unarmed crowd had gathered on **13th April, 1919** at **Amritsar** (Punjab) in the **Jallianwala Bagh**, to protest against the arrest of their popular leaders Dr. Saif-ud-din Kitchlew and Dr. Satyapal. **General Dyer**, the Military Commander of Amritsar, decided to terrorise the people of Amritsar into complete submission. Jallianwala Bagh was a large open space, which was enclosed on three sides and had only one exit. General Dyer surrounded the Bagh, closed the exit with his troops and then ordered his men to shoot into the crowd. Thousands were killed and wounded.

- On 13th March, 1940, Sardar Udham Singh killed O'Dyer, when the latter was addressing a meeting in Coxton Hall, London.
- **Rabindranath Tagore** returned his knighthood in protest.
- **Hunter Commission** was appointed to inquire into it.

#### The Khilafat Movement

- During the first World War, **Turkey** allied with Germany and Austria

against British. The Indian Muslim regarded the Sultan of Turkey as their spiritual leader, **Khalifa**.

- After the war, the British removed the **Khalifa** from his power and fragmented Turkey. Hence, the Muslim started the **Khilafat Movement** in India, for the restoration of **Khalifa's** position.
- The leaders were Ali brothers (Shaukat Ali and Mohammed Ali), Maulana Azad, Hakim Ajmal Khan and Hasrat Mohani. Gandhi saw this as an opportunity to bring about Hindu-Muslim unity against the British, although C.R Das opposed it initially.
- The Central Khilafat Committee met at Allahabad. The meeting was attended by number of Congress and Khilafat leaders. In this meeting, a programme of non-cooperation towards the government was declared. This included **boycott** of titles conferred by the government, boycott of civil services, army and police, i.e., of all **government jobs**.

### **Non-Cooperation Movement (1920)**

- It was the first mass based political movement under Gandhi.
- The decision to not cooperate in the most peaceful manner with the government and its laws, was endorsed at the annual session of the Congress held at **Nagpur**, in 1920. The Nagpur Session also made changes in the Constitution of the Congress.
- Anti-Rowlatt agitation, Jallianwala Bagh tragedy, Khilafat Movement, general economic distress during and after the war were the reasons for Non-Cooperation Movement.
- The **Tilak Swarajya Fund** started financing the Non-Cooperation Movement. The movement envisaged boycott of school, colleges, law courts, foreign cloth and advocated the use of Charkha.

### **Revolutionary Organisations in India**

Organisation	Year	Founder	Place
Mitra Mela	1899	Savarkar Brothers	Poona
Anushilan Samiti (I)	1902	Gyanendranath Bose	Midnapur
Abhinav Bharat	1904	V.D Savarkar	Poona
Swadesh Bandhav Samiti	1905	Ashwini Kumar Dutt	Barisal
Anushilan Samiti (II)	1906	Barindra Ghosh and Bhupendra Dutt	Dhaka
Bharat Mata Society	1907	Ajit Singh and Amba Prasad	Punjab
Hindustan Republican Association	1924	Jogesh Ch. Chatterji Sachindranath Sanval	Kanpur
Naujawan Sabha	1926	Bhagat Singh	Lahore
Hindustan Socialist Republican Association	1928	Chandrashekhar Azad	Delhi

### **Revolutionary Organisations Formed Outside India**

Organisation	Year	Founder	Place
India House	1905	Shyamaji Krishna Verma	London
Abhinav Bharat	190	V.D Savarkar	London
Indian Independence League	1907	Tarak Nath Das	USA
Ghadar Party	1913	Lala Hardayal, Tarak Nath Das and Sohan Singh Bhakna	San Francisco
Indian Independence League	1914	Lala Hardayal and Birendra	Berlin

- Boycott of the forthcoming visit of Prince of Wales in November, 1921.
- Popularisation of **Charkha** and **Khadi** and **Jail Bharo** by Congress volunteers.
- The movement demanded Swaraj or self rule and Redressal of the Punjab wrongs and Khilafat issue.
- Lala Lajpat Rai organised educational Boycott in Punjab.
- C.R Das, C. Rajagopalachari, Saif-ud-din Kitchlew, V.B Patel, Aruna Asaf Ali and Motilal Nehru gave up their legal practice.
- The Congress Session at Allahabad in December, 1921 decided to launch a **Civil Disobedience Movement**. But before it could be launched, the angry peasants (mob) attacked on a police station at **Chauri Chaura** in Gorakhpur district of Uttar Pradesh on 5th February, 1922. This changed the whole situation and Gandhiji was compelled to withdraw the Non-Cooperation Movement.

### **Spread of Non-Cooperation Movement**

- United Province became a strong base for the Non-Cooperation Movement.
- Agrarian-riots under the leadership of **Baba Ramchandra, Eka Movement** under **Madari Pasi**.
- In Punjab **Akali Movement** for reform and control of Gurudwaras.
- In Andhra Pradesh, the Non-Cooperation Movement was a great success. **Alluri Sitaram Raju** organised the tribals in Andhra and combined their demands with those of the Non-Cooperation Movement.

### **The Swarajists**

- Major developments in Indian politics occurred during 1922-28. Differences

arose among leaders after the withdrawal of the Non-Cooperation Movement. One school of thought headed by **C.R Das** and **Motilal Nehru** advocated that nationalists should end the boycott of legislative council, enter them, obstruct their working according to official plans, expose their weaknesses, transform them into arenas of political struggle and thus use them to arouse public enthusiasm. They were 'pro-changers'.

- Sardar Vallabhbhai Patel, Dr Ansari, Babu Rajendra Prasad and others opposed council entry. They were known as 'no changers'.
- In December, 1922, C.R Das and Motilal Nehru formed Congress-Khilafat Swarajya Party, with C.R Das as President and Motilal Nehru as Secretary. It worked within the Congress.
- In the 1923 elections, the Swarajists won 42 seats out of the 101 elected seats in the Central Legislative Assembly. With the cooperation of other Indian group, they repeatedly out-voted the government in the Central Assembly and in several of the provincial councils.
- Swarajists were split by Communalism. The responsivists offered cooperation to the government to safeguard the Hindu interests. Madan Mohan Malaviya and Lala Lajpat Rai founded the **Independent Congress Party**, later in 1933. It was recognised as Congress Nationalist Party.

#### **Simon Commission (1927)**

- In 1927, the British Government appointed the **Indian Statutory Commission**, known popularly by its chairman Simon, to go into the question of further Constitutional Reform.
- The Committee had to review the working of the dyarchy system, introduced by Montague Chelmsford Reform of 1919 and to report to what extent a representative government can be introduced in India.
- All the members of the commission were white.
- The Indians protested, against the Simon Commission, because of the exclusion of Indians from the

Commission and in the fear that the foreigners would discuss and decide upon India's fitness for self government

- The National Congress decided to boycott the commission in its **Madras Session** in 1927, presided over by Dr. Ansari.
- The Muslim League and **Hindu Mahasabha** decided to support the Congress.
- The Commission's arrival in India led to a powerful protest. On 3rd February, 1928, the Commission was greeted with Hartals and black flag demonstrations, under the slogan 'Simon Go Back'.
- The government used brutal suppression and police attacks to break the popular opposition.
- At Lahore, Lala Lajpat Rai was severely beaten in a Lathi charge and he succumbed to his injuries on 17th November, 1929.

#### **Nehru Report (1928)**

- All important Indian leaders and parties tried to meet the challenge of the Simon Commission by getting together and trying to evolve an alternative scheme of Constitutional Reforms. Nehru report was tabled in 1928 by **Motilal Nehru**.
- It remains memorable as the first major Indian effort to draft a constitutional framework for whole India with lists of central and provincial subjects and Fundamental Rights.
- However, the recommendations evoked a debate concerning the goal of India-Dominion status or Complete independence.
- Other members of committee—Tej Bahadur Sapru, Ali Imam, M.S Aney, Mangal Singh, Sohaib Qureshi, G.R Pradhan and S.C Bose.

#### **Outcome of the Nehru Report**

- It demanded responsible government both at the centre and in the provinces. But, it advocated dominion status, not complete independence.
- It demanded Universal Suffrage. If rejected separate communal electorate. It proposed Muslim reservation in the centre and provinces, where they were in minority.
- The report recommended equal rights for women, freedom to form unions and

disassociation of the state from religion in any form.

- It demanded for reorganisation of the North-West provinces on linguistic basis.

### **Jinnah's 14 points (9th March, 1929)**

- Jinnah, the leader of Muslim League did not accept the Nehru Report and drew up a list of fourteen demands, which became famous as *14 points of Jinnah*.

### **Lahore Session (1929)**

- This session was presided by Jawaharlal Nehru. Gandhi came back to active politics by that time.
- Draw in talks broke down on the issue of dominion status, which the British were reluctant to give.
- This session passed a resolution of Poorna Swaraj (Complete independence) as its ultimate goal.
- On 31st December, 1929 the newly adopted tricolour, was hoisted and 26th January, 1930 was fixed as the **First independence day**.
- The Congress Session also announced a Civil Disobedience Movement under the leadership of Mahatma Gandhi.
- Congress decided to boycott the first Round Table Conference.

### **Civil Disobedience Movement (1930)**

- Before starting the Civil Disobedience Movement, Gandhiji placed an **Eleven point ultimatum** before Irwin for administrative reforms and stated that if Lord Irwin accepted them, then there will be no agitation.
- The Civil Disobedience Movement was started by Gandhi on 12th March, 1930 with his famous Dandi March. Together with 78 chosen followers, Gandhi walked nearly 375 km from Sabarmati Ashram to Dandi, a village on the Gujarat sea-coast.
- Salt production had geographical limitations. So, in other parts of the country, the movement included- picketing of liquor shops and auctions, no revenue campaign in Bardoli, defiance of forest laws in Maharashtra, Karnataka and the central provinces, refusal of *chaukidari* tax in Eastern India, *prabhat pheris*-singing of National Songs.
- The notable feature of the movement was a wide participation of women.

### **Spread of Civil Disobedience Movement**

- **Peshawar** Under the leadership of Khan Abdul Gaffar Khan popularly known as the Frontier Gandhi, the Pathans organised the society of **Khudai Khidmatgars** (servants of God) known popularly as **Red Shirts**. They were pledged to non-violence and freedom struggle. Two platoons of Garhwali soldiers refused to open fire on non-violent mass demonstrations.
- **North-East India:** Manipur took a brave part in it and Nagaland produced a brave heroine. **Rani Gaidilie**, who at the age of 13 responded to the call of Gandhi. The young Rani was captured in 1932 and sentenced to life imprisonment. She was released only after the independence of India. Chittagong was Armoury was raided by Surya Sen in 1930.
- **Darshana:** It was led by Sarojini Naidu. Imam Saheb and Maniklal Gandhi.
- In Madras, **Rajagopaiachari** led a march from Trichionopoly to Vedaranyam along the Coromandal coast. In Kerala, K. Kelappan marched from Calicut to Payannur.
- The government, adopted ruthless repression, lathi charges and firing on unarmed crowd of men and women. Over 90000 Satyagrahis including Gandhiji and other Congress leaders were imprisoned. **Congress was declared illegal**. Meanwhile, the British Government summoned the **First Round Table Conference** in London, in 1930, to discuss the Simon Commission report. But, the Indian National Congress boycotted the conference and its proceedings proved abortive.

### **First Round Table Conference (12th November, 1930)**

- Congress boycotted the conference.
- Muslim League was represented by Muhammad Ali, Agha Khan, Fazlul Haq, M.A Jinnah and Hindu Mahasabha by Moonje and Jayakar.
- Tej Bahadur Sapru, Chintamani and Srinivas Shastri (Liberals) appeared.
- Princes of Hyderabad, Mysore attended it. No result came out of the conference.
- The government now made attempts to negotiate an agreement with the

- Congress, so at it could attend the Round Table Conference.
- Moderate statesman Jaikar, Sapru and Shrinivas Shastri initiated efforts to break the ice between Gandhiji and the government. The negotiation between Irwin and Gandhi in 5th March, 1931 came to be known **Gandhi-Irwin Pact** or known **Delhi Pact**.

### **Gandhi-Irwin Pact**

- ❖ Under this pact, the government agreed to release all those political prisoners, who had remained non-violent. The Right to make salt for consumption was agreed to.
- ❖ The Congress was to suspend Civil Disobedience Movement and take part in Second Round Table Conference.

### **Karachi Session (1931)**

- It endorsed the Gandhi-Irwin Pact. This Session is also memorable for its resolution on Fundamental Right and National Economic Programme, with the efforts of Jawaharlal Nehru and Subhash Chandra Bose.
- Six days before this session, Bhagat Singh, Sukhdev, Rajguru were executed.

### **Second Round Table Conference**

- Gandhiji went to England in September, 1931, to attend the Second Round Table Conference. But the British Government refused to concede the basic nationalist demand for freedom on the basis of the immediate grant of dominion status with complete control over defence, external affairs and finance.
- The Congress officially suspended the movement in 1933 and withdrew it in 1934. Gandhiji resigned from active politics.

### **Poona Pact (Communal Award)**

- McDonald announced the proposal on minority representation, known as the **Communal Award in 1932**. Under this the depressed classes (Muslims, Sikhs, Indian Christians, Anglo Indians, Women and Backward Classes) were to be considered as a minority, would be entitled to the right of separate electorate. Gandhi reacted strongly to the proposal. He considered the depressed class as the integral part of Hindu society.
- He thought that there was no need to protect the depressed classes through representation, rather the need was to eradicate untouchability.

- Gandhi restored to fast unto death in Yervada Jail against this separate electorate for depressed class, which Ambedkar was insisting on. This resulted into the Poona-Pact between Gandhi and Ambedkar on 25th September, 1932.
- 147 seats were to be allotted to the depressed classes in the provincial legislature as against 71 provided by the Communal Award. The pact also called for adequate representation of depressed classes in civil services.
- Gandhiji coined the word *Harijan* for depressed classes and their upliftment became his prime concern. All India Anti Untouchability League was started in September, 1932. On 8th May, 1933 Gandhiji decided to begin a 21 day fast for self purification for the *Harijan* cause.
- He started the Individual Civil Disobedience on 1st August, 1933.

### **Impacts of Civil Disobedience Movement**

- The Congress swept polls in most provinces in 1937. The left parties emerged as an alternative in politics.
- Some Congress activists formed Socialist group.
- Nehru and Subhash Bose emerged as leaders.

### **Third Round Table Conference**

- Held in London in 1932.
- The Congress did not participate.
- The discussion led to Government of India Act, 1935.

### **Government of India Act, 1935**

- The discussions of the Third Round Table Conference and Simon Commission report eventually led to the passing of the Government of India Act of 1935. The act provided for the establishment of an **All India Federation** and a new system of government for the Provinces on the basis of provincial autonomy.
- It abolished the Council of India, established by the Government of India Act, 1858.
- The act provided for a Federal Court and a Federal Bank.
- The Congress rejected the 1935 Act and demanded the convening of a constitutional assembly elected on the basis of adult franchise to frame a Constitution for independent India.

### **Second World War**

- Lord Linlithgow declared India to be at war without the prior assent of the **Central Legislature**. The Congress Ministry resigned in the wake of the war.
- Congress agreed to support Britain only in return of independence being granted. The viceroy could promise this only after the war. In October-November 1939, the Congress Ministries resigned in protest. The Muslim League observed this as the **Deliverence Day** (22nd December, 1939). The Satyagraha was kept limited so as not to embarrass Britain's war effort by a mass upheaval in India.
- The viceroy refused to accept preconditions set by the Congress. (Constituent Assembly for establishment of Responsible Government at the Centre). But, the British Government desperately wanted the active cooperation of Indians in the war effort. To secure this cooperation, it sent to India in March, 1942, a mission headed by a Cabinet Minister **Sir Stafford Cripps** and before that the August Offer.

### **August Offer (1940)**

The **Viceroy Linlithgow** put forward a proposal that included-

- Dominion status in the unspecified future.
- A post war body to enact Constitution.
- Expansion of Governor-General council with representation of the minorities.
- Establishment of a War Advisory Council
- Congress rejected this offer as there was no suggestion for a National Government Muslim League accepted it.

### **Individual Satyagraha**

- Congress rejected the August offer because Congress was convinced that the British would not modify their policy in India. Gandhi decided to start the Individual Satyagraha.
- **Vinoba Bhave** was the first to offer individual Satyagraha, by 15th May, 1941 and more than 250000 Satyagrahis had been jailed.
- *Delhi Chalo Movement* began.

### **Cripps Mission, 1942**

- Sir Stafford Cripps declared that the aim of British Policy in India was "the

earliest possible realisation of self-government in India". The British Government's refusal of accepting immediately the Congress demand was the cause of failure of the mission.

### **Constitutional Proposal of the Cabinet Mission**

- (a) Dominion status to be granted after the war.
- (b) Constitution making body to be elected from provincial assemblies and nominated by the rulers in case of princely states.
- (c) Individual princes could sign a separate agreement with the British.
- (d) British would however, control the defence for war period.

The British Government undertook to accept and implement the Constitution in two conditions:

- Any province(s) unwilling to accept the Constitution could form a separate union with separate Constitution.
- The new Constitution making body and the British Government would negotiate a treaty to sort out matters arising out of transfer of power to Indian hands.
- Gandhi termed this proposal as a **post dated cheque in a crashing bank**.
- Though Cripps proposal failed it provided legitimacy to the demand for Pakistan by accomodating it in the provision for provincial autonomy.

### **Quit India Movement, 1942**

- The All India Congress Committee met at **Bombay** on 8th August, 1942. It passed the famous **Quit India** resolution and proposed to start off a non-violent mass struggle under **Gandhi's leadership**.
- It is also called Vardha proposal and leaderless revolt.
- Gandhi told the British to quit and leave India in God's hand. His message was **Do or Die**.
- Repressive policy of the government and indiscriminate arrest of the leaders provoked people to violence.
- Nehru was lodged in **Almora jail**, Maulana Azad in **Bankura** and Gandhi was kept in **Agha Khan's palace**, Poona. In many areas, government lost control and the people established *Swaraj*. Parallel governments were established.
- In Satara, Pratisarkar was set up under Nana Patil and in Baliya under

Chittu Pande. Others were in Talcher and Bihar. In Bengal, Tamluk Jatiya Sarkar functioned in Midnapore.

- Underground revolutionary activity also started by **Jaiprakash Narain** and **Ramanandan Mishra** escaped from Hazaribagh Jail and organised an underground movement.
- In Bombay, the socialist leaders continued their underground activities under leaders like **Aruna Asaf Ali** Congress radio was established with **Usha Mehta** as its announcer and Rammanohar Lohia in Bihar.
- School and college students and women actively participated, workers went on strikes. There were no communal clashes during the movement.
- The merchant community and capitalist did not participate. Muslim League kept aloof and the Hindu Mahasabha condemned the movement. Communist party did not support the movement. Rajagopalachari also did not participate.

### **Demand for Pakistan**

- In 1930, Md. Iqbal for the first time suggested that the Frontier Province, Sindh, Baluchistan and Kashmir be made the Muslim state within the federation.
- Chaudhary Rehmat Ali coined the term **Pakistan'**.
- The fear of Muslims to be subjugated by Hindus in free India was realised by Jinnah and he demanded for the creation of Pakistan.
- **Pakistan Resolution** Muslim League first passed the proposal of Separate Pakistan in its Lahore Session in 1940 (called Jinnah's Two-Nation theory). It was drafted by Sikandar Hayat Khan, moved by Fazlul Haq and seconded by Khaliquzzaman. It rejected the federal scheme envisaged in the Government of India Act, 1935. In December 1943, the Karachi Session of the Muslim League adopted the slogan -'Divide and Quit'.

**Gandhiji's Fast  
(10th February-7th March, 1943)**

Gandhiji undertook a 21 day fast for condemning the violence of the people during the Quit India Movement.

### **Rajagopalachari Formula (1944)**

- Also known as Rajaji formula (1944), Rajagopalachari proposed that a commission could be appointed for demarcating district in the North-West and East, where Muslims were in absolute majority. Plebiscite would be held on the basis of adult suffrage, that would ultimately decide the issue of separation from Hindustan.
- If majority decides in favour of forming a separate sovereign state then such could be accepted.
- Jinnah objected this as he wanted Congress to accept two-nation theory and wanted only Muslims of the North-West and East to vote in the plebiscite.
- Desai-Liaqat Pact reached no settlement between the league and Congress.

### **Shimla Conference or Wavell Plan (1945)**

- Proposed by Lord Wavell.
- Suggested to set up a new executive council with only Indian members. The viceroy and commander in chief would be the only non-Indian members of the council.
- It would work under the existing Constitution. But the door was open for discussion of new Constitution.
- Hindus and Muslims would have equal representation. Jinnah demanded the Muslim League to have absolute choice in choosing the Muslim members, so he rejected the plan.

### **The Indian National Army**

- The idea of Indian National Army (INA) was first conceived in Malaya by **Mohan Singh**, an Indian officer of the British Indian Army.
- The Japanese handed over the Indian prisoners of war to Mohan Singh, who tried to recruit them into an Indian National Army. By the end of 1942, 40000 men were ready to join the INA. The outbreak of the Quit India Movement gave a fillip to the INA.
- In March, 1942, a conference of India was held in Tokyo and **Indian Independence League** was formed. At **Bangkok Conference**, Ras Bihari Bose was elected as President of the league.
- Subhash Bose escaped to Berlin in 1941 and set-up **Indian League** there.

- In 1943, he arrived at Singapore. Earlier, he had left the Congress after having differences with Gandhi and formed the **Forward Bloc** in 1939.
- In Singapore, he was assisted by Ras Bihari Bose. In October, 1943, he set up a provisional Indian Government with headquarters at **Rangoon** and **Singapore**.

### INA Trials

- The INA commanders **P.K Sehgal**, **Shah Nawaz** and **Gurbaksh Dhillon** were put on trial at the Red Fort.
- Defence of INA prisoners in the court was organised by Bhulabhai Desai, Tej Bahadur Sapru, Kailash Nath Katju, Nehru and Asaf Ali.
- Muslim League also joined the country wide protest. 12th November, 1945 was celebrated as INA Day.

### The Cabinet Mission

- The Attlee Government announced in February 1946, the decision to send a high powered mission of three British Cabinet members (**Pethick Lawrence**, secretary of state for India, **Stafford Cripps**, President of the Board of Trade and **A.V Alexander**, first Lord of Admiralty) to India to find out ways and means for a negotiated and peaceful transfer of power to India.
- The British bid for a united and friendly India and they rejected the demand for a full-fledged Pakistan.
- The Congress demanded that power should be transferred to one centre and that minorities demands be worked out in a framework ranging from autonomy to Muslim-majority province to self determination or recession. The plan failed on the issue of the nature of grouping. Congress wanted the grouping to be optional till the formation of Constituent Assembly, but Jinnah was in the favour of compulsory grouping.

### Jinnah's Direct Action Resolution

- He was alarmed by the election results of the Constituent Assembly (Congress won 209 of the total 273 seats) and was afraid of being totally eclipsed in the Constituent Assembly.
- On 29th July 1946, Jinnah withdrew his earlier acceptance to the plan and fixed 16th August, 1946 as **Direct Action Day**. Calcutta, Noakhali and Garmukteshwar were the storm centres. Jinnah celebrated Pakistan Day on 27th March, 1947.

### Interim Government (1946)

- Interim Government headed by Jawaharlal Nehru was sworn in on 2nd September, 1946. Muslim League refused to join initially Wavell persuaded the league to join in October, 1946. The Constituent Assembly begins its session in 9th December, 1946 and Dr Rajendra Prasad was elected its President, but, the league did not attend. Liaqat Ali Khan of Muslim League was made the Finance Minister.

### Attlee's Statement 20th February, 1947

- A deadline of 30th June, 1948 was fixed for transfer of power, even if the Indian politicians had not agreed by that time on the Constitution.
- British power and obligations *vis-a-vis* the princely states would lapse with transfer of power but these would not be given to any successor government.
- **Mountbatten** was to replace Wavell as the Viceroy.
- Partition of the country was implicit in the provision that if the Constituent Assembly was not fully representative, than power would be transferred to more than one Central Governments.

### Mountbatten Plan (3rd June, 1947)

- As Viceroy, Mountbatten proved more decisive and quick in taking decisions than his predecessors.
- His task was to explore the option of unity or division till October, 1947 and then advise the British Government the form of transfer of power.
- **3rd June Plan** In case of partition, two dominions and two Constituent Assemblies would be created. The plan declared that power would be handed over by 15th August, 1947.
- The plan was put in effect without the slightest delay.
- The Legislative Assemblies of Punjab and Bengal decided in favour of partition of these two provinces. Thus, East Bengal and West Punjab joined Pakistan. West Bengal and East Punjab remained with India. Referendum Sylhet resulted in the incorporation of that district in East Bengal.
- The referendum in NWFP decided in favour of Pakistan.
- Princely states were given the option to join either of the two dominions or remain independent.

- Boundary Commission was to be set up if partition was effected.
- Mountbatten's formula was to divide India, but retain maximum unity.
- Punjab and Bengal Assemblies would meet in two groups, Hindus and Muslims, to vote for partition.

### **Indian Independence Act, 1947**

- On 18th July, 1947, British Parliament ratified the Mountbatten Plan as the **Independence of India Act, 1947**.
- The act provided for the creation of two independent dominions of India and Pakistan. Each dominion was to have a Governor-General to be responsible for effective operation of the act.
- Sovereignty of British power was to be abolished.

### **Independence of India**

- On 15th August, 1947, India got independence. Jinnah became the first Governor-General of Pakistan. India requested Mountbatten to continue as the Governor-General of India.
- Assembly and Councils of the states were to be automatically dissolved.
- For the transitional period that is till

a new Constitution was adopted by each dominion, the government of the two dominions were to be carried on in accordance with the Government of India Act, 1935.

### **Integration of States**

- **Vallabhbhai Patel**, played the most important role in the integration of states. Except Kashmir, Hyderabad and Junagadh, all states signed an instrument of accession with Indian Government. On October 1947, the Pakistani troops invaded Kashmir and in the crisis, the Maharaj of Kashmir acceded to the Indian Union.
- Through a referendum in the state of Junagadh in February 1948, Junagadh was merged in the Indian Union. The Nawab left for Pakistan.
- Due to the pressure of internal anarchy and military action in the state, the Nizam of Hyderabad was forced to join the Indian Union.
- **Integration of French Colonies** Pondicherry, Chandranagar, Mahe Karaikal and Yaman were integrated by the end of 1954).
- **Integration of Portuguese Colonies** Dadra and Nagar Haveli (1954); Goa; Daman and Diu (1961).

### **Books/Journals and Newspapers**

Author/Editor	Work	Author/Editor	Work
Aurobindo Ghosh	❖ Karmayogi ❖ New lamp for old ❖ Bhawani Mandir	Barindra Kr. Ghosh and Bhupendra Dutta	❖ Yugantar
Bankim Ch. Chatterjee	❖ Anand Math ❖ Durgesh Nandini	Deenbandhu Mitra	❖ Neel Darpan
Dr. B.R. Ambedkar	❖ Mook Nayak ❖ Bahishkrit Bharat	Harish Chandra Mukherjee	❖ Hindu Patriot
Dadabhai Naoroji	❖ Rast Goftar ❖ Voice of India ❖ Poverty and Un-British Rule in India	Henry Lui Vivian Derozio	❖ India Gazette
Dayanand Saraswati	❖ Veda Bhasya Bhumika ❖ Satyarth Prakash	Ishwar Ch. Vidyasagar	❖ Som Prakash
Gopal Krishna Gokhale	❖ Nation ❖ Sudharak	James Augustus Hicky (1780)	❖ Bengal Gazette
Jawaharlal Nehru	❖ Discovery of India ❖ National Herald ❖ Wither India ❖ Soviet Asia	Jyotiba Rao Phule	❖ Ghulam Giri
M. K. Gandhi	❖ Navjeevan ❖ Young India and Harijan ❖ Indian opinion	K.K. Mitra	❖ Sanjivani
Raja Ram Mohan Roy	❖ Sambad Kaumudi ❖ Mirat-ul-Akhbar ❖ Barga-Dutta	Madam Bhikaji Cama	❖ Bande Mataram
Vivekananda	❖ Prabhudha Bharat ❖ Udbodhna ❖ Prachya aur Paschataya	Maulana Abul Kalam Azad	❖ Al-Hilal
B. G. Tilak	❖ Kesari and Maratha	Subhash Ch. Bose	❖ Indian Struggle

# INDIAN POLITY

## At a Glance

### Central Executive

#### **PRESIDENT**

- Executive Head of the State. First citizen of India.
- The Executive powers vested in the President are to be exercised on the advice of the Council of Ministers responsible to the Parliament. The 42<sup>nd</sup> Amendment to the Constitution has made it obligatory on the part of the President to accept the advice of the Council of Ministers.

#### **Qualification**

- (a) Must be a citizen of India.
- (b) Completed 35 years in age.
- (c) Eligible to be a member of Lok Sabha.
- (d) Must not hold any Government post.  
Exceptions :
  - ❖ President and Vice-President
  - ❖ Governor of any State
  - ❖ Minister of Union or State.

#### **Election**

- Article 54 and 55 lay down the procedure for electing the President.
- Indirectly elected through 'Electoral College' consisting of elected members of both the Houses of Parliament & elected members of the Legislative Assemblies of the States. (No nominated members). According to the 70<sup>th</sup> Amendment Act, 1992, the expression 'States' includes the National Capital Territory of Delhi and the Union Territory of Pondicherry. Members of the Legislative Councils have no right to vote in the President Election.
- The total voting strength of the Parliament is equal to the total voting strength of all state assemblies together.
- There is uniformity in the representation of different States at the President's election according to the population and the total number

of elected members of the Legislative Assembly of each State. The formula adopted to secure uniformity among the States is as follows :

$$\text{Value of Vote of an MLA} = \frac{\text{State population}}{1,000 \times \text{Total number of elected MLAs}}$$

- On the basis of the above formula, the value of the vote of an MLA from UP has the highest value and that from Sikkim the lowest.
- The formula adopted to secure uniformity between all the States on one hand and the Parliament on the other is as follows:

$$\text{Value of Vote of an MP} = \frac{\text{Total value of votes of MLAs of all States}}{\text{Total number of elected MPs (LS + RS)}}$$

- The 1971 census is currently under consideration.
- The election is held through the system of proportional representation by means of the single — transferable vote by secret ballot. The candidate who gets 50% of votes is considered elected
- It was pointed out in the Constituent Assembly that proportional representation is meaningless where there is only one candidate to be elected. Moreover, "the single transferable vote does not exist here because nobody has a single vote; everybody has plural voted". Answering these doubts, Dr. Ambedkar explained that "We have provided one single proportional representation in which every candidate at the bottom will be eliminated until we reach one man who gets what is called a quota". This method, he said, was adopted so that the minorities will have some hand and some play in the election of the President. He refused to explain how it would work in case there is only one man to be elected. Constitutional

analysts aver that it is really what is known as the alternative vote.

$$\text{Quota} = \frac{\text{Number of Votes Polled}}{2} + 1$$

- By this method, each voter is entitled to cast as many votes as there are candidates in the field indicating the order of his preferences. If in the first counting no candidate obtains the requisite quota, the process of transfer of votes is eliminated and his second preferences are added to the first preference votes of other candidates. This process continues until a candidate with the requisite quota emerges. Thus the candidate who receives the largest number of votes on the first count is not necessarily the final choice. This procedure ensures that the President-elect has an absolute majority behind him.
- Security deposit – 15,000/-
- Supreme Court inquires all disputes regarding President's election.

**Note :**

- ❖ In the history of Presidential elections, V.V. Giri is the only person who won the election of the President as an independent candidate in 1969.
- ❖ In July 1977, Neelam Sanjiva Reddy was elected unopposed as no one else filed nomination for the post of the President.
- Takes OATH in presence of Chief Justice of India, or in his absence, senior most judged Supreme Court.

**TERM & EMOLUMENTS**

- 5 year term.
- Article 57 says that there is no upper limit on the no. of times a person can become President.
- Can give resignation to Vice President before full-term.
- Present Salary — 1,50,000/- month (including allowances & emoluments).  
The pension is 50% of the salary.

**IMPEACHMENT (ARTICLE 61)**

- Quasi-judicial procedure.
- Can be impeached only on the ground of violation of Constitution.
- The impeachment procedure can be initiated in either House of the Parliament. The charge must come in the form of a proposal which must be signed by at least one-fourth of the total membership of that House. Before the

resolution could be passed, a fourteen days notice must be given to the President. If, after the notice, the House passes the resolution by a majority of not less than 2/3rd membership of the House the matter will be referred to the other House.

- After the charges are framed by one house, the other House investigates them. At this time President has the right to defend passes the resolution by not less than 2/3rd majority of that House, the President stands impeached from his office from the date on which the motion is so passed.

PRESIDENTS OF INDIA		
Tenure		
Name	From	To
Dr. Rajendra Prasad	26.01.1950	13.05.1962
Dr. S. Radhakrishnan	13.05.1962	13.05.1967
Dr. Zakir Hussain	13.05.1967	03.05.1969
V.V. Giri (Vice-President) #	03.05.1969	20.07.1969
Justice M. Hidayatullah*	20.07.1969	24.08.1969
V.V. Giri	24.08.1969	24.08.1974
F. Ali Ahmed	24.08.1974	11.02.1977
B.D. Jatti#	11.02.1977	25.07.1977
N. Sanjiva Reddy	25.07.1977	25.07.1982
Gaini Jail Singh	25.07.1982	25.07.1987
R. Venkataraman	25.07.1987	25.07.1992
Dr. S.D. Sharma	25.07.1992	25.07.1997
K.R. Narayanan	25.07.1997	25.07.2002
Dr. A.P.J. Abdul Kalam	25.07.2002	25.07.2007
Mrs. Pratibha Patil	25.07.2007	25.07.2012
Pranab Mukherji	25.07.2012	25.07.2017
Ram Nath Kovind	25.07.2017	Incumbent (Term ends on 25.07.2022)

#Acting; \*First Chief-Justice to be appointed President

**VACANCY**

- In case the office falls vacant due to death, resignation or removal, the Vice-President acts as President. If he is not available then Chief Justice, if not then senior-most judge of Supreme Court.
- The election is to be held within 6 months of the vacancy.

**Note :**

- ❖ Only once in the History of India, Justice M. Hidayatullah, Chief Justice of Supreme Court, discharged the duties of the President in 1969.
- ❖ Justice Hidayatullah is not only person to perform the functions of the President two times in two different capacities, the first time in 1969 being the Chief Justice of the Supreme Court and the second time being the Vice-President of India in 1982.

### **POWERS**

#### **Executive Powers**

- Appoints Prime Minister, Ministers, Chairman & members of UPSC, Comptroller and Auditor General, Attorney General, Chief Election Commissioner and other members of Election Commission, Governors, Members of Finance Commission, Ambassadors, etc.
- He directly administers the Union Territories through the Lt. Governor, Commissioner or Administrator.

#### **Legislative Powers**

- Can summon & prorogue the sessions of the 2 houses & can dissolve Lok Sabha.
- Can address both the houses jointly/ separately.
- Addresses the first session after general elections and at the commencement of the first session of each year.
- Can send messages to both the Houses, whether with respect to a Bill pending in the Parliament or otherwise.
- Can appoint any member of the Lok Sabha to preside over its proceedings when both the offices of Speaker and the Deputy Speaker fall vacant simultaneously (same way in Rajya Sabha also).
- Nominates 12 members to Rajya Sabha.
- Decides on the questions as to the qualifications of the MPs, in consultation with the Election Commission.
- His prior recommendation or permission is needed to introduce certain types of Bills in the Parliament. E.G., a Bill for the formation of new States or alteration of boundaries of a State, a Money Bill, etc.
- When a Bill is sent to the President after it has been passed by the Parliament, he can:
  1. Give his assent to the Bill, or
  2. Withhold his assent to the Bill, or
  3. Return the Bill (if it is not a Money Bill or a Constitutional Amendment Bill) for reconsideration of the Parliament, although only once.
- President has the power to veto with respect to the Bills passed by the Parliament. He enjoys three types of veto powers :

1. **Absolute Veto** : Withholding the assent to the Bill. Normally, it is exercised only in the case of private member's Bill. In the case of Government Bill, a situation may however be imagined where, after the passage of a Bill and before it is assented to by the President, the ministry resigns and new council of ministers advises the President to use his veto power against the Bill.

2. **Suspense Veto** : It is exercised when instead of refusing his assent outrightly to a Bill, the President returns the Bill or part of it for the reconsideration and the Parliament makes it obligatory on him to give his assent to it. In this case, the veto power is merely of suspensive nature.

3. **Pocket Veto** : Since the Constitution does not provide any time limit within which the President is to declare his assent or refusal, the President could exercise this veto by not taking any action for an indefinite time; but if the ministry has a strong backing in Parliament, it would not be possible for him to do so. Pocket Veto was used in 1986 by the then President Giani Zail Singh in the Postal Bill.

- Can enact laws through ordinance when the Parliament is in recess (Article 123). These ordinances must be passed by Parliament within 6 weeks of reassembly.
- Lays the report of the Comptroller and Auditor General, UPSC, the Finance Commission, and others, before the Parliament

#### **Financial Powers**

- All money bills can originate in Parliament only on recommendation of President.
- No Demand for a grant can be made except on his recommendations.
- He can make advances out of the Contingency Fund of India to meet any unforeseen expenditure.
- Appoints Finance Commission (after every 5 years) that recommends distribution of taxes between Union & State govts.

#### **Judicial Powers**

- The President's pardoning power comprises a group of analogous powers.

1. **Pardon** : It rescinds both the sentence and the conviction and completely absolved the offender from all punishments and disqualifications.
2. **Rerieve**: It means a stay of execution of sentence pending a proceeding for pardon or commutations.
3. **Remission**: The power of remission reduces the amount of sentence without changing its character. E.g., a sentence of imprisonment for one year may be remitted for six months.
4. **Respite**: The power to grant respite means awarding a lesser sentence instead of the prescribed prescribed penalty in view of some special facts. E.g., pregnancy of the woman offender.
5. **Commutation**: It merely substitutes one form of the punishment for another of a lighter character — death by transportation, transportation by rigorous imprisonment, rigorous imprisonment by simple imprisonment, and simple imprisonment by fine and so on.

### **Military Powers**

- He is the Supreme Commander of the Defence Forces of India.
- Appoints Chiefs of Army, Navy & Air Force.
- Declares wars & concludes peace subject to the approval of the Parliament.

### **Diplomatic Powers**

- Represents country in international forums.
- Sends ambassadors & receives diplomats.
- International treaties & agreements are concluded on his behalf.

### **EMERGENCY POWERS**

#### **1. National Emergency (Article 352)**

- On the grounds of security threats to India by war, external aggression or armed rebellion.
- The President can proclaim this emergency only after receiving a written recommendation from the Cabinet.
- The proclamation of the emergency must be approved by the Parliament within one month. If approved, it will continue for six months.
- It can be extended for an indefinite period with an approval of the Parliament for every six months.
- It has been proclaimed three times so far – 1962, 1971 and 1975.
- President can suspend the operation of Fundamental Rights (except Articles 20

and 21) during this type of emergency.

- Article 19 can only be suspended in case of external emergency and not in the case of internal emergency.
- The Parliament can make laws on items mentioned in the State list during the period of National Emergency.

#### **2. State Emergency (Article 356)**

- Emergency due to failure of constitutional machinery in State. The President's rule can be imposed when the President is satisfied, on the basis of either a report of the State Governor or otherwise, that the governance of the State cannot be carried on in accordance with the provisions of the constitution.
- The proclamation of the President's rule should be approved by the Parliament within two months. If approved, it remains in force for six months from the date of proclamation of the State Emergency.
- It can be extended for a maximum period of three years with the approval of the Parliament every six months.
- The State Governor, on behalf of the President, carries on the State administration with the help of the advisors appointed by the President or the Chief Secretary of the State.
- The President's rule has been imposed more than 100 times.

#### **3. Financial Emergency (Article 360)**

- The President can proclaim Financial Emergency if he is satisfied that the financial stability or credit of India or any part thereof is threatened.
- Such a proclamation must be approved by the Parliament within two months.
- During the Emergency, the President can issue directions for the reduction of salaries and allowances of all or any class of persons serving under the State.
- Financial Emergency has not been declared so far.

### **PRESIDENT VIS-À-VIS COUNCIL OF MINISTERS**

- Before the 42<sup>nd</sup> Amendment Act, 1976, there was no provision in the Constitution which made the advice of the Council of Ministers obligatory on the President. Article 74 simply stated that there shall be a Council of Ministers, with the Prime Minister at the head, to aid and advise the President.
- The 42<sup>nd</sup> Amendment Act made it clear beyond doubt that the President is constitutionally bounded by the advice of the Council of Ministers.

- The 44<sup>th</sup> Amendment Act further stated that the President can send the advice back for reconsideration, but only once.
- Although the Constitution (after 42<sup>nd</sup> and 44<sup>th</sup> Amendment Acts) made it mandatory or obligatory for the President to act on the advice of the Council of Ministers, but even then the practice of Parliamentary governance creates some circumstances when the President has to act as per his own wisdom.
- The situations are :
  - (a) Appointment of the Prime Minister [Article 75(1)] under a situation when no single political party commands clear support of the Lok Sabha.
  - (b) Appointing a Prime Minister in case of vacancy due to sudden death of the incumbent, where there is no acknowledged leader due to inability of the legislative party to do it or in case of absence of a settled seniority among Cabinet Ministers and a name for the Prime Minister is proposed from the outside.
  - (c) Dissolution of Lok Sabha on the advice of the Council of Ministers which has lost the support of the majority members of Lok Sabha or against whom a vote of no-confidence motion may have been passed.
  - (d) Dismissing ministers [Article 75(2)] in case the Council of Ministers has lost the confidence of the House but refuses to resign.

## **VICE PRESIDENT**

- Elected by both the houses (Electoral College) in accordance with the system of proportional representations by means of single transferable vote and the vote being secret. Nominated members also participate in his election.
- The Supreme Court has the final and exclusive jurisdiction for resolving disputes and doubts relating to the election of the Vice President.

### **Qualification**

- (a) Citizen of India
- (b) More than 35 years of age.
- (c) Possess the qualification for membership of Rajya Sabha.
- (d) Not hold any office of profit under union, state or local authority. However, for this purpose, the President, Vice-President, Governor of a State and a Minister of the Union or a State,

are not held to be holding an office of Profit.

- Holds office for 5 years can be re-elected.
- Term can be cut short if he resigns or by a resolution of the Rajya Sabha passed by a majority of all the then members of the Rajya Sabha and agreed to by the Lok Sabha.
- The Vice President is the second highest dignitary of India, next to the President of India. No formal functions are attached to the office of Vice President. He is the ex-officio chairman of Rajya Sabha. Since he is not a member of Rajya Sabha, he has no right to vote.

VICE-PRESIDENTS OF INDIA		
Tenure		
Name	From	To
Dr. Sarvepalli Radhakrishnan	1952	1962
Dr. Zakir Hussain	1962	1967
V.V. Giri	1967	1969
Bal Swaroop Pathak	1969	1974
Dr. M. Jatti	1974	1979
Justice Mohd. Hidayatullah	1979	1984
S. Venkataraman	1984	1987
Dr. Shankar Dayal Sharma	1987	1992
K.R. Narayanan	1992	1997
Krishan Kant	1997	2002
Bhairon Singh Shekhawat	2002	2007
Hamid Ansari	2007	Till date

- Being the Vice President of India, he is not entitled for any salary, but he is entitled to the salary and allowances payable to the Chairman of the Rajya Sabha.
- All Bills, resolution, motion can be taken in Rajya Sabha after his consent.
- Can discharge the function of President if the post falls vacant. (For maximum 6 months). The Vice President takes over the office of the President normally under these conditions :
  - (a) Death of the President;
  - (b) Resignation of the President;
  - (c) Removal of the President;
  - (d) When President owing to absence, illness or any other cause, is unable to perform the functions of his office.
- When he discharges the functions of the President, the Vice President shall not perform the duties of the office of the Chairman of Rajya Sabha and shall not be entitled to receive the salary of the Chairman. During this period, he is entitled for the salary and privileges of the President of India.
- Present salary is Rs. 1,25,000/- per month. The pension is 50% of the salary.

## **PRIME MINISTER**

- Real Executive Authority.

- Gets the same salary as other MPs. [In addition, he gets some other allowances].
- He is the ex-officio Chairman of the Planning Commission, National Development Council, National Integration Council and Inter-state Council.

### **Powers**

- (a) The President convenes and prorogues all sessions of Parliament in consultation with him.
- (b) Can recommend the dissolution of Lok Sabha before expiry.
- (c) Appoints the Council of ministers.
- (d) Allocates portfolios. Can ask a minister to resign & can get him dismissed by President.
- (e) Assists the President in appointment of all high officials.
- (f) Can recommend to the President to declare emergency on grounds of war, external aggression or armed rebellion.
- (g) Advises President about President's Rule in the state or emergency due to financial instability.
- (h) Leader of the House.

<b>PRIME MINISTERS OF INDIA</b>		
<b>Tenure</b>		
<b>Name</b>	<b>From</b>	<b>To</b>
Jawahar Lal Nehru	15.08.1947	27.05.1964
Gulzari Lal Nanda	27.05.1964	09.06.1964
Lal Bahadur Shastri	09.06.1964	11.01.1966
Gulzari Lal Nanda	11.01.1966	24.01.1966
Indira Gandhi	24.01.1966	24.03.1977
Morarji Desai	24.03.1977	28.07.1979
Charan Singh	28.07.1979	14.01.1980
Indira Gandhi	14.01.1980	31.10.1984
Rajiv Gandhi	31.10.1984	01.12.1989
V.P. Singh	01.12.1989	10.11.1990
Chandra Shekhar	10.10.1990	21.06.1991
P.V. Narsimha Rao	21.06.1991	16.05.1996
Atal Bihari Vajpayee	16.05.1996	01.06.1996
H.D. Deve Gowda	01.06.1996	21.04.1997
I.K. Gujral	21.04.1997	19.03.1998
Atal Bihari Vajpayee	19.03.1998	13.10.1999
Atal Bihari Vajpayee	13.10.1999	22.05.2004
Dr. Manmohan Singh	22.05.2004	26.05.2014
Narendra Modi	26.05.2014	Till date

### **COUNCIL OF MINISTERS**

- The President has to act in accordance with the advice of Council of ministers.
- In this, 3 types of ministers are there :
  - (a) **Minister of Cabinet Rank** : Real policy makers. The cabinet meetings are not attended by other ministers.
  - (b) **Minister of State** : Can either hold independent charge or attached to a cabinet minister.

- (c) **Deputy Ministers** : Do not hold separate charge.

- Collectively responsible to the Lok Sabha.
- It is a team & its members sink or swim together. (Article 75). This is called 'Collective Responsibility'. A vote of no confidence against any Minister automatically leads to the resignation of the entire Council (or its dismissal by the President).
- A person can remain a minister without being a member of the either house upto 6 months maximum.
- A Minister who is a member of one House has a right to speak in and take part in the proceedings of the other House—though he has no right to vote in the House which is not a member.

### **□ ATTORNEY GENERAL**

- Highest legal officer of the Union Govt.
- Appointed by the President.
- The person should be qualified to be appointed a judge of the SC.
- He is entitled to audience in all courts of the country & can take part in the proceedings of the Parliament & its committees. However, he is not given the right to vote.
- He is also allowed to take up private practice provided the other party is not the State. Because of this, he is not paid salary but a retainer to be determined by the President.
- In England, the Attorney General is a member of the Cabinet, but in India he is not. It is a political appointment and therefore, whenever there is a change in the party in power, the Attorney General resigns from his post to enable the new Government to appoint a nominee of his choice.
- The Attorney General is assisted by two Solicitors-General and four Additional Solicitors-General.
- The Attorney General gets a retainer equivalent to the salary of a judge of the Supreme Court.

### **Functions**

- Gives advice on all such legal matters which may be referred or assigned to him by the President.
- Appears before the Supreme Court and various High Courts in cases involving the Govt. of India.

[Every state shall have an Advocate-General to advise the govt. on legal matters – Article 165]

## Central Legislature [PARLIAMENT]

- According to Article 79, the Parliament consists of the President, the Council of States (Rajya Sabha) and the House of the People (Lok Sabha). Though the President is not a member of either of the House, he is an integral part of it.

### LOK SABHA

- Maximum strength – 550 + 2 [530 – States/ 20 – Union Territories]
- Present strength of Lok Sabha – 545.
- The Ninety First Amendment, 2001, extended freeze on Lok Sabha and State Assembly seats till 2026.
- The normal tenure of the Lok Sabha is five years, but it may be dissolved earlier by the President. The life of the Lok Sabha can be extended by the Parliament beyond the five year term, when a proclamation of emergency under Article 352 is in force. But the Parliament cannot extend the normal life of the Lok Sabha for more than one year at a time (no limit on the number of times in the Constitution).
- The qualification to become a member is :
  - Citizen of India.
  - Atleast 25 years of age.
  - Mustn't hold any office of profit.
  - No unsound mind/insolvent.
  - Has registered as voter in any Parliamentary constituency.
- A member can be disqualified :
  - If he voluntarily gives up the membership of party.
  - If he over – rules the 'whip'.
  - Absent for 60 days without intimation.
- Members' oath is administered by Pro-Tem Speaker.
- Can resign, by writing to Speaker.
- Presiding officer is Speaker (In his absence Deputy Speaker). The members among themselves elect him.
- The Speaker continues in office even after the dissolution of the Lok Sabha till a newly elected Lok Sabha meets.
- Usually the Speaker, after his election cuts-off all connection with his party & acts in an impartial manner. He does not vote in the first instance, but exercises his casting vote only to remove a deadlock.

- Charges his salary from Consolidated Fund of India.
- Speaker sends his resignation to deputy Speaker.
- The majority of the total membership can remove Speaker after giving 14 days notice. (During this time, he doesn't preside over the meetings). After his removal, continues in office till his successor takes charge.

### RAJYA SABHA

- Maximum Strength – 250  
[Out of these, President nominates 12 amongst persons having special knowledge or practical experience in the fields of literature, science, art and social service].
- Presently, the Parliament, by law, has provided for 233 seats for the States and the Union Territories. The total membership of Rajya Sabha is thus 245.
- All the States and the Union Territories of Delhi and Pondicherry are represented in the Rajya Sabha.
- Representatives of the State are elected by members of state legislative assemblies on the basis of proportional representation through a single transferable vote.  
[States are represented on the basis of their population].
- There are no seats reserved for Scheduled Castes and Scheduled Tribes in Rajya Sabha.
- The qualification to become a member is :
  - Citizen of India.
  - 30 years of age.
  - Be a parliamentary elector in the state in which he is seeking election.
  - Others as prescribed by parliament from time-to-time.

### Special Power of the Rajya Sabha

- A resolution seeking the removal of the Vice-President can originate only in the Rajya Sabha.
- If the Rajya Sabha passes a resolution by a majority of not less than two third of the members present and voting that it is necessary in the national interest that Parliament should make laws with respect of any matter enumerated in the State List, it shall be lawful for Parliament to make law for a period of not more than one year.
- If the Rajya Sabha passes a resolution by a majority of not less than two-third of the members present and voting that it is necessary in the national interest to create one or more All-India services, Parliament by law, provide for such service or services.

### **Quorum, Penalty, Privileges of MPs**

- *Quorum for Either House (According to Article 100(c) is 1/10 of the total no. of members.*
- If a person sits or votes as a member of either House of the Parliament before he has complied with the requirements of Article 99 (Oath), or when he knows that he is not qualified or that he is disqualified for membership thereof, he shall be liable in respect of each day on which he so sits or votes to a penalty of five hundred rupees to be recovered as a debt to the Union.
- A Member of Parliament enjoys immunity from arrest, 40 days before the commencement and 40 days after the prorogation of a session of the House. This immunity is only in Civil cases and does not extend to Criminal proceedings, or the contempt of the Court or preventive detention. Also, a member of the Parliament cannot be compelled to give witness in the case pending in the Court of law when the Parliament is in session.
- Also, an MP enjoys Freedom of speech providing immunity from Court action for anything said in the House. However, the freedom is 'subject to the rules' framed by the House, so that the dignity of the House may be maintained. The Constitution, too, imposes a restriction that the conduct of judges of Supreme Court and High Courts in the discharge of their duties shall not be discussed by Parliament except when considering the removal of a judge.
- For 6 years, as 1/3<sup>rd</sup> Members retire every 2 years.
- Vice-President is the ex-officio chairman of Rajya Sabha. He presides over the proceedings of the Rajya Sabha as long as he does not Act as the President of India during a vacancy in the office of the President of India.
- Also a deputy Chairman is elected from its members.
- In Rajya Sabha any bill can originate, apart from money bill (including budget).

### **JOINT SESSION**

- Can be ordered by President to consider a particular bill in case :
  - (a) A bill passed by one house is rejected

by other.

- (b) The amendments made by the other house are not acceptable to the house where the bill originated.
- (c) In case, a bill remains pending unpassed for more than 6 months.
- Joint session is presided over by the Speaker of Lok Sabha or in his absence by the Deputy Speaker, or in his absence by the Deputy Chairman of the Rajya Sabha or in his absence any other member of the Parliament who is agreed upon by the Houses.
- If the Lok Sabha is dissolved before the President notifies a joint sitting, the Bill lapses and no joint sitting is possible. However, if the President has notified his intention to summon the Houses for joint sitting and then the Lok Sabha is dissolved, the joint sitting takes place notwithstanding the dissolution of the House.
- The deadlock over a Bill is resolved by a majority of the total number of the members of both the Houses present and voting.
- Since the Lok Sabha has larger membership, its will prevails.
- No fresh amendment can be done in Joint session.

### **SESSIONS OF PARLIAMENT**

- At the discretion of the President.
- Gap shouldn't be more than 6 months.
- The Parliament generally meets in three sessions in a year. These are :
  - (a) Budget Session : In Feb. – May, longest.
  - (b) Monsoon Session : July-August.
  - (c) Winter Session : November-December, shortest.

### **PROPAGATION OF HOUSE**

- Means ending the session.
- Pending bills/business does not lapse; they are taken in the next session.

### **THE BUDGET**

- *The Budget is the annual financial statement of the Government. It is presented to the Lok Sabha upon the recommendation of the President. It is presented by the Finance Minister.*
- *It is the statement of the estimated receipts and expenditures of the Government of India for the following Financial Year. It also contains the actual receipts and expenditure of the previous year with a review of the financial position during that period.*
- *After introduction of the Budget, the Lok Sabha discusses the demands for grants (i.e.*

*(proposed expenditure) of various ministries and departments and is approved by it, one by one. All the expenditures approved through various demands for grants and expenses charged on the Consolidated Fund of India, are then presented in the form of a single Bill called the 'Appropriation Bill'. The proposals for taxation to raise revenue are presented in the form of 'Financial Bill'.*

### **DISSOLUTION OF HOUSE**

- Only of Lok Sabha.
- By President on advice of PM.
- Bills pending in Rajya Sabha, passed by Lok Sabha also lapses unless President call a joint sitting of the 2 houses.
- Bills pending in Rajya Sabha, not passed by Lok Sabha don't lapse.

### **CONDUCT OF BUSINESS IN PARLIAMENT**

- **Ordinary Bills** : All bills, except money bills, are introduced in either house. [Speaker of Lok Sabha decides whether the bill is a money bill or not].
- **Money Bills** : It deals with the imposition or abolition of taxes, matters pertaining to borrowing of money by the govt. custody & maintenance of consolidated funds, etc.
- It can originate only in Lok Sabha on the recommendation of the President. The Rajya Sabha can only delay it by 14 days. Its final authority lies with Lok Sabha only.

### **PARLIAMENT'S CONTROL OVER THE FINANCIAL SYSTEM**

- Article 265 states that no tax can be levied or collected except by authority of law. The executive, therefore, cannot impose any tax without the sanction of the Parliament.
- All the revenue and loans raised by the authority of law are paid into the Consolidated Fund of India. Under Article 266 no money can be withdrawn on spent or appropriated from the Consolidated Fund of India without the sanction of the Parliament.
- The Parliament, thus, controls the revenue expenditure and appropriation of Government of India.

### **SPEAKER OF LOK SABHA**

- As soon as a new Lok Sabha is constituted, the President appoints a **Speaker pro-tem**, who is generally the senior most member of the House. (It is a temporary office that ceases to exist after new speaker is elected by the house.)
- **Speaker** is the head of Lok Sabha. He/She is elected from amongst the

members of Lok Sabha. The Speaker of the Lok Sabha conducts the business in the House. A Deputy Speaker is also elected to officiate in the absence of the Speaker.

#### **Facts about Speaker**

- **GV Mavlankar** was the first Speaker of the Lok Sabha (1952-1956).
- **MA Ayyangar** was the first Deputy Speaker (1952-1956).
- **Dr. Balram Jakhar** was the longest serving Speaker (1980-1989).
- **GMC Balyogi** is the first Speaker to die in the office (1998-2002).
- **Meira Kumar** is the first woman speaker of the Lok Sabha (2009-2013).

## **State Legislature – Article 168 – 212**

Chapter III of Part VI of the Constitution is concerned with the State Legislature. It comprises state legislature and executives. Articles 168 to 212 in Part VI of the Constitution deal with the organisation, composition, duration, officers, procedures, privileges, powers and so on of the state legislature.

### **Bicameral and Unicameral States**

Though a uniform pattern of Government is prescribed for the States, it is not so in the matter of the composition of the Legislature. While the Legislature of every State shall consist of the Governor and the State Legislature, in some of the States, the Legislature shall consist of two Houses, namely, the Legislative Assembly and the Legislative Council, while in the rest, there shall be only one House, namely the legislative assembly.

The constitution provides for the abolition of the second chamber in a state where it exists as well as for the creation of such a chamber in a state where there is none at present. If a state Legislature passes a resolution by an absolute majority, together with not less than two-thirds of the members actually present and voting in favour of the creation of the second chamber and if Parliament gives concurrence to such a resolution, the concerned State can have two Houses in the Legislature. Similar is the procedure for the abolition of the Upper houses and the State of Punjab and West Bengal

abolished the second chambers in 1969 and 1970 respectively.

Legislative Council in Tamil Nadu was abolished in 1986. The State Legislature which has only one House is known as the Legislative Assembly (Vidhan Sabha) and in the State which has two houses, the Upper House is known as the Legislative Council (Vidhan Parishad) and the lower House is known as the Legislative Assembly (Vidhan Sabha).

Owing to changes introduced since the inauguration of Constitution, in accordance with the procedure laid down in Art. 169, the States having two Houses are Bihar, Maharashtra, Karnataka, Andhra Pradesh, Telangana and Uttar Pradesh.

### **State Legislature - Legislative Assembly**

The Legislative Assembly is the popularly elected chamber and is the real Centre of power in a State. The maximum strength of an assembly must not exceed 500 or its minimum strength fall below 60. But some of the States have been allowed to have smaller Legislative Assemblies, e.g. Sikkim, Arunachal Pradesh, Goa, etc.

The territorial constituencies demarcation should be done as far as possible, such that the ratio between the population of each constituency and the number of seats allotted to it is the same all over the State. Apart from these general provisions, there are also special provisions with respect to the representation of SC and ST. In case the Governor feels that the Anglo-Indian community is not adequately represented, he can nominate one member of that community to the assembly.

### **State Legislature - Legislative Council**

The Legislative Council of a State Comprises not more than one-third of the total number of members in the Legislative Assembly of the State and in no case less than 40 members. However, in Jammu and Kashmir, the strength is only 36. The system of the composition of the Council as provided for in the Constitution is not final. The final power is given to the Parliament of the Union. But until the Parliament legislates on the subject, it shall be as provided for in the Constitution, which is described below:

#### ***Duration of Legislative Assembly & Legislative Council***

It will be a partly nominated and partly elected body, the election being an indirect one and in accordance with the principle of proportional representation by the single transferable vote. The members being drawn

from various sources, the Council shall have a variegated composition. Broadly speaking 5/6 of the total number of members of the Council shall be indirectly elected and 1/6 will be nominated by governor.

The duration of the Legislative Assembly is five years. The Governor has the power to dissolve the Assembly even before the expiry of its term. The period of five years, may, while a proclamation of emergency is in operation, be extended by the Parliament by law for a period not exceeding one year at a time and not extending in any case beyond a period of six months after proclamation has ceased to operate (Article 172(1)). Unlike the Legislative Assembly, the Legislative Council is not subject to dissolution. It is a permanent body unless abolished by the Legislative Assembly and Parliament by the due procedure. But no person can be a permanent member of the Council as one-third of the members of the Council retire on the expiry of every second year. It amounts to a term of six years for each member. There is no bar on a member getting re-elected on the expiry of his term.

- one-third of the total number of members of the Council would be elected by electorates consisting of members of local bodies like the municipalities and the district boards.
- one-twelfth of the members would be elected by electorates comprising of graduates of the standing of three years dwelling in that particular state.
- one-twelfth of the members would be elected by electorates consisting of teachers who have been in the teaching profession for at least 3 years in educational institutes in that state, which are not lower than secondary schools in the standard.
- one-third would be elected by members of the Legislative Assembly from amongst people who are not Assembly members.
- The rest would be nominated by the Governor from persons having knowledge or practical experience in matters like science, literature, cooperative movement, art and social service. (The Courts can't question the propriety or bonafide of the Governor's nomination.)

#### ***Qualifications of Members of Legislative Assembly***

A person shall not be qualified to be selected to occupy a seat in the Legislature of a State unless he/she

- (a) is an Indian citizen;
- (b) is 25 years or above for Legislative Assembly, and is 30 or above for Legislative Council, and
- (c) possess such other qualifications as may be prescribed by the Parliament.

Thus, the Representation of the People Act, 1951, has provided that a person shall not be elected either to the Legislative Assembly or the Council unless he is himself an elector for any Legislative Assembly constituency in that State. A person can be disqualified for being selected as and for being a member of the Legislative Assembly or Legislative Council of a State if he/she

- (a) holds an office of profit under GOI or any State Government, other than that of a Minister at the centre or any state or an office declared by a law of the State not to disqualify its holder (many States have passed such laws declaring certain offices to be offices the holding of which does not disqualify its holder for being a member of the Legislature of that States)
- (b) is mentally unsound as declared by a competent Court
- (c) is an undischarged insolvent
- (d) is not an Indian citizen or has voluntarily got the citizenship of a foreign State or is under any acknowledgement of adherence/allegiance to a foreign nation
- (e) is so disqualified by or under any law made by Parliament

Thus, the Representation of the People Act, 1951, has laid down some grounds of disqualification, like conviction by a Court, having been found guilty of electoral malpractice, being a manager or director of a corporation in which Government possesses a financial interest. Article 192 says that if any question arises as to whether a member of a House of the Legislature of a State has become subject to any of the disqualifications mentioned above, the matter will be referred to the Governor of the state who has to act in accordance with the opinion of the Election Commission. His decision is final and not liable to be questioned in Court.

### **Who are the officers of the state legislature?**

#### **Facts about Speaker & Deputy Speaker:**

1. A Speaker vacates his office if he ceases to be a member of the Assembly.
2. He may also resign his office at any time.

3. A speaker may be removed from office by a resolution of the Assembly passed by a majority of all the then members of the Assembly after fourteen days' notice of the intention to move such a resolution.
4. Speaker does not vacate his office on the dissolution of the Assembly.
5. He continues to be the Speaker until immediately before the first sitting of the Assembly after the dissolution.
6. While the office of the Speaker is vacant, the Deputy Speaker performs his duties.
7. The duties and powers of the Speaker are, broadly speaking the same as those of the Speaker of the House of the People (Lok Sabha).

#### **Facts about Chairman & Deputy Chairman:**

1. The Council chooses from amongst its members a Chairman and a Deputy Chairman.
2. Both vacate their offices if they cease to be members of the Council or resign from its membership.
3. They can also be removed by a resolution of the Council passed by a majority of all the then members of the Council, provided fourteen days notice to move such resolution of removal has been given.
4. When the resolution for removal is under discussion against the Chairman or the Deputy Chairman, the concerned person shall not preside at the sitting of the Council, although he may be present at such a sitting and has the right to speak in, and otherwise to take part in the proceedings of the Council.
5. He shall be entitled to vote only in the first instance on such resolution or on any other matter during such proceedings.
6. In case of an equality of votes, he does not exercise a casting vote to which he is otherwise entitled under Article 189.
7. The Chairman presides at all sittings of the Council and in his absence the Deputy Chairman.
8. During the absence of both the Chairman and the Deputy Chairman, such other person as may be determined by the rules of procedure of the Council shall preside; or, if no such person is present, such other person as may be determined by the Council shall act as Chairman.

9. While the office of the Chairman is vacant, the duties of his office are performed by the Deputy Chairman. If the office of the Deputy Chairman is also vacant, such member of the Council as the Governor may appoint shall perform all such duties connected with the office of the Chairman.

### **Powers & Functions of State Legislature**

The functions of the states' Legislative Council are only advisory in nature. If any Bill is passed by the Legislative Assembly and sent to the Council, and the Council refuses to give its approval, then the Assembly has the right to reconsider it. The assembly may pass it with or without the amendments proposed by the Council, and again send it to the Council. When a bill approved by the Assembly is sent to the Council for the first time, it may retain it for three months, but in the case when it is sent for the second time and is kept in the Council for one month only, the bill is deemed as having been passed. This evidently demonstrates the Assembly's absolute superiority over the LC. In the case of Money Bills, the State Assembly's powers are the same as those of the Lok Sabha. It is evident that the position of the Vidhan Parishad is haplessly weak. Even, in theory, it cannot be compared to the Rajya Sabha that, in spite of being the upper chamber of the Union Legislature, has some effective powers.

- (1) All the LC can do is delay the passing of a money bill by 14 days, a non-money bill by 3 months or a non-money bill that is sent back to it with recommendations by 1 month.
  - (2) There is no provision in the Constitution for a joint sitting of the State Legislature. It is to be noted that while the Vidhan Sabha can override the Vidhan Parishad, the vice versa is never possible. A non-money bill that is passed by the Vidhan Parishad can be rejected by the Vidhan Sabha more than once.
  - (3) The LC members do not participate in the election of the President of the country. Apart from that, they do not have any meaningful role in any bill's rectification nor in a constitutional amendment.  
In practical terms, the Legislature of a State implies its Legislative Assembly which possesses the following major powers and functions:
- (i) It can create laws on any subject in the State List; it can also

create laws on the Concurrent List provided the law does not contradict or conflict any law already made by the Parliament.

- (ii) The Assembly asserts control over the Council of Ministers. Assembly members can question the ministers, move motions and resolutions, and also pass a vote of censure in order to dismiss the state government. The government ministry is collectively accountable to the Legislative Assembly. If the ministry is defeated in the Assembly, it amounts to the passing of a no-confidence vote against the government.
- (iii) The assembly controls the State's finances. A money Bill can emerge from the Assembly and it is considered passed by the LC after a lapse of fourteen days after reference made to it by the Sabha. It could reject or pass the grants or reduce their amount indicating rejection or adoption of the budget and hence, implying victory or defeat of the State Government. Therefore, no tax can be levied or withdrawn without the consent of the Vidhan Sabha.
- (iv) The Assembly has constituent powers. With reference to Article 368, certain Bills of Constitutional amendment after being passed by the Parliament would be referred to the States for the process of ratification. In these cases, the Vidhan Sabha has a role to play. It should give its judgement by passing a resolution by a simple majority indicating approval or disapproval of the said Bill. There is a provision wherein the President shall refer to the state assembly of a state before he recommends the introduction of a bill which concerns with the alteration of the concerned state's boundary lines or its reorganisation in such a manner that its territory is increased or decreased.
- (v) Some other powers of the State Assembly are as under:
  - (a) It elects its Speaker as well as Deputy Speaker. It can also

- remove them by a no-confidence vote.
- It participates in the election of India's President.
  - It also considers reports presented by agencies such as the Auditor-General, State Public Service Commission, and others.

Hence, it is evident that the Vidhan Sabha is the powerful and popular chamber of the State Legislature. In theory, it is somewhat parallel to the Lok Sabha.

### ***Limitations on the powers of State Legislature***

- Certain types of Bills cannot be moved in the State Legislature without the previous sanction of the President of India;
- Certain Bills passed by the State Legislature cannot become operative until they receive the President's assent after having been reserved for his consideration by the Governor;
- The Constitution empowers Parliament to frame laws on subjects included in the State List if the Council of States declares that it is necessary and expedient in the national interest that Parliament should legislate on these subjects;
- Parliament can exercise the power to make laws for the whole or any part of the territory of India with respect to any of the matters enumerated in the State List, while a Proclamation of emergency is in operation;
- The Legislative competence of Parliament can also extend to the subjects enumerated in the State List during the operation of a proclamation of breakdown of the Constitutional machinery.

### ***Legislative Procedure***

The Parliamentary procedure followed in the Assembly and the Council is the same as in Parliament.

- The State Legislature must meet at least twice a year and the interval between any two sessions should not be more than six months.
- The Governor delivers the opening address at the beginning of a new session in which he outlines the policy of the State Government.
- Any Bill may be introduced in either House of the Legislature except a Money Bill, which can be introduced

only in the Assembly. It has to go through three readings, after which it goes to the Governor for his assent. The Governor may send it back for reconsideration but once it is passed again by the Legislature, he cannot withhold his assent.

- He may reserve certain Bills for the consideration of the President, who may ask him to place it before the Legislature for reconsideration. When it is passed again with or without amendment it goes to the President for his consideration.
- The President is not bound to give his assent even though the Bill has been considered and passed for a second time by the State Legislature. In case the Assembly is dissolved before a Bill is passed, or it is passed by the Assembly but is pending before the Council, it will lapse.
- But in case of Bills which have been duly passed by the Assembly, if there is only one House in the State, and by the Assembly and the Council where there are two Houses, and is awaiting the assent of the Governor or the President it does not lapse.
- A bill which has been returned either by the Governor or the President for reconsideration can be considered and passed by the newly constituted Assembly, even though the Bill was originally passed by the dissolved House

## **State Executive**

### **The Governor**

- Nominal executive head.
- Normally each State has its own Governor, but under the Seventh Amendment Act, 1956, the same person can be appointed as Governor of one or more States or Lt. Governor of the Union Territory.
- Appointed by the President on the recommendations of Union Council of Ministers.

### **QUALIFICATION**

- Citizen of India.
- Completed 35 years of age.
- Shouldn't be a member of either house of parliament or the state legislature.
- Must possess the qualification for membership of State Legislature.
- Mustn't hold any office of profit.

### OTHER POINTS

- His usual term of office is 5 years but holds the office during the pleasure of the President. He can be asked to continue for more time until his successor takes the charge.
- Can give his resignation or can be removed earlier by the President. The legislature of a State or a High Court has no role in the removal of a Governor.
- Salary from the Consolidated Fund of the State (Rs. 1,10,000 per month) and is not subject to the Vote of the State Legislature. When the same person is appointed as the Governor of two or more States, the emoluments and allowances payable to him shall be allocated among the States in such proportion as determined by the President of India.
- His oath is administered by the Chief Justice of the concerned State High Court and in his absence, the senior-most judge of that Court.

### POWERS

#### (a) Executive Powers

- Appoints Chief Minister, Council of Ministers, Chairman & members of State Public Service Commission, Advocate General of the State and Election Commissioner of the State.

#### (b) Legislative Powers

- Summons, Prorogues & dissolves the State Legislature.
- Addresses the first session of State Legislature after election and at the beginning of each new session.
- Sends messages to State Legislature on bills pending before it.
- Appoints 1/6<sup>th</sup> members of Legislative Council.
- Nominates one member from the Anglo-Indian community (if not proper representation).
- Makes laws through ordinances.
- Gives assent to the Bills so that they become laws. The Governor has the following alternatives before him with respect to the Bills : (i) He can give his assent to the Bill; (ii) He can return it, if it is not a Money Bill, for reconsideration suggesting alterations. But such Bills when passed again, have to be given assent; (iii) He may reserve the Bill for the assent of the President. He can even withhold his assent to the Bill.

#### (c) Financial Powers

- Ensures that the budget is laid. All money bills can be introduced on his recommendation only.

#### (d) Judicial Powers

- National Judicial Appointments Commission (NJAC) consults Governor while appointing Chief Justice and other judges of High Court. Appoints judges of Courts below the High Court. He can grant pardon reprieve or remission of punishment for offence against State laws. But he cannot grant pardon in cases of death sentences.

#### (e) Emergency Powers

- Reports to the President if the State Government is not running constitutionally and recommends the President's Rule (Article 356). When the President's Rule is in progress, he becomes the 'Agent of the Union Government in the State'. He takes over the reigns of administration directly into his own hands and runs the State with the aid of the Civil Servants.

#### (f) Other Powers

- Receives & Tables the report of State Auditor General.
- Tables the report of State Public Service Commission.
- Acts as Chancellor of State Universities & appoints Vice-chancellor.
- Can appoint any members as Chief Minister if no party has clear-cut majority.
- Can refuse to sign an ordinary bill passed by State Legislature.

#### Note :

- ❖ Sarkaria Commission suggested that CM should be consulted while appointing the governor; Only unquestionable person be there; Active politician shouldn't be appointed; Removal should be difficult; No need to remove the post of governor.

## Chief Minister & Council of Ministers

As a real executive authority, the Chief Minister is called the head of the government. He is assisted by his council of ministers who are a part of state executive along with Governor and Advocate-General of State. Similar to Prime Minister who is the head of the government at the centre, the Chief Minister is the head of the government at the state level.

#### Topics Covered:

Who is called a Chief Minister?

- ❖ How is a Chief Minister appointed?
- ❖ What is the term of Chief Minister's office?

**What is the main function of the Chief Minister?**

- ❖ In Relation to the Council of Ministers
  - ❖ In Relation to the Governor
  - ❖ In Relation to the State Legislature
- Chief Minister and the Governor**
- Who are State Council of Ministers?**
- ❖ How are the Council of Ministers appointed?
  - ❖ Composition of Council of Ministers
  - ❖ Collective Responsibility
- Articles related to State Council of Ministers**

### **Who is called a Chief Minister?**

He is the head of the state government. While the governor is the nominal executive of the state government, the person who becomes the chief minister is the real executive of the government. The real executive is called 'de facto' executive that means, 'in fact, whether by right or not.'

### **How is a Chief Minister appointed?**

Just like the Prime Minister, provisions of whose appointment are not mentioned in the Indian Constitution, Chief Minister's appointment particulars are not mentioned in the Constitution. According to Article 164 in the Indian Constitution, Governor appoints Chief Minister. However, the Governor cannot appoint any random person as the Chief Minister but has to follow a provision.

A leader of the party that has got the majority share of votes in the assembly elections, is appointed as the Chief Minister of the state.

#### **Note:**

- When no party gets a majority in the elections, governor exercises his own discretion and appoint a Chief Minister accordingly.
- In a case where no party has won the majority votes, Governor appoints the member of the largest party or one from the coalition (if occurs) as the Chief Minister and then he is given 1 month time to prove confidence in the house.
- If the incumbent dies in the office, Governor at his own discretion can appoint a Chief Minister however, the ruling party nominates a member and Governor usually appoints that person as the Chief Minister. This person then has to prove confidence within a specified time.
- A person not belonging to either house (Legislative Assembly & Council) can also be appointed as the Chief Minister, however, within six months of his tenure as a CM he should be elected to either

house without which he ceases to be a CM.

- Chief Minister can belong to any house in the State Legislature.

### **What is the term of Chief Minister's office?**

Aspirants should clearly understand that the term of Chief Minister is not fixed and he holds his office during the pleasure of the governor.

#### **Note:**

1. Governor cannot remove him any time.
2. Governor cannot even dismiss him till the time he enjoys the support of the majority of the house.
3. When CM loses his majority support, he has to resign and Governor dismisses him then.

### **What is the main function of the Chief Minister?**

The CM of the state performs functions in relation to the different categories of people:

1. In relation to the Council of Ministers
  2. In relation to the Governor
  3. In relation to the State Legislature
- Other than that, he also performs the following functions:
1. He chairs the State Planning Board
  2. He is a vice-chairperson of the concerned zonal council by rotation, holding that office for a period of one year at a time
  3. He is a member of Inter-State Council and National Development Council which are headed by the Prime Minister.

### **In Relation to the Council of Ministers**

The Chief Minister is the head of state council of ministers. He performs the following functions:

1. He recommends to the governor on who to appoint as ministers
2. He designates or reshuffles the portfolios of the ministers
3. He can ask a minister to resign
4. Meeting of the council of ministers is headed by him
5. All activities of the ministers are guided and controlled by the Chief Minister
6. If he resigns, the entire council of ministers collapses

- Note:** If the CM dies (or resigns), the council automatically dissolves.

### **In Relation to the Governor**

In relation to the governor, the Chief Minister performs the following functions:

1. All the activities, decisions that are taken up by the council of ministers are communicated to the governor by the chief minister
2. To report to the governor, information about the administrative affairs if and when asked by the governor
3. If any minister has decided on any issue, the same has to be reported to the Governor by the Chief Minister when the same has not been considered by the council.
4. He gives his advice to the governor for the appointment of the following persons:
  - (a) Advocate-General
  - (b) Chairman of state public service commission
  - (c) The state election commission, etc.

### **In Relation to the State Legislature**

He is the leader of the house and holding this position, he performs the following functions:

1. Before a governor prorogues and summons the sessions of the state legislature, Chief Minister's advice is a must
2. Legislative Assembly can be dissolved at any time on his recommendation to the governor
3. All government policies are announced by him on the floor of the house.

### **Chief Minister and the Governor**

The relationship between the Chief Minister of the state and the state's governor has always been in the news. The debate on the authority of the respective posts has made the rounds throughout. IAS aspirants will understand the dynamics shared by the CM and the Governor by following the details given below:

**Article 163 :** *The governor is advised by the council of ministers which is headed by the Chief Minister.*

**Note:** *When the governor acts at his own discretion, no advice is needed by the council*

**Article 164 :** *Governor appoints Chief Minister and later Chief Minister recommends Governor on the appointment of ministers*

**Article 167 :** *Chief Minister has to communicate all administrative decisions that are taken up by him and the*

*council of ministers to the governor.*

### **Who are State Council of Ministers?**

State Council of Ministers are similar to Central Council of Ministers. The state council is headed by the Chief Minister. The council comprises ministers appointed by the governor on the recommendation of the CM.

### **How are the Council of Ministers appointed?**

They are appointed by the governor on the advice of the CM. Governor also appoints a tribal affairs minister for the following states:

1. Chhattisgarh
2. Jharkhand
3. Madhya Pradesh
4. Odisha

**Note:** *Bihar was also one of the states to have tribal affairs minister, however, 94th Amendment Act 2006 freed Bihar from this obligation.*

### **Composition of Council of Ministers**

The size of the council is not mentioned in the Indian Constitution. Chief Minister decides the size and the rank of the ministers as per the requirement in the State Legislature.

There are three categories of Council of Ministers:

1. Cabinet Ministers
2. Ministers of State
3. Deputy Ministers

### **Collective Responsibility**

The provision of collective responsibility is dealt by the Article 164. The Article mentions that the council of ministers are collectively responsible to the state legislature. This means that all the ministers own joint responsibility to the legislative assembly for all their acts of omission and commission.

### **Note:**

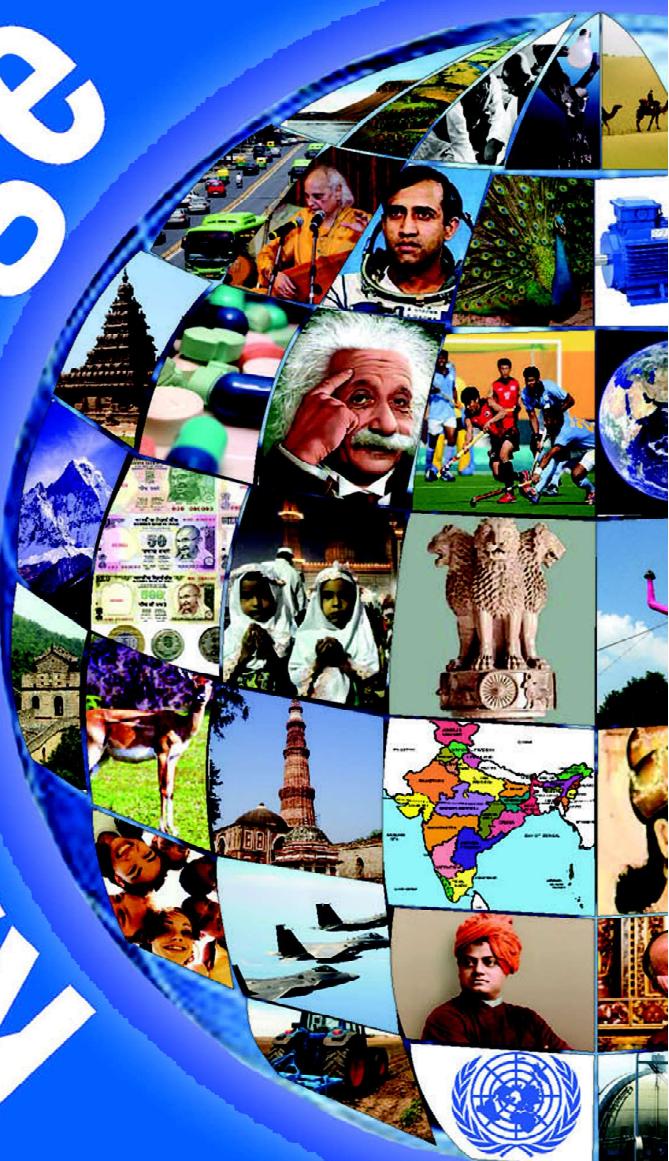
1. When the legislative assembly passed a no-confidence motion against the council, all the ministers of the council have to resign including those belonging to Legislative Council too.
2. The council of ministers can advise the governor to dissolve the legislative assembly on the ground that the House does not represent the views of the electorate faithfully and call for fresh elections. The governor may not oblige the council of ministers which has lost the confidence of the legislative assembly.

**Articles related to State Council of Ministers**

The following articles of the Indian Constitution are important to be read by the aspirants for UPSC 2020. These articles are attached with council of ministers. Refer to these in the table given below:

<b>Articles</b>	<b>Provision</b>	
163 : Council of Ministers to aid and advise Governor		

# General Knowledge



# GENERAL KNOWLEDGE

## At a Glance

### □ IMPORTANT BOOKS & AUTHORS

- “**The Thin Mind Map Book**” authored by a mind mapping & brain literacy pioneer **Dharmendra Rai**, was launched recently.
- The Vice President of **India Muppavarapu Venkaiah Naidu** released a book titled ‘**A Child of Destiny**’ an autobiography penned by **Prof. K. Ramakrishna Rao**.
- The Vice President of India **M Venkaiah Naidu** released the book titled ‘Death- An inside Story: A book for all those who shall’ authored by Jaggi Vasudev, but famously known as Sadhguru, Founder of Isha Foundation.
- A book ‘**Karmayoddha Granth**’ on the life of **Prime Minister Narendra Modi** released by Home Minister Amit Shah.
- Former President **Pranab Mukherjee** released the autobiography of Yashwant Sinha titled ‘**Relentless**’.
- The **National Council of Science Museums (NCSM) and IIT Gandhinagar and Kharagpur**, joined hands to develop **Gandhipedia**, an online repository of books, letters and speeches written by Mahatma Gandhi, to commemorate his 150th birth anniversary.
- The yearly magazine called ‘**Borderman**’ was released by **Nityanand Rai**, Minister of State for Home Affairs.
- **Viswanathan Anand** launched his autobiography ‘**Mind Master**’. Anand’s autobiography is co-authored by sports journalist **Susan Ninan**.
- Social Justice and Empowerment Minister launched the Braille version of the book “**Exam Warriors**” written by **Prime Minister Narendra Modi in New Delhi**.
- A book titled ‘**Turbulence and Triumph: The Modi Years**’ jointly authored by **Rahul Agarwal and Bharathi S Pradhan** released in New Delhi.
- A book titled “**Dreams of a Billion: India and the Olympic Games**” authored by **Boria Majumdar** with Nalin Mehta published by Harper Collins India.
- A book titled “**Politics of Opportunism: Regional Parties, Coalitions, Centre-State Relations in India**” and authored by **RPN Singh** was released by noted economist and political analyst **S Gurumurthy**.
- Vice-President M. Venkaiah Naidu released a monograph, ‘**Musical Excellence of Mridangam**’.
- Former **CJI Ranjan Gogoi** released the Assamese version of the book ‘**Courts of India: Past to Present**’ in Guwahati, Assam.
- On 11th anniversary of the 26/11 Mumbai terror attacks, a book titled “**Hemant Karkare -A Daughter’s Memoir**” by his daughter **Jui Karkare Navare** was released in Mumbai, Maharashtra.
- Union HRD Minister **Ramesh Pokhriyal ‘Nishank’** launched 3 books which are a collection of stories for **Children namely Kumbh, Garam Pahad and Dilli ki Bulbul (Sindhi edition)** in New Delhi.
- A book penned by Indian Ambassador to the Netherlands **Venu Rajamony** titled ‘**India and the Netherlands – Past, Present and Future**,’ was released in Amsterdam.
- A new book entitled “**The Tech Whisperer**”, written by digital transformation expert Jaspreet Bindra, features a chapter on AI (Artificial Intelligence).
- A new book titled “**150 Years of Celebrating the Mahatma the South African Legacy**”, by Fakir Hassen launched in Johannesburg, South Africa.
- **Bill Gates’ new book titled “How to Avoid a Climate Disaster: The Solutions We Have and the Breakthroughs We Need”** will be released on June 2020.
- A new book titled “**India in a Warming World: Integrating Climate Change and Development**” is set to release on November 2019, edited by Navroz K Dubash.
- Indian Chess player, **Viswanathan Anand** penned a book titled “**Mind Master: Winning Lessons from a Champion’s Life**”.
- Prime Minister Narendra Modi unveiled a book titled ‘**Bridgital Nation**’ in New Delhi and authored by **N Chandrasekaran**, Chairman, Tata Sons and Roopa Purushothaman Eminent industrialist.

- **Kashi Nath Pandit's** new book entitled "**Ten Studies in Kashmir: History and Politics**", published by Academic Foundation

<b>Authors</b>	<b>Books</b>	
<b>William Shakespeare</b>	<ul style="list-style-type: none"> <li>❖ King Lear</li> <li>❖ All's Well That Ends Well</li> <li>❖ Twelfth Night</li> <li>❖ Comedy of Errors</li> <li>❖ Romeo and Juliet</li> <li>❖ Anthony and Cleopatra</li> <li>❖ The Tempest</li> <li>❖ Macbeth</li> <li>❖ Julius Caesar</li> <li>❖ Othello</li> </ul>	
<b>Charles Dickens</b>	<ul style="list-style-type: none"> <li>❖ A Tale of Two Cities</li> <li>❖ Oliver Twist</li> <li>❖ David Copperfield</li> <li>❖ Great Expectations</li> </ul>	
<b>Leo Tolstoy</b>	<ul style="list-style-type: none"> <li>❖ Resurrection</li> <li>❖ War and Peace</li> <li>❖ Anna Karenina</li> </ul>	
<b>Barack Obama</b>	<ul style="list-style-type: none"> <li>❖ Dreams from My Father : A Story of Race and Inheritance</li> <li>❖ The Audacity of Hope: Thoughts on Reclaiming the American Dreams</li> </ul>	
<b>HG Wells</b>	<ul style="list-style-type: none"> <li>❖ The War of the Worlds</li> <li>❖ The Time Machine</li> <li>❖ Invisible Man</li> </ul>	
<b>Jane Austen</b>	<ul style="list-style-type: none"> <li>❖ Pride and Prejudice</li> <li>❖ Sense and Sensibility</li> </ul>	
<b>Lewis Carroll</b>	<ul style="list-style-type: none"> <li>❖ Through the Looking Glass</li> <li>❖ The Hunting of Snark</li> </ul>	
<b>Adam Gilchrist</b>	<ul style="list-style-type: none"> <li>❖ True Colour : My life (Autobiography)</li> </ul>	
<b>Salman Khurshid</b>	<ul style="list-style-type: none"> <li>❖ The Other Side of the Mountain</li> </ul>	
<b>Charles Darwin</b>	<ul style="list-style-type: none"> <li>❖ Descent of Man, Origin of Species</li> </ul>	
<b>Earnest Hemingway</b>	<ul style="list-style-type: none"> <li>❖ The Old Man and the Sea</li> </ul>	
<b>Isaac Newton</b>	<ul style="list-style-type: none"> <li>❖ Principia Mathematica</li> </ul>	
<b>Jeffrey Archer</b>	<ul style="list-style-type: none"> <li>❖ First Among Equals</li> </ul>	
<b>Oliver Goldsmith</b>	<ul style="list-style-type: none"> <li>❖ She Stoops to Conquer</li> </ul>	
<b>Oscar Wilde</b>	<ul style="list-style-type: none"> <li>❖ Importance of Being Earnest</li> </ul>	
<b>Authors</b>	<b>Books</b>	
<b>William Shakespear</b>	❖ King Lear	
<b>Parvez Musharraf</b>	<ul style="list-style-type: none"> <li>❖ "In the Line of Fire"</li> </ul>	
<b>Shoaib Akhtar</b>	<ul style="list-style-type: none"> <li>❖ Importance of Being Earnest</li> </ul>	
<b>Dr. APJ Abdul Kalam</b>	<ul style="list-style-type: none"> <li>❖ Ignited Minds : Unleashing the Power with India</li> <li>❖ You Are Born to Blossom,</li> <li>❖ My Journey</li> <li>❖ India 2020-A vision for the New Millennium.</li> <li>❖ Wings of Fire</li> <li>❖ The Great Derangement: Climate Change and the Unthinkable</li> </ul>	
<b>Amitabh Ghosh</b>		
<b>Mulk Raj Anand</b>	<ul style="list-style-type: none"> <li>❖ The Village</li> <li>❖ Seven Summers</li> <li>❖ Two Leaves and a Bud.</li> <li>❖ Coolie</li> <li>❖ Kora Kagaz</li> <li>❖ Death of a City</li> <li>❖ Kagaz Te Kanwas,</li> <li>❖ The Revenue Stamp</li> <li>❖ Makers of Modern India</li> <li>❖ India after Gandhi : The History of the World's Largest Democracy</li> <li>❖ Environmentalism : A Global History</li> <li>❖ The States of Indian Cricket</li> </ul>	
<b>Amrita Pritam</b>		
<b>Ramchandra Guha</b>		
<b>Khushwant Singh</b>	<ul style="list-style-type: none"> <li>❖ The Sunset Club</li> <li>❖ Sahibs Who Loved India</li> <li>❖ Why I Supported the Emergency, Truth, Love and A Little Malice</li> <li>❖ We Indians</li> <li>❖ A Bride for the Sahib, Maharaja in Denims</li> <li>❖ One Night @ the Call Centre</li> <li>❖ Revolution 2020,</li> <li>❖ Live Corruption,</li> <li>❖ Ambition,</li> <li>❖ What young India Wants</li> <li>❖ Making India Awesome</li> <li>❖ Half Girlfriend</li> <li>❖ One Indian Girl</li> <li>❖ Devdas</li> <li>❖ Parineeta</li> <li>❖ My Experiments with Truth</li> <li>❖ Hind Swaraj</li> </ul>	
<b>Chetan Bhagat</b>		
<b>Sarat Chandra Chattopadhyay</b>		
<b>Mahatma Gandhi</b>		
<b>Abdul Kalam Azad</b>	<ul style="list-style-type: none"> <li>❖ India Wins Freedom</li> </ul>	

Authors	Books	Jyotiba Phule	Ghulam Giri and other Stories
<b>BG Tilak</b>	❖ Gita Rahasya	<b>Kailash</b>	❖ Azad Bachpan Ki Or
<b>BR Ambedkar</b>	❖ What Congress and Gandhi have done to Untouchables	<b>Sathyarthi</b>	
<b>Daisy Hason</b>	❖ The To-Let House	<b>Ramesh Chandra</b>	❖ Economic History of India
<b>Din Bandhu Mitra</b>	❖ Neel Darpan	<b>Sunil Gavaskar</b>	❖ Sunny Days
<b>VD Savarkar</b>	❖ Indian War of Independence	<b>Swami Dauanand</b>	❖ Satyarth Prakash
		<b>Virat Kohli</b>	❖ Driven

### IMPORTANT HYDROPOWER DAMS

Dam	River	State
Tehri Dam	Bhagirathi	Uttarakhand
Lakhwar Dam	Yamuna	Uttarakhand
Idukki (Eb)/Idukki Arch Dam	Periyar	Kerala
Bakra Dam	Satluj	Himachal Pradesh
Pakal Dul Dam	Marusudar	J&K
Sardar Sarover Gujarat Dam	Narmada	Gujarat
Sardar Sarover Gujarat Dam	Krishna	Andhra Pradesh
Ranjit Sagar Dam	Ravi	Punjab
Baglihar Dam	Chenab	J & K
Pong Dam	Beas	Himachal Pradesh
Nagarjuna Sagar Dam	Krishna	Telangana
Salal (Rockfill & Concrete) Dam	Chenab	J&K
Supa Dam	Kali Nadi	Karnataka
Koteswar Dam	Bhagirathi	Uttarakhand
Rihand Dam	Rihand	Uttar Pradesh
Indira Sagar (NHDC) Dam	Narmada	Madhya Pradesh
Pillur Dam	Bhavani	Tamil Nadu
Madupetty (Eb) Dam	Palar	Kerala
Parbati II Dam	Parbati	Himachal Pradesh
Chakra Dam	Chakra	Karnataka

### ATOMIC POWER PLANTS, IMPORTANT NATIONAL PARKS

States/UTs	National Parks(NP)	Wild Life Sanctuaries	Power Plants
<b>J&amp;K</b> Governor: Girish Chandra Murmu Capital: Jammu(Winter) Srinagar(Summer)	<ul style="list-style-type: none"> <li>Dachigam National Park</li> <li>Hemis National Park</li> <li>Kishtwar National Park</li> <li>Salim Ali National Park</li> </ul>	<ul style="list-style-type: none"> <li>Gulmarg WLS</li> <li>Limber WLS</li> <li>Nandini WLS</li> </ul>	NA
<b>Himachal Pradesh</b> CM: Jairam Thakur Governor: Bandaru Dattatraya Capital: Shimla	<ul style="list-style-type: none"> <li>Pin Valley National Park</li> <li>Great Himalayan National Park</li> <li>Inderkilla National Park</li> <li>Khirganga National Park</li> <li>Simbalbara National Park</li> </ul>	<ul style="list-style-type: none"> <li>Bandli WLS</li> <li>Daranghati WLS</li> <li>Dhauladhar WLS</li> <li>Nargu WLS</li> <li>Pong Dam Lake WLS</li> <li>Shilli WLS</li> <li>Talra WLS</li> </ul>	<ul style="list-style-type: none"> <li>Girinagar Hydel Project</li> <li>Binwa Hydel Project</li> <li>Rangtong Hydel Project</li> <li>Baner&amp;Neugal Project</li> </ul>
<b>Punjab</b> CM: Captain Amarinder Singh Governor: V P Singh Badnore Capital: Chandigarh	NA	<ul style="list-style-type: none"> <li>Abohar WLS</li> <li>Harike Lake WLS</li> <li>Jhajjar Bacholi WLS</li> </ul>	<ul style="list-style-type: none"> <li>Guru Gobind Singh Super Thermal Power Plant</li> </ul>
<b>Haryana</b> CM: Manohar Lal Khattar Governor: Satyadeo Narayan Arya Capital: Chandigarh	<ul style="list-style-type: none"> <li>Kalesar National Park</li> <li>Sultanpur National Park</li> </ul>	<ul style="list-style-type: none"> <li>Bhindawas WLS</li> <li>Kalesar WLS</li> <li>Khaparwas WLS</li> </ul>	<ul style="list-style-type: none"> <li>Gorakhpur Atomic Power Station</li> <li>Deenbandhu Chhotu Ram TPS</li> <li>Rajiv Gandhi TPS</li> </ul>
<b>Uttar Pradesh</b> CM: Yogi Adityanath Governor: Anandiben Patel Capital: Lucknow	<ul style="list-style-type: none"> <li>Dudhwa National Park</li> </ul>	<ul style="list-style-type: none"> <li>Hastinapur WLS</li> <li>Ranipur WLS</li> <li>Sohagibarwa WLS</li> <li>Sur Sarovar WLS</li> <li>Chandrprabha WLS</li> <li>National Chambal WLS</li> </ul>	<ul style="list-style-type: none"> <li>Narora Atomic Power Station</li> <li>Rihand Thermal Power Station</li> <li>Anpara Thermal Power Station</li> </ul>

States/UTs	National Parks(NP)	Wild Life Sanctuaries	Power Plants
<b>Bihar</b> CM: Nitish Kumar Governor: Phagu Chauhan Capital: Patna	• Valmiki National Park	• Gautam Budha WLS • Kaimur WLS • Pant (Rajgir) WLS • Valmiki WLS	• Kahalgaon Super Thermal Power Station • Barauni TPS
<b>Chhattisgarh</b> CM: Bhupesh Baghel Governor: Anusuya Uikey Capital: Raipur	• Indravati National Park • Kanger Valley National Park • Guru Ghasi Das (Sanjay)	• Badalkhol WLS • Bhairamgarh WLS • Bhoramdev WLS • Udanti Wild Buffalo WLS	• Sipat Thermal Power Plant • Hasdeo TPS • Bhilai Expansion Power Plant
<b>Jharkhand</b> CM: Hemant Soren Governor: Draupadi Murmu Capital: Ranchi	• Betla National Park	• Lawalong WLS • Palkot WLS • Parasnath WLS	• Chandrapura TPS • Koderma Thermal Power Station • Bokaro TPS
<b>Andhra Pradesh</b> CM: Jaganmohan Reddy Governor Biswa Bhushan Harichandan Capital: Amaravati	• Sri Venkateswara National Park	• Coringa WLS • Kolleru WLS • Nellapattu WLS • Pulicat Lake WLS • Rajiv Gandhi (Nagarjuna Sagar-Srisailam) WLS • Rollapadu WLS	• Simhadri Super Thermal Power Plant • Sri Damodaram Sanjevaiah Thermal Power Station •
<b>Telangana</b> CM: K. Chandrashekhar Rao Governor: Tamilisai Soundararajan Capital: Hyderabad	• Mrugavani National Park	• Kawal WLS	
<b>Assam</b> CM: Sarbananda Sonowal Governor: Jagdish Mukhi Capital: Dispur	• Dibru-Saikhowa NP • Kaziranga National Park • Manas National Park • Nameri National Park • Rajiv Gandhi Orang National Park	• Amchang WLS • Chakrashila WLS • Dihing Patkai WLS • East Karbi Anglong WLS • North Karbi Anglong WLS • Nambor WLS	• Bongaigaon Thermal Power Plant
<b>Goa</b> CM: Pramod Sawant Governor: Satya Pal Malik Capital: Panaji	• Bhagwan Mahavir (Mollem) National Park	• Bondla WLS • Madei WLS • Bhagwan Mahavir (Mollem) WLS • Netravali WLS	
<b>Gujarat</b> CM: Vijay Rupani Governor: Acharya Dev Vrat Capital: Gandhinagar	• Blackbuck National Park, Velavadar • Gir Forest National Park • Marine National Park, Gulf of Kutch • Bansda National Park	• Jambugodha WLS • Jessore WLS • Kutch Desert WLS • Mitiyala WLS • Porbandar Lake WLS • Rampara Vidi WLS • Ratanmahal WLS • Shoolpaneswar (Dhumkhali) WLS • Thol Lake WLS • Wild Ass WLS	• Mundra Thermal Power Station • Ukai Thermal Power Station • Akrinota Thermal Power Station • Kakrapar Nuclear Power Plant
<b>Karnataka</b> CM: B. S. Yeddyurappa Governor: Vajubhai R. Vala Capital: Bengaluru	• Bandipur National Park • Bannerghatta National Park • Kudremukh National Park • Nagarhole National Park • Anshi national park	• Arabithittu WLS • Attiveri WLS • Bhadra WLS • Bhimgad WLS • Brahmagiri WLS • Cauvery WLS • Nugu WLS • Pushpagiri WLS	• Raichur Thermal Power Station • Udupi Thermal Power Plant • Bellary Thermal Power Station

States/UTs	National Parks(NP)	Wild Life Sanctuaries	Power Plants
		<ul style="list-style-type: none"> <li>• Ranganathittu Bird WLS</li> <li>• Sharavathi Valley WLS</li> <li>• Someshwara WLS</li> </ul>	
<b>Kerala</b> CM: Pinarayi Vijayan Governor: Arif Mohammed Khan Capital: Thiruvananthapuram	<ul style="list-style-type: none"> <li>• Eravikulam National Park</li> <li>• Mathikettan Shola National Park</li> <li>• Periyar National Park</li> <li>• Silent Valley National Park</li> <li>• Anamudi Shola National Park</li> <li>• Pampadum Shola NP</li> </ul>	<ul style="list-style-type: none"> <li>• Aralam WLS</li> <li>• Chimmonny WLS</li> <li>• Idukki WLS</li> <li>• Malabar WLS</li> <li>• Mangalavanam Bird WLS</li> <li>• Neyyar WLS</li> <li>• Periyar WLS</li> <li>• Thattekad Bird WLS</li> </ul>	<ul style="list-style-type: none"> <li>• Brahmapuram Power Station</li> <li>• Kayamkulam Power Station</li> </ul>
<b>Madhya Pradesh</b> CM: Kamal Nath Governor: Lalji Tandon Capital: Bhopal	<ul style="list-style-type: none"> <li>• Kanha National Park</li> <li>• Madhav National Park</li> <li>• Mandla Plant Fossils National Park</li> <li>• Panna National Park</li> <li>• Pench National Park</li> <li>• Sanjay National Park</li> <li>• Satpura National Park</li> <li>• Van Vihar National park</li> </ul>	<ul style="list-style-type: none"> <li>• Bori WLS</li> <li>• Gandhi Sagar WLS</li> <li>• Ghatigaon WLS</li> <li>• Ken Gharial WLS</li> <li>• Narsigharh WLS</li> <li>• National Chambal WLS</li> <li>• Orcha WLS</li> <li>• Kuno WLS</li> <li>• Sardarpur WLS</li> <li>• Son Gharial WLS</li> </ul>	<ul style="list-style-type: none"> <li>• Vindhya Chal Super Thermal Power Station</li> <li>• Sant Singaji Thermal Power Plant</li> <li>• Satpura Thermal Power Station</li> <li>• Amarkantak TPS</li> <li>• Sasan Ultra Mega Power Project</li> </ul>
<b>Maharashtra</b> CM: Uddhav Thackeray <b>Governor:</b> Bhagat Singh Koshyari Capital: Mumbai	<ul style="list-style-type: none"> <li>• Chandoli National Park</li> <li>• Navegaon National Park</li> <li>• Tadoba National Park</li> <li>• Gugamal national park</li> </ul>	<ul style="list-style-type: none"> <li>• Aner Dam WLS</li> <li>• Bhamragarh WLS</li> <li>• Bhimashankar WLS</li> <li>• Great Indian Bustard WLS</li> <li>• Jaikwadi WLS</li> <li>• Koyana WLS</li> <li>• Nagzira WLS</li> <li>• Painganga WLS</li> <li>• Radhanagari WLS</li> <li>• Sagaraeshwar WLS</li> <li>• Tipeshwar WLS</li> <li>• Tungareshwar WLS</li> </ul>	<ul style="list-style-type: none"> <li>• Tarapur Atomic Power Station</li> <li>• Tirora Thermal Power Station</li> <li>• Amravati Thermal Power Plant</li> </ul>
<b>Manipur</b> CM: N. Biren Singh Governor: Najma Heptulla Capital: Imphal	<ul style="list-style-type: none"> <li>• Keibul Lamjao National Park</li> </ul>	<ul style="list-style-type: none"> <li>• Yangoupokpi-Lokchao WLS</li> </ul>	
<b>Meghalaya</b> CM: Conrad Sangma Governor: Tathagata Roy Capital: Shillong	<ul style="list-style-type: none"> <li>• Balphakram National Park</li> <li>• Nokrek National Park</li> </ul>	<ul style="list-style-type: none"> <li>• Baghmara Pitcher Plant WLS</li> <li>• Nongkhlaiem WLS</li> <li>• Siju WLS</li> </ul>	
<b>Mizoram</b> CM: P.U Zoramthanga Governor: P.S. Sreedharan Pillai Capital: Aizawl	<ul style="list-style-type: none"> <li>• Murlen National Park</li> <li>• Phawngpui Blue National Park</li> <li>• Mountain National Park</li> </ul>	<ul style="list-style-type: none"> <li>• Dampa WLS (TR)</li> <li>• Ngengpui WLS</li> <li>• Pualreng WLS</li> <li>• Tokalo WLS</li> </ul>	
<b>Nagaland</b> CM: Neiphiu Rio Governor: RN Ravi Capital: Kohima	<ul style="list-style-type: none"> <li>• Intanki National Park</li> </ul>	<ul style="list-style-type: none"> <li>• Fakim WLS</li> <li>• Puliebadze WLS</li> <li>• Rangapahar WLS</li> </ul>	<ul style="list-style-type: none"> <li>• Dikhu Hydro Electric Power Plant</li> </ul>
<b>Odisha</b> CM: Naveen Patnaik Governor: Ganeshi Lal Capital: Bhubaneswar	<ul style="list-style-type: none"> <li>• Bhitarkanika National Park</li> <li>• Simlipal National Park</li> </ul>	<ul style="list-style-type: none"> <li>• Badrama WLS</li> <li>• Baisipalli WLS</li> <li>• Chilika (Nalaban) WLS</li> <li>• Hadgarh WLS</li> </ul>	<ul style="list-style-type: none"> <li>• Talcher Super Thermal Power Station</li> </ul>

States/UTs	National Parks(NP)	Wild Life Sanctuaries	Power Plants
		<ul style="list-style-type: none"> <li>Khalasuni WLS</li> <li>Satkosisa Gorge WLS</li> </ul>	
<b>Rajasthan</b> CM: Ashok Gehlot Governor: Kalraj Mishra Capital: Jaipur	<ul style="list-style-type: none"> <li>Sariska National Park</li> <li>Ranthambore National Park</li> <li>Darrah National Park</li> <li>Desert National Park</li> <li>Keoladeo National Park</li> </ul>	<ul style="list-style-type: none"> <li>Bundh Baratha WLS</li> <li>Darrah WLS</li> <li>Jawahar Sagar WLS</li> <li>Kailadevi WLS</li> <li>Mount Abu WLS</li> <li>Ramsagar WLS</li> <li>Sariska WLS</li> <li>Sawai Man Singh WLS</li> <li>Shergarh WLS</li> <li>Sitamata WLS</li> </ul>	<ul style="list-style-type: none"> <li>Chhabra Thermal Power Station</li> <li>Suratgarh Power Station</li> </ul>
<b>Sikkim</b> CM: PS Golay Governor: Ganga Prasad Capital: Gangtok	<ul style="list-style-type: none"> <li>Khangchendzonga National Park</li> </ul>	<ul style="list-style-type: none"> <li>Fambong Lho WLS</li> <li>Kitam WLS (Bird)</li> <li>Maenam WLS</li> <li>Pangolakha WLS</li> </ul>	<ul style="list-style-type: none"> <li>Rangit Hydro Electric Power Project</li> </ul>
<b>Tamil Nadu</b> CM: Edappadi Palaniswami Governor: Banwarilal Purohit Capital: Chennai	<ul style="list-style-type: none"> <li>Mudumalai National Park</li> <li>Mukurthi National Park</li> <li>Indira Gandhi (Annamalai) National Park</li> <li>Guindy National Park</li> <li>Gulf of Mannar Marine National Park</li> </ul>	<ul style="list-style-type: none"> <li>Indira Gandhi (Annamalai) WLS</li> <li>Kalakad WLS</li> <li>Karaivetti WLS</li> <li>Karikili WLS</li> <li>Mudumalai WLS</li> <li>Pulicat Lake WLS</li> <li>Vaduvoor WLS</li> <li>Vedanthangal WLS</li> <li>Vettangudi WLS</li> </ul>	<ul style="list-style-type: none"> <li>Kudankulam Nuclear Power Plant</li> <li>Neyveli Thermal</li> <li>Tuticorin Thermal Power Station</li> </ul>
<b>Tripura</b> CM: Biplab Deb Governor: Ramesh Bais Capital: Agartala	<ul style="list-style-type: none"> <li>Bison( Rajbari ) National Park</li> <li>Clouded Leopard National Park</li> </ul>	<ul style="list-style-type: none"> <li>Gumti WLS</li> <li>Rowa WLS</li> <li>Sepahijala WLS</li> <li>Trishna WLS</li> </ul>	<ul style="list-style-type: none"> <li>Palatana Thermal Power Plant</li> </ul>
<b>Uttarakhand</b> CM: Trivendra Singh Rawat Governor: Baby Rani Maurya Capital: Dehradun	<ul style="list-style-type: none"> <li>Gangotri National Park</li> <li>Jim Corbett National Park</li> <li>Valley of Flowers National Park</li> </ul>	<ul style="list-style-type: none"> <li>Askot Musk Deer WLS</li> <li>Binsar WLS</li> <li>Govind Pashu Vihar WLS</li> <li>Kedarnath WLS</li> <li>Sonanadi WLS</li> </ul>	<ul style="list-style-type: none"> <li>Chibro Power Plant</li> <li>Khodri Power Plant</li> <li>Chilla Power Plant</li> </ul>
<b>West Bengal</b> CM: Mamata Banerjee Governor: Jagdeep Dhankhar Capital: Kolkata	<ul style="list-style-type: none"> <li>Buxa National Park</li> <li>Neora Valley National Park</li> <li>Singalila National Park</li> <li>Sundarbans National Park</li> </ul>	<ul style="list-style-type: none"> <li>Ballavpur WLS</li> <li>Chintamani Kar Bird Sanctuary</li> <li>Haliday Island WLS</li> <li>Lothian Island WLS</li> <li>Mahananda WLS</li> </ul>	<ul style="list-style-type: none"> <li>Mejia Thermal Power Station</li> <li>Farakka Super Thermal Power Station</li> <li>Kolaghat Thermal Power Station</li> <li>Bakreshwar Thermal Power Station</li> <li>Durgapur Steel Thermal Power Station</li> </ul>
<b>Arunachal Pradesh</b> Capital: Itanagar CM: Pema Khandu Governor: BD Mishra	<ul style="list-style-type: none"> <li>Namdapha National Park</li> <li>Mouling National Park</li> </ul>		

**MINISTER & PORTFOLIO & CONSTITUENCIES**

**Cabinet Ministers of India**

<b>Sl. No</b>	<b>Minister</b>	<b>Portfolio/Ministry</b>
1.	Shri Raj Nath Singh	Minister of Defence.
2.	Shri Amit Shah	Minister of Home Affairs.
3.	Shri Nitin Jairam Gadkari	Minister of Road Transport and Highways; and Minister of Micro, Small and Medium Enterprises.
4.	Shri D.V. Sadananda Gowda	Minister of Chemicals and Fertilizers.
5.	Smt. Nirmala Sitharaman	Minister of Finance; and Minister of Corporate Affairs.
6.	Shri Ramvilas Paswan	Minister of Consumer Affairs, Food and Public Distribution.
7.	Shri Narendra Singh Tomar	Minister of Agriculture and Farmers Welfare; Minister of Rural Development; and Minister of Panchayati Raj.
8.	Shri Ravi Shankar Prasad	Minister of Law and Justice; Minister of Communications; and Minister of Electronics and Information Technology.
9.	Smt. Harsimrat Kaur Badal	Minister of Food Processing Industries.
10.	Shri Thaawar Chand Gehlot	Minister of Social Justice and Empowerment.
11.	Dr. Subrahmanyam Jaishankar	Minister of External Affairs.
12.	Shri Ramesh Pokhriyal 'Nishank'	Minister of Human Resource Development.
13.	Shri Arjun Munda	Minister of Tribal Affairs.
14.	Smt. Smriti Zubin Irani	Minister of Women and Child Development; and Minister of Textiles.
15.	Dr. Harsh Vardhan	Minister of Health and Family Welfare; Minister of Science and Technology; and Minister of Earth Sciences.
16.	Shri Prakash Javadekar	Minister of Environment, Forest and Climate Change; and Minister of Information and Broadcasting.
17.	Shri Piyush Goyal	Minister of Railways; and Minister of Commerce and Industry.
18.	Shri Dharmendra Pradhan	Minister of Petroleum and Natural Gas; and Minister of Steel.
19.	Shri Mukhtar Abbas Naqvi	Minister of Minority Affairs.
20.	Shri Pralhad Joshi	Minister of Parliamentary Affairs; Minister of Coal; and Minister of Mines.
21.	Dr. Mahendra Nath Pandey	Minister of Skill Development and Entrepreneurship.
22.	Shri Arvind Ganpat Sawant	Minister of Heavy Industries and Public Enterprise.
23.	Shri Giriraj Singh	Minister of Animal Husbandry, Dairying and Fisheries.
24.	Shri Gajendra Singh Shekhawat	Minister of Jal Shakti

**Ministers of State**

<b>S.No.</b>	<b>Name</b>	<b>Minister/Portfolio</b>
1.	Shri Faggansingh Kulaste	Minister of State in the Ministry of Steel.
2.	Shri Ashwini Kumar Choubey	Minister of State in the Ministry of Health and Family Welfare.
3.	Shri Arjun Ram Meghwal	Minister of State in the Ministry of Parliamentary Affairs; and Minister of State in the Ministry of Heavy Industries and Public Enterprises.
4.	General (Retd.) V. K. Singh	Minister of State in the Ministry of Road Transport and Highways.
5.	Shri Krishan Pal	Minister of State in the Ministry of Social Justice and Empowerment.
6.	Shri Danve Raosaheb Dadarao	Minister of State in the Ministry of Consumer Affairs, Food and Public Distribution.

<b>S.No.</b>	<b>Name</b>	<b>Minister/Portfolio</b>
7.	Shri G. Kishan Reddy	Minister of State in the Ministry of Home Affairs.
8.	Shri Parshottam Rupala	Minister of State in the Ministry of Agriculture and Farmers Welfare.
9.	Shri Ramdas Athawale	Minister of State in the Ministry of Social Justice and Empowerment.
10.	Sadhvi Niranjan Jyoti	Minister of State in the Ministry of Rural Development.
11.	Shri Babul Supriyo	Minister of State in the Ministry of Environment, Forest and Climate Change.
12.	Shri Sanjeev Kumar Balyan	Minister of State in the Ministry of Animal Husbandry, Dairying and Fisheries.
13.	Shri Dhotre Sanjay Shamrao	Minister of State in the Ministry of Human Resource Development; Minister of State in the Ministry of Communications; and Minister of State in the Ministry of Electronics and Information Technology.
14.	Shri Anurag Singh Thakur	Minister of State in the Ministry of Finance; and Minister of State in the Ministry of Corporate Affairs.
15.	Shri Angadi Suresh Channabasappa	Minister of State in the Ministry of Railways.
16.	Shri Nityanand Rai	Minister of State in the Ministry of Home Affairs.
17.	Shri Rattan Lal Kataria	Minister of State in the Ministry of Jal Shakti; and Minister of State in the Ministry of Social Justice and Empowerment.
18.	Shri V. Muraleedharan	Minister of State in the Ministry of External Affairs; and Minister of State in the Ministry of Parliamentary Affairs.
19.	Smt. Renuka Singh Saruta	Minister of State in the Ministry of Tribal Affairs.
20.	Shri Som Parkash	Minister of State in the Ministry of Commerce and Industry.
21.	Shri Rameswar Teli	Minister of State in the Ministry of Food Processing Industries.
22.	Shri Pratap Chandra Sarangi	Minister of State in the Ministry of Micro, Small and Medium Enterprises; and Minister of State in the Ministry of Animal Husbandry, Dairying and Fisheries.
23.	Shri Kailash Choudhary	Minister of State in the Ministry of Agriculture and Farmers Welfare.
24.	Sushri Debasree Chaudhuri	Minister of State in the Ministry of Women and Child Development.

<b>IMPORTANT DAYS</b>	
• January 1	Global Family Day
• January 4	World Braille Day
• January 9	NRI Day (Pravasi Bhartiya Diwas)
• January 10	World Hindi Day
• January 12	National Youth Day
• January 13	Lohri Day
• January 14-15	Makar Sankranti
• January 15	Army Day
• January 23	Netaji Subash Chandra Bose Jayanti
• January 25	National Voters day, National Tourism Day
• January 26	India's Republic Day, International Customs Day
• January 27	International Day of Commemoration
• January 30	Martyrs' Day
• January (last Sunday)	World Leprosy Eradication Day
• February 2	World Wetlands Day
• February 4	World Cancer Day
• February 5	Safer Internet Day (Second day of the second week of February)
• February 6	International Day of Zero Tolerance to Female Genital Mutilation
• February 10	National De-worming Day
• February 11	International Day of Women and Girls in Science
• February 12	National Productivity Day
• February 13	World Radio Day, National Women's Day (Birth Date of Sarojini Naidu)
• February 14	Valentine Day
• February 20	World Day of Social Justice
• February 21	International Mother Language Day
• February 24	Central Excise Day
• February 27	World NGO Day
• February 28	National Science Day
• February 28/29	Rare Disease Day
• March 1	Zero Discrimination Day; World Civil Defence Day
• March 3	World Wildlife Day, World Hearing Day
• March 4	National Security Day
• March 8	International Women's Day
• March 12	World Kidney Day
• March 14	International Day of Action of Rivers, Pi Day
• March 15	World Consumer Right Day
• March 18	Ordnance Factories Day (India)
• March 20	International Day of Happiness; World Sparrow day
• March 21	World Forestry Day; World Down Syndrome Day; World Poetry Day
• March 22	World Day for Water, Bihar Day
• March 23	World Meteorological Day
• March 24	World TB Day
• March 27	World Theatre Day
• Second Wednesday of March	No Smoking Day
• Second Thursday of March	World Kidney Day
• April 1	Utkal Diwas
• April 2	World Autism Awareness Day
• April 4	International Day for Mine Awareness
• April 5	National Maritime Day
• April 7	World Health Day
• April 10	World Homeopathy Day
• April 11	National Safe Motherhood Day; National Pet Day
• April 13	Jallianwala Bagh Massacre
• April 17	World Haemophilia Day
• April 18	World Heritage Day
• April 19	World Liver Day
• April 21	Secretaries' Day; Civil Services Day
• April 22	Earth Day
• April 23	World Book and Copyright Day
• April 24	National Panchayati Day
• April 25	World Malaria Day
• April 26	World Intellectual Property Day
• April 27	World Veterinary Day
• April 28	World Day for Safety and Health at Work
• April 29	International Dance Day
• April 30	Ayushman Bharat Diwas
• May 1	Workers' Day (International Labour Day), Maharashtra Day
• May 3	Press Freedom Day
• May (1 <sup>st</sup> Sunday)	World Laughter Day
• May (1 <sup>st</sup> Tuesday)	World Asthma Day
• May (2 <sup>nd</sup> Sunday)	Mother's Day
• May 4	Coal Miners' Day; International Firefighters Day
• May 7	World Athletics Day
• May 8	World Red Cross Day; World Thalassaemia Day
• May 11	National Technology Day
• May 12	International Nurses Day
• May 15	International Day of the Family

• May 17	World Telecommunication Day; World Hypertension Day	• September 22	Rose Day Welfare of cancer patients)
• May 18	World AIDS Vaccine Day; International Museum Day	• September 23	International Day of Sign Language
• May 21	National Anti-Terrorism Day	• September 26	Day of the Deaf; World Contraception Day
• May 22	International Day for Biological Diversity	• September 27	World Tourism Day; World Maritime Day
• May 24	Commonwealth Day	• September 29	World Heart Day
• May 31	Anti-Tobacco Day	• September 30	International Translation Day
• June 1	World Milk Day	• September	World rivers day (Fourth Sunday of September)
• June 3	World Bicycle Day	• October 1	International Day for the Elderly
• June 4	International Day of Innocent Children Victims of Aggression	• October 2	Gandhi Jayanti; International Day of Non-Violence
• June 5	World Environment Day	• October (first Monday)	World Habitat Day
• June (3 <sup>rd</sup> Sunday)	Father's Day	• October 4	World Animal Welfare Day
• June 7	World Food Safety Day	• October 8	Indian Air Force Day
• June 8	World Ocean Day, World Brain Tumour Day	• October 9	World Post Office Day
• June 12	Anti-Child Labor Day	• October 10	National Post Day; World Mental Health Day
• June 13	International Albinism Awareness Day	• October 11	National Girl Child Day
• June 14	World Blood Donor Day	• October 2 <sup>nd</sup> Thursday	World Sight Day
• June 15	World Wind Day	• October 13	UN International Day for Natural Disaster Reduction
• June 20	World Refugee Day	• October 14	World Standards Day
• June 21	International day of Yoga, World Music Day, World Hydrography Day	• October 15	World Students Day; World White Cane Day (guiding the blind)
• June 23	United Nations Public Service Day, International Olympic Day	• October 16	World Food Day
• June 26	International Day against Drug Abuse and Illicit Trafficking	• October 24	UN Day; World Development Information Day
• July 1	Doctor's Day	• October 30	World Thrift Day
• July 6	World Zoonoses Day	• October 31	National Unity Day
• July 11	World Population Day	• November 5	World tsumani Day
• July 17	World Day for international Justice	• November 7	National Cancer Awareness Day
• July 18	International Nelson Mandela Day	• November 9	Legal Services Day
• July 28	World Hepatitis Day	• November 14	Children's Day; Diabetes Day
• August (1 <sup>st</sup> Sunday)	International Friendship Day	• November 17	National Epilepsy Day
• August 6	Hiroshima Day	• November 20	Africa Industrialization Day
• August 9	Quit India Day, Nagasaki Day, Intl. Day of the World's Indigenous Peoples	• November 21	World Television Day
• August 15	Indian Independence Day	• November 29	International Day of Solidarity with Palestinian People
• August 15	Sanskrit Day	• December 1	World AIDS Day
• August 12	International Youth Day	• December 2	National Pollution Control
• August 19	Photography Day; World Humanitarian Day	• December 3	World Day of the Handicapped
• August 29	National Sport Day	• December 4	Indian Navy Day
• September 2	Coconut Day	• December 7	Indian Armed Forces Flag Day
• September 5	Teachers' Day	• December 10	Human Rights Day
• September 8	International Literacy Day	• December 11	International Mountain Day
• September 14	Hindi Diwas	• December 14	World Energy Conservation Day
• September 15	Engineers' Day; International Day of Democracy	• December 16	Vijay Diwas
• September 16	World Ozone Day; International day for preservation	• December 18	Minorities Rights Day (India)
• September 21	Alzheimer's Day; Day for Peace & Non-Violence (UN)	• December 22	National Mathematics Day
		• December 23	Kisan Divas (Farmer's Day) (India)
		• December 24	National Consumers Day
		• December 25	Christmas Day

# **IMPORTANT DANCE & FESTIVAL OF INDIAN STATES**

## **Dance Forms of India**

### **Major Classical Dance forms in India**

<b>Dance</b>	<b>State</b>	<b>Description</b>
Bharatnatyam	Tamil Nadu	It is a delightful combination of four elements i.e. expression, music, beats, and dance. The accompanying music in Bharatnatyam is classical Carnatic. The costumes are similar to Indian sarees with vibrant colours and made of Kanchipuram silk and Banaras silk.
Kathak	Uttar Pradesh	The word Kathak is originated from the word Katha which means storytelling. Traditionally this dance was more religious in nature, typically narrating the stories of Radha and Krishna. The dancers dance to the rhythm of tabla or pakhawaj.
Kathakali	Kerala	Kathakali means story play, hence the stories of Ramayana and Mahabharata act as a source for a lot of performances. This form of dance is known for its heavy, intense makeup and costumes.
Kuchipudi	Andhra Pradesh	It is a combination of speech, Abhinaya (mime) and pure dance. Kuchipudi performance is more like a dance drama where dancers play different roles based on the drama content.
Manipuri	Manipur	The main characteristics of this dance are colourful decoration and costumes, charming music, gentle and swaying petal-soft foot movements and delicacy of performance. This traditional dance is mainly inspired by the rich culture of Manipur.
Mohiniattam	Kerala	The word Mohiniattam derives its meaning from the word Mohini, which means beautiful women and 'attam' which means dance. Thus, this form of dance represents a beautiful feminine grace. These dances are based on love and emotion themes.
Odissi	Odisha	Performed by 'Maharis' or female temple servants, this dance form has a close association with the temples and temple sculptures. Odissi stands out from other forms of dances because of its Tribhangi posture, dealing with three body parts, i.e. head, bust, and torso.
Sattriya	Assam	It is an art which represents dance-drama performances with a unique combination of hand gestures, footwork, expressions, and body movements. Most of the themes of dance related to Ram and Sita or Krishna and Radha.

### **Major FolkDances of All Indian States**

<b>State</b>	<b>Folk Dance</b>	<b>State</b>	<b>Folk Dance</b>
● Andhra Pradesh & Telangana	1. Chhadi 2. Ghantamardala 3. Kuchipudi (Classical) 4. Kummi 5. Madhuri 6. Mohiniattam	3. Bihu 4. Canoe 5. Jhumura Hobjanai 6. Kaligopal 7. Khel Gopal 8. Maharas 9. Naga dance 10. Natpuja 11. Tabal Chongli	
State	<b>Folk Dance</b>	● Bihar	1. Bakho-Bakhain 2. Bidesia 3. Jata-Jatin 4. Jatra 5. Panwariya 6. Sama-Chakwa
● Arunachal Pradesh	7. Ottam Thedal 8. Siddhi 1. Mask dance (Mukhauta Nritya)		
● Assam	2. War dance 1. Bagurumba 2. Bichhua		

<ul style="list-style-type: none"> <li>● Chhattisgarh</li> <li>● Goa</li> <li>● Gujarat</li> <li>● Haryana</li> <li>● Himachal Pradesh</li> <li>● J &amp; K</li> <li>● Jharkhand</li> </ul>	<ol style="list-style-type: none"> <li>1. Goudi</li> <li>2. Jhumar</li> <li>3. Karma</li> <li>4. Dagla</li> <li>5. Diwari</li> <li>6. Mundari</li> <li>7. Navrani</li> <li>8. Pali</li> <li>9. Tapali</li> <li>1. Dakni</li> <li>2. Jhagor</li> <li>3. Khol</li> <li>4. Mandi</li> <li>1. Bhavai</li> <li>2. Dandiya Ras</li> <li>3. Garba</li> <li>4. Tippani Juriun</li> <li>1. Daph</li> <li>2. Dhamal</li> <li>3. Gagor</li> <li>4. Gugga</li> <li>5. Jhumar</li> <li>6. Khor</li> <li>7. Loor</li> <li>8. Phag Dance</li> <li>1. Chamba</li> <li>2. Chhapeli</li> <li>3. Chharhi</li> <li>4. Daf</li> <li>5. Dangi</li> <li>6. Dhaman</li> <li>7. Jhainta</li> <li>8. Jhali</li> <li>9. Jhora</li> <li>10. Mahasu</li> <li>11. Nati</li> <li>12. Stick dance</li> <li>13. Thali</li> <li>1. Damali</li> <li>2. Hikat</li> <li>3. kud Dandi nach</li> <li>4. Mandjas</li> <li>5. Rauf</li> <li>1. Bidesia</li> <li>2. Chhanu</li> <li>3. Danga</li> <li>4. Jat-Jatin</li> <li>5. Karma</li> <li>6. Sarahul</li> </ol>	<ul style="list-style-type: none"> <li>● Karnataka</li> <li>● Kerala</li> <li>● Madhya Pradesh</li> <li>● Maharashtra</li> <li>● Manipur</li> <li>● Meghalaya</li> <li>● Mizoram</li> <li>● Nagaland</li> </ul> <ol style="list-style-type: none"> <li>7. Sohrai</li> <li>1. Huttar</li> <li>2. Karga</li> <li>3. Kunitha</li> <li>4. Lambi</li> <li>5. Suggi</li> <li>6. Yakshagan</li> <li>1. Kaikottikali</li> <li>2. Kali Auttam</li> <li>3. Kathakali (Classical)</li> <li>4. Mohini-attam</li> <li>5. Ottam Thulal</li> <li>6. Tappatikali</li> <li>1. Matki</li> <li>2. Ahirai</li> <li>3. Badhai</li> <li>4. Baredi</li> <li>5. Bhagoria</li> <li>6. Gangaur</li> <li>7. Naurata</li> <li>1. Dahikala Dasavtar or Bohada</li> <li>2. Gafa</li> <li>3. Gouricha</li> <li>4. Koli</li> <li>5. Lavani</li> <li>6. Lezim</li> <li>7. Mauni</li> <li>8. Nakata</li> <li>9. Powara</li> <li>10.Tamasha</li> </ol>															
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## POPULATION CENSUS

### **A Brief on the Census 2011**

1. The population of the country as per the provisional figures of Census 2011 is 1210.19 million of which 623.7 million (51.54%) are males & 586.46 million (48.46%) are females.
2. Major highlights of the Census 2011 (Provisional figures) are as under:  
\* The population of India has increased by more than 181 million during the decade 2001-2011.
3. Percentage growth in 2001-2011 is

17.64; males 17.19&females 18.12.

4. \*Uttar Pradesh (199.5 million) is the most populous State in the country followed by Maharashtra with 112 million.

### **Some of the highlights**

- Slogan - Our census, Our Future
- India's 1st Census - 1872
- 2011 Census is - 15th Census
- Total Population - 1,21,01,93,422
- India's Rank in population - 2nd with 17.5% (1st China with 19%)
- Most Populous State - Uttar Pradesh

- Least Populous State - Sikkim
- Most Literate State - Kerala (93.9%)
- Least Literate State - Bihar (63.82%)
- National Sex Ratio - Female : Male (940 : 1000)
- Highest Sex Ratio (State) - Kerala (1084 : 1000)
- Lowest Sex Ratio (State) - Haryana
- Highest Sex Ratio (UT) - Puducherry
- Least Sex Ratio (UT) - Daman & Diu (618 : 1000)
- Literacy of Male - 82.14%
- Literacy of Female - 65.46%
- Population Growth Rate - 17.64%
- Highest fertility Rate - Meghalaya
- Most literate union territory - Lakshadweep (92.2%)
- Least literate Union Territory - Dadra Nagar & Haweli
- Most Literate District - Serechhip (Mizoram)
- Least Literate District - Dadra and Nagar & Haveli
- Highest Density of Population - Bihar (1102 sq.km)
- Lowest Density of Population - Arunachal Pradesh (17)
- Total number of districts - 640
- Highest Populous District - Thane (Mumbai)
- 100% Literacy District - Palakkad (Kerala)
- 100% Banking State - Kerala
- 100% Banking District - Palakkad (Kerala)
- Density of Population in India - 382 sq. km
- Increase in population (during 2001-2011) - 181 million

## AWARDS

### AWARDS & FIELDS

1. **International Gandhi Peace Prize:** For contributions towards social, economic & political transformation through non-violence & other Gandhian methods.
2. **Bharat Ratna:** Premier civilian award, to serve the nation.
3. **Padma Vibhushan:** Ranking wise the second award is the Padma Vibhushan in the Indian Republic. It awarded people from various fields including Govt. service to distinguish extraordinary service for the country.
4. **Padma Bhushan:** The Padma Bhushan is the highest civilian award third in rank in the Indian Republic.
5. **Padma Shri:** It is awarded to citizens of India for their distinguished contribution in several fields including Education, Literature, Arts, Science, Industry, Social Service, Medicine, Sports & Public Affairs.
6. **Dronacharya Award:** For brilliance in sports coaching.
7. **Dhyan Chand Award:** Highest lifetime achievement award in sports & games in India
8. **Rajiv Gandhi Khel Ratna:** Highest honor given for accomplishment in sports.
9. **Vyas Samman:** For literary in the Hindi language.

10. **Saraswati Samman:** For outstanding prose or poetry literary works in any Indian language listed in Schedule VIII of the Constitution of India.
11. **Param Vir Chakra:** Highest decoration Awarded for the most conspicuous bravery or some daring or prominent act of valour or self-sacrifice in the presence of the enemy on land, sea or air.
12. **Maha Vir Chakra:** Second highest decoration. It is awarded for acts of conspicuous gallantry in the presence of the enemy, whether on land, at sea or in the air.
13. **Vir Chakra:** It is the third in the order of awards for acts of gallantry in the face of the enemy on land, sea or air.
14. **Ashok Chakra:** Awarded for the most conspicuous bravery or some daring act of valour or self-sacrifice on land, at sea or in the air.
15. **Academy (Oscar) Awards:** Film (From 1929)
16. **Grammy Award:** Music (From 1958)
17. **Ramon Magasaysay Award:** Govt. (Public) Service, Social Service, Journalism, Literature, Communication & International Understanding Bourlog Award: Agriculture (From 1992)
18. **Grammy:** Music
19. **Pulitzer:** Journalism&Literature
20. **Arjun:** Sports
21. **Bowley:** Agriculture

- |   |  |
|---|--|
| 22. <b>Kalinga:</b> Science   | 25. <b>Abel:</b> Maths                           |
| 23. <b>Dhanwantri:</b> Medical Science  | 26. <b>Man Booker:</b> Literature                |
| 24. <b>Nobel Prize:</b> Peace, Literature, Economics, Physics, Chemistry, Medical Science | 27. <b>Vachspati Samman:</b> Sanskrit Literature |

## **AWARDS & RECOGNITION**

<b>Name of the Award</b>		<b>Winner</b>
<b>Awards for Literature/Journalism</b>		
1.	Veteran editor entered the Limca Book of Records for ‘films edited in the most number of languages’	Sreekar Prasad
2.	<b>Mathrubhumi Book of the Year award</b> for his translated book “Blue Is Like Blue”.	Vinod Kumar Shukla
3.	UK based Costa Children’s Award 2019	Jasbinder Bilan (‘Asha and the Spirit Bird.’)
4.	12th ‘Shakti Bhatt First Book Prize’	Tony Joseph
5.	27th Ezhuthachan Puraskaram 2019	Anand
6.	JCB prize for Literature	Madhuri Vijay (The Far Field)
7.	Dhaka Literature festival	Abhishek Sarkar and Rofiquzzaman Rony
8.	Tata Literature Live! Lifetime Achievement Award for 2019	Shanta Gokhale
9.	Tata Literature Live! Poet Laureate for 2019.	K. Satchidanandan
10.	28th Bihar Puraskar for 2018	Manisha Kulshreshtha (Swapnapash)
11.	2019 International Press Freedom Awards	Neha Dixit

<b>Country's Highest Honour Given</b>	
12.	<b>International Gandhi Awards for Leprosy</b> for the year 2019 to <b>Dr. N.S. Dharmashaktu</b> .
13.	Sanjana Kapoor received the prestigious French honour of ‘Chevalier dans l’Ordre des Arts et des Lettres (Knight of the Order of Arts and Letters).
14.	Noted archaeologist R. Nagaswamy honoured at the Silver Jubilee International Conference of Art in Dhaka by Bangladesh.
15.	Neeraj Sharma given the ‘Early Career Researcher of the Year award’ by the Australian government.
16.	Royal Aeronautical Society (RAeS) London conferred the Honorary Fellowship of the Society for the year 2019 to G Satheesh Reddy, Chairman DRDO.
17.	Russia has honoured NASA astronaut Nick Hague with one of its highest honours, “The Order of Courage” for his “courage and high professionalism” shown during life-threatening conditions.
18.	The Vice President was conferred ‘The Order of the Green Crescent’, the highest Civilian Honour of Comoros, by Azali Assoumani, President of Comoros in Moroni.

### **Film/Music Awards**

<b>19.</b>	Veteran actor <b>Manoj Kumar</b> honoured by the <b>World Book of Records, London</b> with the WBR Golden Era of Bollywood.
<b>20.</b>	Actor Waheeda Rehman honoured the Madhya Pradesh government's National Kishore Kumar Samman.
<b>21.</b>	Sucheta Satish won the 100 Global Child Prodigy Award for singing in most languages.
<b>22.</b>	18th Dhaka International Film Festival (DIFF): 'Castle of Dreams' directed by Reza Mirakarimi won the Best Film Award.
<b>23.</b>	'Joker' fame Joaquin Rafael Phoenix, bestowed with the PETA (People for the Ethical Treatment of Animals) 'Person of the Year' Award 2019.
<b>24.</b>	Nawazuddin Siddiqui awarded the prestigious Golden Dragon Award for his works in Hindi cinema at the Cardiff International Film Festival (CIFF ) 2019.
<b>25.</b>	A documentary on Real Kashmir Football Club bagged the prestigious British Academy of Film and Television Awards (BAFTA).
<b>26.</b>	Sand Artist Sudarsan Pattnaik who belongs to Odisha selected for the prestigious Italian Golden Sand Art Award 2019.
<b>27.</b>	Hollywood veteran and double Oscar winner Robert De Niro receive the SAG-AFTRA's highest tribute: the SAG Life Achievement Award.
<b>28.</b>	"Bhonsle" directed by Devashish Makhija won awards in the 'Best Screenplay' and 'Best Director' categories at the Asian Film Festival Barcelona.
<b>29.</b>	Sridevi and Rekha were conferred with the Akkineni Nageswara Rao National Award for 2018 and 2019 respectively.
<b>30.</b>	Singer Billie Eilish will be honoured as Billboard's 2019 Woman of the Year
<b>31.</b>	Short film from Kerala "Spirit of Kerala" has won the People's Choice Award at the recently concluded My Rode Reel film competition.
<b>32.</b>	Noted director and producer Priyadarshan, conferred the Madhya Pradesh government's National Kishore Kumar Samman for 2018-19 at a function in Khandwa, MP.
<b>33.</b>	Ranveer Singh and Alia Bhatt-starrer "Gully Boy" won the best film from India award in the regional finals at the Asian Academy Creative Awards ceremony.
<b>34.</b>	The Mohun Bagan Athletic Club has conferred life membership to Nobel laureate Abhijit Banerjee.

### **Other Awards Conferred**

<b>35.</b>	Forest Man of India <b>Jadav Payeng</b> will be awarded <b>Swami Vivekananda Karmayogi Award 2020</b> .
<b>36.</b>	TRaja Ravi Varma State Award conferred on veteran painter from Kalaburagi, Prof. J.S. Khanderao (2019) and senior artist from Mumbai, Vasudev Kamath (2020).
<b>37.</b>	Adline Castelino crowned as the winner of LIVA Miss Diva Universe 2020 competition. Aavriti Choudhary of Madhya Pradesh crowned as LIVA Miss Diva Supranational 2020.
<b>38.</b>	Dr Niti Kumar, a Senior Scientist from Division of Molecular Parasitology and Immunology, CSIR-CDRI, Lucknow will be honoured with the SERB Women Excellence Award-2020.
<b>39.</b>	Pullela Gopichand honour with Coaches lifetime achievement award by International Olympic Committee's (IOC).
<b>40.</b>	Indian feminist scholar, activist Gita Sen won the prestigious Dan David Prize 2020 under "present" category.
<b>41.</b>	Madhya Pradesh Minister for Women and Child Development Imarti Devi and Principal Secretary Anupam Rajan awarded for the implementation of Pradhan Mantri Matru Vandana Yojana in Madhya Pradesh.
<b>42.</b>	RBI Governor Shaktikanta Das named the 'Central Banker of the Year 2020' for the Asia-Pacific region by financial intelligence magazine The Banker.
<b>43.</b>	Aayushi Dholakia bagged the title of Miss Teen International 2019. She also won the title of Best in National Costume Award and Best in Speech Award.
<b>44.</b>	Famous Agricultural Scientist Dr M S Swaminathan was honoured as the first recipients 'Muppavarapu Venkaiah Naidu National Award for Excellence'.
<b>45.</b>	British Indian yoga boy Ishwar Sharma wins Global Child Prodigy Award.
<b>46.</b>	Puri, Odisha awarded for its initiatives for plastic waste management with the Swachhata Darpan Awards 2019.
<b>47.</b>	Sakya Singha Sen from National Chemical Laboratory (CSIR-NCL) Pune, awarded "Merck Young Scientist Award 2019" for doing remarkable research in chemical science.
<b>48.</b>	President Ram Nath Kovind presented the Pradhan Mantri Rashtriya Bal Puraskar 2020
<b>49.</b>	HealthSetGo CEO Priya Prakash wins Global Citizen Prize: Cisco Youth Leadership Award 2019 for her school health program that provides healthcare support to children.
<b>50.</b>	Uttarakhand, Disaster Mitigation and Management Centre (in the institution category) and Kumar Munnan Singh (individual category) selected for the Subhash Chandra Bose Aapda Prabandhan Puraskar 2020.

<b>51.</b>	The chairman of “The Hindu Group” N. Ram selected as the outstanding media person in a national award instituted by Kerala Media Academy.
<b>52.</b>	Dr. N Kumar, Vice-Chancellor of Tamil Nadu Agricultural University, conferred ‘Harit Ratna Award 2019’.
<b>53.</b>	Nobel laureate Abhijit Vinayak Banerjee conferred the honorary Doctor of Letters (D.Litt.) by Calcutta University at its annual convocation in Kolkata.
<b>54.</b>	Piyus Jaiswal was awarded the Global Bihar Excellence Award 2019.
<b>55.</b>	Lionel Messi won the Ballon d’Or award for the world’s best player for a record 6th time.
<b>56.</b>	Arun Jaitley former Finance Minister of India was bestowed with the Economic Times (ET) Lifetime Achievement Award for Public Service 2019.
<b>57.</b>	New Zealand cricket team awarded the Christopher Martin-Jenkins Spirit of Cricket award.
<b>58.</b>	National Florence Nightingale Awards 2019 at an event in Vigyan Bhawan, New Delhi. The award was given to Late Lini Sajeesh.
<b>59.</b>	Abu Dhabi (UAE) selected as the world’s leading Sports tourism Destination at the 26th edition of the World Travel Awards (WTA).
<b>60.</b>	Miss South Africa Zozibini Tunzi was crowned Miss Universe 2019 in Atlanta, US.
<b>61.</b>	Priyanka Chopra was honoured for her 20 years of work and contribution in cinema, at the Marrakech Film Festival.
<b>62.</b>	Odisha has won the ‘World Habitat Award’ for Jaga Mission which is also called Odisha Liveable Habitat Mission (OLHM).
<b>63.</b>	Tony-Ann Singh of Jamaica was announced as the winner of the Miss World 2019 beauty pageant.
<b>64.</b>	The state police of Gujarat were honoured with ‘President’s colours’.
<b>65.</b>	Union Territory of Jammu and Kashmir selected for the national award of Pradhan Mantri Gram Sadak Yojana (PMGSY).
<b>66.</b>	England cricketer Ben Stokes has been voted BBC Sports Personality of the Year 2019.
<b>67.</b>	Aditya K. of Kozhikode, Kerala become the 1st child from the State to bag the Bharat Award for bravery given away by the Indian Council for Child Welfare.
<b>68.</b>	India’s ophthalmologist Dr Santosh G Honavar become the 1st Indian to be conferred with the American Academy of Ophthalmology’s (AAO) highest award Life Achievement honour.
<b>69.</b>	Sara Damnjanovic from Serbia has been crowned ‘Miss Asia Global 2019’.
<b>70.</b>	Gulab Kothari has been chosen for the prestigious Raja Ram Mohan Roy Award, presented by the Press Council of India.
<b>71.</b>	Indian wrestler Bajrang Punia conferred the Indian Personality of the Year Award (Sports) at the Indo Arab Leaders Summit & Awards 2019 in Dubai.
<b>72.</b>	World powerlifting champion Mahant Gaurav Sharma was also honoured with Visionary Leaders of the Year (Sports) award.
<b>73.</b>	Indira Gandhi Prize for Peace, Disarmament and Development for 2019 will be conferred on renowned naturalist and broadcaster Sir David Attenborough
<b>74.</b>	India captain Virat Kohli was named People for the Ethical Treatment of Animals (PETA) India’s ‘Person of the Year for 2019’.
<b>75.</b>	Eliud Kipchoge, the first man to run a marathon in less than two hours, and 400 metres hurdles world champion Dalilah Muhammad won the World Athlete of the Year awards.
<b>76.</b>	Bangladesh wins Aga Khan Architecture Award.
<b>77.</b>	India’s first ‘Quality Ratna’ award to Suresh Krishna, Chairman, Sundram Fasteners Ltd.
<b>78.</b>	Odia women weightlifter Jhili Dalabhera receive the 27th Ekalabya Award for 2019.
<b>79.</b>	President Ram Nath Kovind presented the most effective Swachhta Ambassador award to Former Indian cricketer Sachin Tendulkar
<b>80.</b>	England all-rounder Ben Stokes voted Professional Cricketers’ Association player of the year at the Professional Cricketers’ Association awards.
<b>81.</b>	Human rights lawyer from Kyrgyzstan Azizbek Ashurov awarded the 2019 UN High Commissioner for Refugees (UNHCR) prestigious Nansen Award.
<b>82.</b>	Ramesh Pandey selected for the prestigious Asia Environmental Enforcement Award by the United Nations Environment Programme.
<b>83.</b>	Ashleigh Barty awarded Australian sport’s highest individual honour ‘The Don’ Award at the annual Sport Australia Hall of Fame.
<b>84.</b>	The 31st Indira Gandhi Award for National Integration for the years 2017 and 2018 awarded to the pioneer of the Chipko Movement Chandi Prasad Bhatt for his services in promoting and preserving the national integration.
<b>85.</b>	Barcelona captain Leo Messi received his 6th Golden Shoe as the top scorer in the European leagues.
<b>86.</b>	Vice President Venkaiyah Naidu presented the “Most Eminent Senior Citizen Award” to the scholar, legal luminary and former Attorney General of India K Parasaran on the occasion of Elder’s Day celebration.
<b>87.</b>	Jennifer Aniston to receive People’s Icon Award 2019 at the 2019 People’s Choice Awards.

# SPORTS

## OLYMPICS

- The Olympic Games were held for the first time by the Greeks in 776 BC on Mount Olympus, in honour of the Greek God, Zeus. They were stopped by a royal order of the Roman Emperor Theodosius in AD 394.
- These games were revived in 1894 by the efforts of a French Baron **Pierre de Coubertin** and the first modern Olympic Games were started in Athens the capital of Greece on 6th April, 1896. Separate winter Olympic Games began in 1924. Women have been participating in the Olympics since 1912.
- The Olympic Games are organised after every 4-years.

### Founder and Governing Body

- In 1894, Baron Pierre de Coubertin founded the International Olympic Committee (IOC) to govern the Olympic Movement (comprising International Sports Federations (ISF's), National Olympic Committees (NOCs) and Organising Committees for each specific games).
- IOC chooses the host city and the games to be contested organisation and funding is made by the host city.
- International Sports Federation (ISF) determines the qualification rules for each Olympic.
- The Head office of International Olympic Committee (IOC) is at **Lausanne** (Switzerland).

### Olympic Symbol

- It contains five rings or circles linked together to represent the sporting friendship of all people. Each ring is of a different colour i.e., blue, yellow, black, green and red. The rings are meant to represent five continents viz Africa (Black), America (Red), Asia (Yellow), Australia (Green) and Europe (Blue).

### Olympic Flag

- The Olympic Flag was created in 1913 at the suggestion of Baron Pierre de Coubertin. It was adopted in Paris June, 1914, but it was raised over an Olympic stadium for the first time at the Antwerp games (Belgium) in 1920. There is also a second Olympic Flag, which is used for the Winter games. These flags are made of white silk and contain five interwined rings of the Olympic Emblem.
- From left to right the rings are Blue (Europe), Yellow (Asia), Black (Africa), Red (America) and Green (Australia).

Atleast one of these colours is found on the flag of every country.

- The flag is 3 m long and 2 m wide. The emblem placed in the center is 2.06m by 60 cm.

### Olympic Motto

**Olympic Motto** ‘Citius, Altius, Fortius’ is the Latin motto meaning ‘Faster, **Higher** and Stronger’ composed by Father Didon in 1897. The motto was introduced in 1924 at the Olympic Games in Paris.

### Olympic Flame

The Olympic flame symbolises the continuity between ancient and modern games. It was at the Amsterdam Games in 1928 that for the first time an Olympic flame was ceremonially lighted and burned in a giant torch at the entrance of the stadium. The modern version of the flame was adopted in 1936 at the Berlin Games.

### Olympic Medals

Olympic champions are rewarded with medals and certificate. The winning athlete or sports persons receive a Gold Medal which, is 60 mm in diameter and 3 mm thick and is made of 92.5% silver plated with 6 gm of gold.

### Olympic Mascot

- The Olympic Mascot(s) is/ are a character, usually an animal native to the area or occasionally human figures, who represents the cultural heritage of the place, where the Olympic and Paralympic Games are taking place.
- Since the 1968, Winter Olympics in Grenoble, France the Olympic Games have had a mascot. The first major mascot in the Olympic Games was Misha in the 1980 Summer Olympics in Moscow. The 2016 summer Olympic's mascot is vinicius, a representation of Brazilian wildlife.

## Commonwealth Games

- The Commonwealth Games are a festival of sports of the Commonwealth countries. The first Commonwealth Games were held in 1930 in Hamilton, Canada.
- The 2010 Commonwealth Games were held in New Delhi, India.
- Since 1930, the games have been conducted every 4-years except for 1942 and 1946.
- The Commonwealth Games Federation (CGF) is the organisation, which is responsible for the direction and control of the Commonwealth Games.

- There are currently 53 members of the Commonwealth of Nations and 71 team participate in the games.
- 20th Commonwealth Games of 2014 were held in Glasgow (Scotland, UK).
- The 2018, Commonwealth Games will be held in Australia.

### **Asian Games**

- The Asian Games, also called the Asiad, are a multisport event held every 4-years among athletes from all over Asia.
- The games are regulated by the Olympic Council of Asia (OCA), under the supervision of the International Olympic Committee (IOC).
- The first Asian Games were held in 1951 in New Delhi (India). The 2014 Asian Games were held in Incheon, South Korea. 2018 Asian Games will be held in Jakarta (Indonesia).
- The AGF (Asian Games Federation) adopted 'Ever Onward', given by Pt Jawaharlal Nehru, as the motto of the Asian Games, which continues till today.
- The emblem is a bright full rising Sun with interlocking rings. The King of Patiala presented the Torch and the Flag for the first Asian Games and since then they have been carried' from country to country.

### **South Asian Federation (SAF) Games**

- Like the Commonwealth Games, the South Asian Federation (SAF) Games is a sports festival of South Asian countries. The governing body of these games is South Asian sports Council formed in 1983.
- The first South Asian Federation Games were held at Kathmandu (Nepal) in 1984. SAF Games, 2016 were held in India.
- The eight participating countries are India, Pakistan, Sri Lanka, Bangladesh, Nepal, Bhutan, Afghanistan and Maldives. The games form a part of the SAARC programme. The motto of the SAF Games is 'peace, prosperity and progress'.
- No SAF Game were staged in 1986 as it was the year of commonwealth and Asian Games.
- The SAF Games have been rechristened South Asian Games on 2nd April, 2004. Afghanistan joined the games in 2006.

### **Cricket**

- The first Cricket World Cup was organised in England in 1975. A

separate women's Cricket World Cup has been held every 4-years since 1973.

- The Cricket World Cup Tournament is organised by the International Cricket Council (ICC). The ICC was founded in 1909 and its headquarters is located in Dubai, United Arab Emirates.
- In 1877, the first Cricket Test Match was played in Melbourne between England and Australia.
- The first One Day International Cricket Match was played in the year 1971 between England and Australia in Melbourne.
- The Board of Control for Cricket in India (BCCI) was formed in 1927.

### **Football World Cup**

- The Football World Cup is organised by FIFA (Federation of International Football Association).
- The headquarters of FIFA is located in Zurich, Switzerland.
- The World Cup is called 'Jules Rimet Cup' named after the name of FIFA President Jules Rimet.
- The first Football World Cup was organised in Uruguay in 1930.
- In 1942 and 1946, the Football World Cup was not played because of the World War II.
- Brazil is the only nation to have participated in every World Cup so far.
- 20th FIFA World Cup 2014 held in Brazil. Germany defeated Argentina in the final. FIFA appoints Russia as host for 2018 World Cup and Qatar for 2022 World Cup.

### **Hockey World Cup**

- The Hockey World Cup is organised by the International Hockey Federation (FIH) once in 4-years. The headquarters of FIH is located in Lausanne, Switzerland. The first Hockey World Cup was organised in Barcelona (Spain) in 1971 and winner is Pakistan. Women's Hockey World Cup has been held since 1974.
- The 2010 Hockey World Cup was held in New Delhi and winner was Australia.
- The 13th Hockey World Cup (men's and women's edition both) were held in Hague (Netherlands) in 2014. Australia won the men's tournament after defeating Netherland. Netherland won the women's tournament after defeating Australia.
- The 14th Hockey World Cup will be held in India in 2018.

## Lawn Tennis

- It was invented in 1870 by Major Wing Field in Wales. Wimbledon championship started in 1877 for men only. For women it was introduced in 1884.
- The four Grand Slam tournaments are considered to be the most prestigious tennis tournaments in the world. They are held annually and include, in chronological order, the Australian Open, the French Open, Wimbledon and the US Open. Apart from the Olympic Games, Davis Cup, Fed Cup and Hopman Cup, they are the only tournaments regulated by the International Tennis Federation (ITF).
- The Association of Tennis Professionals or ATP was formed to protect the interests of male professional tennis players is now known as the ATP World Tour.

### Grand Slam Tournaments

Tournament	Date	Location	Surface	First Held
Australian Open	January	Melbourne	Hard (Plexicushion)	1905
French Open	May-June		Clay	1925
Wimbledon	June-July	London	Grass	1877
US Open	Aug.-Sept.	New York City	Hard (Deco Turf)	1881

## Table Tennis

Table Tennis was introduced in the Olympic Games in 1988 at Seoul (South Korea).

## Billiard

Cue sports also known as billiard sports, are a wide variety of games of skill generally played with cue stick, which is used to strike billiard balls, moving them around a cloth-covered billiards table bounded rubber cushions.

## Polo

Polo (Chowgan) is a team sport played on horseback, in which the objectives is to score goals against an opposing team. Sometimes called, 'The sport of kings' it was highly popularised by the British. It is not an Olympic sport.

## Wrestling

Wrestling is a form of combat sport involving grappling types techniques such as clinch fighting, throws and take downs, joint locks, pins and other grappling holds.

## Formula One (F1) Race

- Formula one, also known as Formula 1 or F1 and referred to officially as the FIA Formula One World Championship, is the highest class of single seater auto racing sanctioned by the Federation International Automobile (FIA).

- It was started in 1950.

- The first Formula One World Championship was won by Italian Giuseppe Farina in Alfa Romeo in 1950. The first race in India was held at the Buddha International Circuit in Greater Noida, UP (2011).

## Badminton

The modern name in 1873 of Badminton came from the Badminton House, the International Badminton Federation was established in 1934. the new name is Badminton World Federation.

## Cycling

- The Tour de France tournament is an annual bicycle race held in France and nearby countries. First staged in 1903, the race covers more than 3600 km and last three weeks. This is organised every year in month of July.
- The 2002 Summer Olympics will be the first, at which men and women compete in the same number of events in all cycling disciplines.

## Swimming

- Swimming is a water based sport governed by the Federation Internationale de Natation (FINA) and is formed in 1908. FINA is the International Federation (IF) recognised by the International Olympic Committee (IOC) for administering international competition in the aquatic sports.
- Its headquarters is at Lausanne, Switzerland.

## Shooting

- Shooting sports have been contested at every Summer Olympic Games since the birth of the modern Olympic movement at the 1896 Summer Olympics except at the 1904 and 1928 editions.

## Marathon

The marathon is a long-distance running event with an official distance of 42.195 km (26 miles and 385 yards), that is usually run as a road race.

The event was instituted in commemoration of the fabled run of the Greek Soldier Phedippides, a messenger from the Battle of Marathon to Athens.

## Specific Names of Playing Areas

Sport	Name of Playing Area	Sport	Name of Playing Area
Badminton	Court	Golf	Link, Green**
Baseball	Diamond	Lawn Tennis	Court
Boxing	Ring	Ice Skating	Rink
Cricket	Pitch*	Wrestling	Ring, Arena

\* Pitch in tact is the space between the wickets and not the entire cricket Held.

\*\* It is the area around the hole only.

## Important Cups and Trophies

Sport	Cup and Trophy
Cricket:	Irani Trophy, Dilip Trophy, Ranji Trophy, Vijay Hazare Trophy, Asia Cup, Deodhar Trophy, CK Naidu Trophy, Cooch-Behar Trophy, Gandhi-Mendela Series, the Ashes Series, etc
Football:	Durand Cup, Nizam Gold Cup, Rovers Cup, Sanjay Gold Cup, Santosh Trophy, Subroto Mukherjee Cup, Vittal Trophy, Nehru Gold Cup
Hockey:	Agha Khan Cup, Azlan Shah Cup, Nehru Trophy, Dhyanchand Trophy, Beighton Cup, Scindia Gold Cup, Modi Gold Cup, Indira Gandhi Gold Cup, Rangaswami Cup, Khan Abdul Gaffar Cup
Golf:	Canada Cup, Muthian Gold Cup, Ryder Cup, Walker Cup
Table Tennis:	Corbillion Cup (women), Jayalaxmi Cup (women), Swaythling Cup (men)
Lawn Tennis:	Davis Cup, Hamlet Cup, Australian Open, French Open, Wimbledon, US Open, Hopman Cup
Badminton:	Thomas Cup (men), Uber Cup (women), Narang Cup, All England Open
Boxing:	Aspy Adjania Trophy
Rowing:	Wollington Trophy
Bridge:	Ruia Trophy
Polo:	Ezra Cup, Winchester Cup, Radha Mohan Cup

## Important Sport Terms

Sport	Terms
Basketball :	Dunk, front court, lay up, held ball, pivot, rebound, steal
Cricket:	Bye, draw, googly, topspin, over throw, duck, hit wicket
Football:	Bend dribble, dissent, dummy, feint, free kick, header, red card, throwins
Hockey:	Bully, striking, circle, post back
Chess:	Castle, files, pawns, peices, promote, gambit, pawn
Boxing:	Jab, laying on knock, second out habbit punch, upper cut
Badminton:	Loab, let, drive, drop, love
Polo:	Chuker, bunker
Baseball:	Diamond, home run, put out, strike, ant-rubber.
Rifle	
Shooting:	Target, muzzle fulb, bulls eye
Wrestling:	Half, nelson, hold sager, rebuts
Golf:	Fore some, stymie, T, put hole, caddy, nib lick, iron, the green, bunkeer
Billiards:	Jigger, pot, break pot, in off, cans, bolting, long, hazard, cue
Swimming:	Breast stroke, twist, butterfly, crawl, spring board
Volley Ball :	Antennae, attack hit, libero, service, set-up, blocking, dribbling
Lawn Tennis:	Advantage, ace, dence, volley, foot foul, smash, grand-slam, slice, love
Table Tennis:	End line, flat hit, foil, service, phnholder grip, reverse, top-spin, couter-hitting, let

## Measurements of Sports Fields and Instruments

Cricket	Ball :	155.9 gm to 163 gm in weight
	Bat :	96.5 cm in length and 10.8 cm width (Maximum)

	<u>Pitch</u> : 20.12 m	<b>Chess</b>	64 Squares on chessboard
	<u>Length of the Stumps</u> : 71.1 cm (28 inch)		<u>Colour</u> : Black and White
	<u>Length of the Crease</u> : 1.22-1.83 (4 ft)		<u>Nos. of same colour chess</u> :16
<b>Football</b>	<u>Field</u> : 100 × 64 m to 110 × 75 m	<b>Baseball</b>	<u>Distance of each case</u> : 90 ft
<b>Hockey</b>	<u>Field</u> : 100 yards × 60 yards <u>Weight of the Ball</u> : 155-163 gm <u>Colour of the Ball</u> : White <u>Weight of Hockey Stick</u> :		<u>Base distance along with hypotenuse</u> : 127 ft
<b>Lawn Tennis</b>	538 gm-623 gm <u>Court</u> : 23.77 m × 8.23 m (Singles) <u>Ball</u> : 6.35 cm to 6.67 cm (in diameter) 56.7 gm to 59.53 gm (Weight)	<b>Boxing</b>	<u>Length and Width of the Ring</u> : 4.9 x 4.9m <sup>2</sup> to 6.1 × 6.1 m <sup>2</sup>
<b>Volley Ball</b>	<u>Field</u> : 18 m × 9 m <u>Net</u> : 1 m deep and 9.50 m long 2.43 m (for men) and 2.24 m for women (Height) <u>Ball</u> : Circumference 66 cm + 1 cm Weight 270 gm + 10 gm		
<b>Badminton</b>	<u>Court</u> : 13.40 m × 5.18 m or 44 × 20 ft. <u>Net</u> : Top 1.524 m in height from the floor <u>Shuttle</u> : 4.73 to 5.50 gm in weight and shall have 14 to 16 feathers fixed in Court		
<b>Kabaddi</b>	<u>Field</u> : 13m×10m (According to Kabaddi Federation of India)		
<b>Kho-Kho</b>	<u>Field</u> : 34×16m		
<b>Derby Course</b>	<u>Length</u> : 1.5 miles		
<b>Marathon Race</b>	<u>Length</u> : 26 miles, 385 yards		
<b>Polo</b>	<u>Field Length</u> : 300 yards <u>Field Width</u> : 150 yards <u>Distance between the Goals</u> : 250 yards <u>Distance between the Goal post</u> : 8 yards		

### Upcoming Important Sport Events

Summer Olympics	Japan (2020); Paris (2024), Los Angles (2028)
Winter Olympics	Pyeong Chang, South Korea (2018); Beijing China (2022)
Common Wealth Games	Queensland, Australia (2018); London (2022)
Asian Games	Indonesia (2018); Hangzhou, China (2022)
FIFA	Russia (2018); Qatar (2022)
Common Wealth Youth Games	Bahamas (2017); Belfast (2021)
Common Wealth Weightlifting Championship	Lima, Peru (2018)
Men Hockey World Cup	2018 (India)
Women Hockey World Cup	2018 (London)
ICC Women Cricket World Cup	2021 (New Zealand)
ICC Men Cricket World Cup	2019 (England); 2023 (India)
FIFA (Women) World Cup	2019 (France) → Dare to Shine
ITTF Table Tennis World Cup	2018 (London)

### Important Sports Events

#### **ICC Cricket World Cup: (ODI) :**

1. England – 2019 | 2. India– 2023

#### **T20 World Cup:** Australia - 2020.

Test Championship: Lords, UK (2021)

#### **FIFA (Football) World Cup venue:**

2018: Russia | 2022: Qatar

#### **Commonwealth Games venues:**

2018 – Gold Coast (Australia).

#### **2022– Birmingham (England)**

#### **Olympics Games venues:**

- ✓ 2016 Summer: Rio de Janeiro (Brazil)
- ✓ 2018 winter: Pyeongchang (South Korea)
- ✓ 2020 summer: Tokyo (Japan)
- ✓ 2022 Winter: Beijing (China)
- ✓ 2024 Summer: Paris (France)

#### **Asian Games host cities:**

1. 2014: Incheon (South Korea)
2. 2018: Jakarta, Indonesia
3. 2022: Hangzhou, China

## **: Source of the Book :**

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