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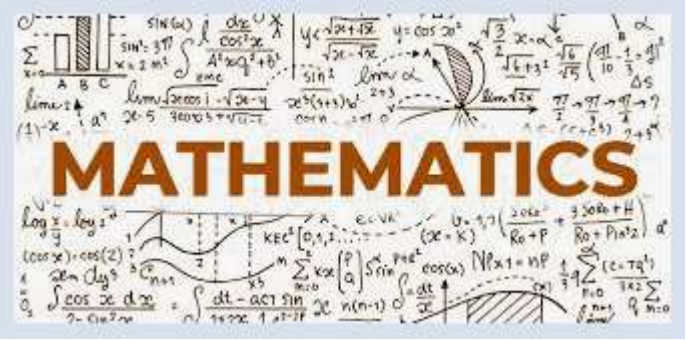
CLASS: X



SESSION: 2024-25

CHAPTER WISE MCQ

CHAPTER 1 : REAL NUMBERS

S.No.	QUESTIONS
1	The prime factorisation of natural number 288 is: (a) $2^5 \times 3^2$ (b) $2^4 \times 3^2$ (c) $2^5 \times 3^5$ (d) $2^5 \times 3^3$
2	If the HCF of 360 and 64 is 8,then their LCM is: (a)2880 (b)2530 (c)672 (d)2780
3	If two positive integers A and B can be expressed as $A = xy^3$ and $B = x^4y^2z$; x, y being prime numbers then HCF (A, B) is : (a) x^4y^3 (b) x^4y^2z (c) xy^2z (d) xy^2
4	The LCM of two numbers is 1200. Which of the following cannot be their HCF? (a)600 (b)500 (c)400 (d)200
5	If HCF (26, 169) = 13, then LCM (26, 169) = ? (a)26 (b)52 (c)338 (d)13
6	An army contingent of 616 members is to march behind an army band of 32 members in a parade. The two groups are to march in the same number of columns. What is the maximum number of columns in which they can march? (a)5 (b)6 (c)7 (d)8
7	The HCF and LCM of 12, 21, 15 respectively are : (a)3,420 (b)3,515 (c)4,420 (d)4,525
8	The ratio of LCM and HCF of the least composite number and the least prime number is : (a)3:2 (b)2:7 (c)2:1 (d)1:2
9	If LCM (x, 18) = 36 and HCF (x, 18) = 2, then x = (a)2 (b)3 (c)4 (d)6
10	If $(a \times 5)^n$ ends with the digit zero for every natural number n, then a is (a)a prime number (b)an even number (c)an odd number (d)none of these
11	There are 312, 260 and 156 students in class X, XI and XII respectively. Buses are to be hired to take these students to a picnic. Find the maximum number of students who can sit in a bus if each bus takes equal number of students: (a) 34 (b)52 (c)48 (d)63
12	Three bells ring at intervals of 4, 7 and 14 minutes. All the three rang at 7 AM. When will they ring together again? (a)7:28 AM (b)7:54 AM (c)7:32AM (d)7:40AM

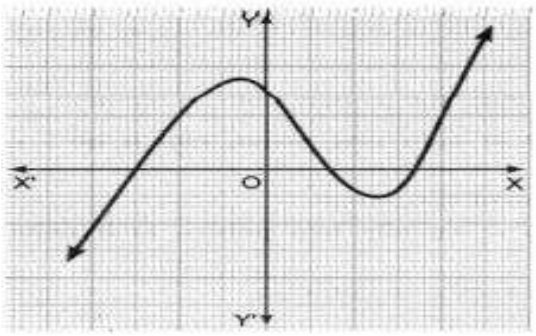
13	The product of a non-zero rational number and an irrational number is (a)always rational (b)always irrational (c)rational or irrational (d)always one
14	The smallest irrational number by which $\sqrt{18}$ should be multiplied so as to get a rational number is (a) $\sqrt{3}$ (b) 2 (c) $\sqrt{2}$ (d) $\sqrt{18}$
15	If two positive integers a and b are written as $a = p^3q^2$ and $b = pq^3$; p, q are prime numbers, then HCF (a, b) is: (a) pq^2 (b)pq (c) p^3q^3 (d) p^2q^2
16	On a morning walk, three persons step off together and their steps measure 40 cm, 42 cm and 45 cm, respectively. What is the minimum distance each should walk so that each can cover the same distance in complete steps? (a)2540 (b)2560 (c)2650 (d)2520
17	Three farmers have 490 kg, 588 kg and 882 kg of wheat respectively. Find the maximum capacity of a bag so that the wheat can be packed in exact number of bags (a)98 (b)290 (c)350 (d)450
18	6×5×4×3×2×1+5 is an example of : (a)prime number (b)composite number (c)irrational number (d)none of the above
19	L.C.M of two numbers is 60 times of their H.C.F. Sum of H.C.F and L.C.M is 366. If one number is 72, then find the other number. (a)60 (b)20 (c)30 (d)120
20	Two numbers are in the ratio 15:11 their HCF is 13 and LCM is 2145 then find the number. (a)205,132 (b)175,305 (c)195,143 (d)230,155
21	The LCM of the two numbers is 9 times their HCF. The sum of LCM and HCF is 500. Find their HCF. (a)50 (b)70 (c)90 (d)40
	(QUE.22 TO 30) *Direction:* In the following questions, a statement of Assertion (A) is followed by a statement of Reason (R). Mark the correct choice as: (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A). (b) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).

	(c) Assertion (A) is true but Reason (R) is false. (d) Assertion (A) is false but Reason (R) is true.
22	**Assertion:** The H.C.F. of two numbers is 16 and their product is 3072. Then their L.C.M. = 162. **Reason:** If a and b are two positive integers, then H.C.F. × L.C.M. = a × b.
23	**Assertion: '**2' is an example of a rational number. **Reason:** The square roots of all positive integers are irrational numbers.
24	**Assertion:** If the HCF of two numbers is 5 and their product is 150, then their LCM is 30. **Reason:** For any two positive integers p and q, HCF (p, q) + LCM (p, q) = p × q
25	**Assertion:** (18, 25) is a pair of co-primes. **Reason:** Pair of co-prime has a common factor 2.
26	**Assertion:** $\sqrt{x}$ is an irrational number, where x is a prime number. **Reason:** Square root of any prime number is an irrational number.
27	**Assertion: 3 x 5 x 7 + 7 is a composite number.** **Reason:** A composite number has factors one, itself and any other natural number.
28	**Assertion:** $(2-\sqrt{5})$ is an irrational number. **Reason:** The sum or difference of a rational and an irrational number is irrational.
29	**Assertion: 12^n** ends with the digit zero, where n is any natural number. **Reason:** Any number ends with digit zero, if its prime factor is of the form $2^m \times 5^n$, where m and n are natural numbers.
30	**Assertion: HCF of (11,17) is 1.** Reason: If p and q are prime then HCF of (p,q) is always 1.

ANSWERS OF CHAPTER 1 (REAL NUMBERS)

Q. NO.	QUESTION
1	(a) $2^5 \times 3^2$
2	(a)2880
3	(d) xy^2
4	(b)500
5	(c)338
6	(d)8
7	(a)3,420
8	(c)2:1
9	(c)4
10	(b)an even number
11	(b)52
12	(a)7:28 AM
13	(b)always irrational
14	(c) $\sqrt{2}$
15	(a) pq^2
16	(d)2520
17	(a)98
18	(b)composite number
19	(d)120
20	(c)195,143
21	(a)50
22	(d)
23	(c)
24	(c)
25	(c)
26	(a)
27	(a)
28	(a)
29	(d)
30	(a)

CHAPTER 2 - **POLYNOMIALS**

SN	MULTIPLE CHOICE QUESTIONS (MCQ- 30 QUESTIONS)
1	Which of the following is not a polynomial? (a)$\sqrt{3}\,x^3 - 2x - \sqrt{3}$ (b) $x + \frac{1}{x}$ (c) $7x^2 + 5x - \sqrt{2}$ (d) 5
2	Which are the zeroes of $p(x) = 6x^2 - 7x - 3$ (a) 5, –2 (b) –5, 2 (c) –5, –2 (d) none of these
3	The number of zeroes of the polynomial from the graph is (a) 0 (b) 1 (c) 2 (d) 3 
4	Find the quadratic polynomial whose zeros are -3 and 4. (a) $x^2 - 7x - 12$ (b) $x^2 + x + 12$ (c)$x^2 - x - 12$. (d) $x^2 + 3x - 4$
5	Which are the zeroes of $p(x) = x^2 - 8x + 15$ (a) 5, –2 (b) –5, 2 (c) 5,3 (d) none of these
6	Find the sum and product of the zeroes of polynomial $x^2 - 3x + 5$ (a) -3,5 (b) 2,5 (c) 3,5 (d) -3,2
7	If one of the zeroes of quadratic polynomial $(k+3)x^2 + 2kx + 6$ is -3 ,then find value of k. (a) 10 (b) -11 (c) 11 (d) 13
8	A quadratic polynomial whose sum and product of zeroes are –5 and 6 is (a) $x^2 - 5x - 6$ (b) $x^2 + 5x - 6$ (c) $x^2 + 5x + 6$ (d) none of the above.
9	If the product of the zeroes of the quadratic polynomial $3x^2 + 5x + k$ is $-\frac{2}{3}$, then the value of k is (a) -3 (b) -2 (c) 2 (d) 3
10	If one zero of the polynomial $6x^2 + 37x - (k - 2)$ is reciprocal of the other, then, what is the value of k? (a) 4 (b) -6 (c) 6 (d) -4

11	The zeroes of the polynomial $p(x) = x^2 + 4x + 3$ are given by (a) 1,3 (b) -1,3 (c) 1, -3 (d) -1, -3
12	If α and β are the zeroes of the polynomial $f(x) = px^2 - 2x + 3p$ and $\alpha + \beta = \alpha\beta$ then the value of p (a) $-\frac{2}{3}$ (b) $\frac{2}{3}$ (c) $\frac{1}{3}$ (d) $-\frac{1}{3}$
13	The zeroes of the quadratic polynomial $f(x) = x^2 + 99x + 127$ are (a) both negative (b) both positive (c) both equal (d) none
14	The maximum number of zeroes a cubic polynomial can have, is (a) 1 (b) 4 (c) 2 (d) 3
15	If α and β are the zeroes of the polynomial $f(x) = x^2 - ax - b$, then the value of $\alpha^2 + \beta^2$ is (a) $a^2 - 2b$ (b) $a^2 + 2b$ (c) $a^2 - b$ (d) $a^2 + b$
16	The number of polynomials having zeroes -3 and 5 is (a) 1 (b) 2 (c) 3 (d) more than 3
17	If $x+ 2$ is factor of $x^2 + ax + 2b$ and $a + b = 4$, then (a) a = 1, b = 3 (b) a = 3, b = 1 (c) a = -1, b = 5 (d) a = 5, b = -1
18	If α and β are the zeroes of the polynomial $f(x) = 4x^2 - 3x - 7$, then the value of $\frac{1}{\alpha} + \frac{1}{\beta}$ is (a) $\frac{7}{3}$ (b) $-\frac{7}{3}$ (c) $\frac{3}{7}$ (d) $-\frac{3}{7}$
19	If α and β are the zeroes of the polynomial $f(x) = x^2 - ax - b$, then the value of $\alpha^2 + \beta^2$ (a) $a^2 - 2b$ (b) $a^2 + 2b$ (c) $b^2 - 2a$ (d) $b^2 + 2a$
20	A quadratic polynomial, the sum of whose zeroes is - 5 and their product is 6, is (a) $x^2 + 5x + 6$ (b) $x^2 - 5x + 6$ (c) $x^2 - 5x - 6$ (d) $-x^2 + 5x + 6$
21	If the zeroes of the quadratic polynomial $x^2 + (a + 1) x + b$ are 2 and –3, then (a) a = –7, b = –1 (b) a = 5, b = –1 (c) a = 2, b = – 6 (d) a = 0, b = – 6
22	If one zero of the quadratic polynomial $x^2 + 3x + k$ is 2, then the value of k is (a) 10 (b) –10 (c) 5 (d) –5
23	If 2 and $\frac{1}{2}$ are two zeroes of $px^2 + 5x + r$, then (a) p = r = 2 (b) p = r = - 2 (c) p = 2, r = 2 (d) p = -2, r = 2
24	What should be subtracted from the polynomial $x^2 - 16x + 30$, so that 15 is the zero of the resulting polynomial? (a) 30 (b) 14 (c) 15 (d) 15

	ASSERTION -REASON BASED MCQs Each of the following questions contains STATEMENT-1 (A) and STATEMENT-2 (Reason) and has following four choices (a), (b), (c) and (d), only one of which is the correct answer. Mark the correct choice. (a) Statement-1 is true, Statement-2 is true; Statement-2 is a correct explanation for Statement-1. (b) Statement-1 is true, Statement-2 is true; Statement-2 is not a correct explanation for Statement-1. (c) Statement-1 is true, Statement-2 is false (d) Statement-1 is false, Statement-2 is true.
25	Statement-1 (A): The polynomial $f(x) = x^2 - 2x + 2$ has two real zeros. Statement-2 (R): A quadratic polynomial can have at most two real zeroes.
26	Statement-1 (A): A quadratic polynomial having $\frac{1}{2}$ and $\frac{1}{3}$ as its zeroes is $6x^2 - 5x + 1$ Statement-2 (R): Quadratic polynomial having α and β as zeroes are given by $f(x) = k\{x^2 - (\alpha + \beta)x + \alpha\beta\}$ where k is a non-zero constant.
27	Statement-1 (A): If one root of the quadratic polynomial $f(x) = (k-1)x^2 – 10x + 3$, $k \neq 1$ is reciprocal of the other, then k = 4 Statement-2 (R): The product of roots of the quadratic polynomial $ax^2 + bx + c$, $a \neq 0$ is $\frac{a}{c}$
28	Statement-1 (A): If α and β are zeroes of the quadratic polynomial $x^2 + 7x + 12$, then $\frac{12}{\alpha} + \frac{12}{\beta} - 12\alpha\beta = 395$ Statement-2(R): If α and β are zeroes of the quadratic polynomial $ax^2 + bx + c$, then $\alpha + \beta = -\frac{b}{a}$ and $\alpha\beta = \frac{c}{a}$
29	Statement-1 (A): If α, β and Υ are zeroes of the polynomial $6x^3 + 3x^2 – 5x + 1$, then $\alpha^{-1} + \beta^{-1} + \Upsilon^{-1} = 5$ Statement-2(R): If α, β and Υ are zeroes of the cubic polynomial $ax^3 + bx^2 + cx + d$, then $\alpha + \beta + \Upsilon = -\frac{b}{a}$
30	Statement-1 (A): The polynomial $p(x) = x^2 + 3x + 3$ has two real zeroes. Statement-2(R): A quadratic polynomial can have at most two real zeroes.

CHAPTER: - 3	PAIR OF LINEAR EQUATION IN TWO VARIABLES

Q1.	The value of K for which the system of equation kx – y = 2, and 6x - 2y = 3 has a unique solution is.		
(A)	Not equal to 3	(B)	Not equal to (-3)
(C)	Not equal to 0	(D)	Not equal to (1)
Q2.	If the system of equations kx – 5y = 2 and 4x + my = 10 has infinitely many solution then the value of k and m are.		
(A)	k = $\frac{4}{5}$ and m = - 25	(B)	k = $\frac{5}{4}$ and m = -25
(C)	k = $\frac{5}{4}$ and m = 25	(D)	k = $\frac{-5}{4}$ and m = 25
Q3.	8 chairs and 5 tables cost Rs 10,500, while 5 chairs and 3 tables cost Rs 6,450. The cost of each chair will be.		
(A)	750	(B)	600
(C)	850	(D)	900
Q4.	The pair of linear equation 3x + 5y = 3 and 6x + ky = 8 do not have a solution, if k is		
(A)	5	(B)	10
(C)	15	(D)	20
Q5.	The pair of equation x = a and y = b graphically represents the lines which are.		
(A)	Parallel lines	(B)	Intersecting at (a, b)
(C)	Coincident lines	(D)	Intersecting at (b, a)
Q6.	The value of c for which the pair of equation cx – y = 2 and 6x – 2y = 3 will have no solution.		
(A)	3	(B)	-3
(C)	-12	(D)	No value
Q7.	The pair of equation 5x -15 y = 8 and 3x - 9y = $\frac{24}{3}$ has.		
(A)	Infinite solution	(B)	Unique solution
(C)	No solution	(D)	Two solution
Q8.	19x – 17y = 55 and 17x -19y = 53 then the value of (x – y) is.		
(A)	$\frac{1}{3}$	(B)	-3
(C)	3	(D)	5

Q9.	If bx + ay = $a^2 + b^2$ and ax – by = 0, then the value of (x – y) .		
(A)	a - b	(B)	b – a
(C)	$a^2 - b^2$	(D)	$b^2 + a^2$
Q10.	If 2x + 3y = 0 and 4x – 3y = 0 then the value of (x + y) is .		
(A)	0	(B)	-1
(C)	1	(D)	2
Q11.	If (6, k) is a solution of equation 3x + y – 22 = 0 then the value of k is.		
(A)	4	(B)	- 4
(C)	3	(D)	- 3
Q12.	The father's age is six times his son's age. Four years hence, the age of the father will be four times his son's age. The present ages, in years, of the son and the father are, respectively.		
(A)	4 and 24	(B)	5 and 30
(C)	6 and 36	(D)	3 and 24
Q13.	Aruna has only Re 1 and Rs 2 coins with her. If the total number of coins that she has is 50 and the amount of money with her is Rs 75, then the number of Re 1 and Rs 2 coins are, respectively.		
(A)	35 and 15	(B)	35 and 20
(C)	15 and 35	(D)	25 and 25
Q14.	The sum of the digits of a two digit number is 9. If 27 is added to it, the digits of the numbers get reversed. The number is.		
(A)	36	(B)	72
(C)	63	(D)	25
Q15.	If x = a, y = b is the solution of the equations x – y = 2 and x + y = 4, then the values of a and b are, respectively.		
(A)	3 and 5	(B)	5 and 3
(C)	3 and 1	(D)	-1 and -3
Q16.	The value of k for which the system of equations x + 2y = 3 and 5x + ky + 7 = 0 has no solution is.		
(A)	10	(B)	6
(C)	3	(D)	1
Q17.	Sum of two numbers is 35 and their difference is 13, then the numbers are.		
(A)	24 and 12	(B)	24 and 11
(C)	12 and 11	(D)	None of these

Q18.	A two-digit number is 4 more than 6 times the sum of its digits. If 18 is subtracted from the number, the digits are reversed, then the number is.		
(A)	36	(B)	46
(C)	64	(D)	None of these
Q19.	Seven times a two-digit number is equal to four times the number obtained by reversing the order of its digit. If the difference between the digits is 3, then the number is.		
(A)	36	(B)	33
(C)	66	(D)	None of these
Q20.	Five years ago, A was thrice as old as B and ten years later A shall be twice as old as B, then the present age of A is.		
(A)	20	(B)	50
(C)	30	(D)	None of these
Q21.	If $2x - 3y = 7$ and $(a + b)x - (a + b - 3)y = 4a + b$ have an infinite number of solutions, then.		
(A)	$a = 5, \quad b = 1$	(B)	$a = -5, \quad b = 1$
(C)	$a = 5, b = -1$	(D)	$a = -5, b = -1$
Q22.	Rs. 4900 were divided among 150 children. If each girl gets Rs. 50 and a boy gets Rs. 25, then the number of boys is:		
(A)	100	(B)	102
(C)	104	(D)	105
Q23.	Two numbers are in the ratio 5:6 if 8 is subtracted from each of the numbers, the ratio becomes 4:5. The two numbers.		
(A)	10, 12	(B)	20, 24
(C)	30, 36	(D)	40, 48
Q24.	The solution of the linear pair $px + qy = p - q$ and $qx - py = p + q$ is .		
(A)	$x = 1, \quad y = 1$	(B)	$x = 1, \quad y = -1$
(C)	$x = -1, y = 1$	(D)	$x = -1, y = -1$
Q25.	If $2x - 3y = 7$ and $(a + b)x - (a + b - 3)y = 4a + b$ represent coincident lines, then a and b satisfy the equation		
(A)	$a + 5b = 0$	(B)	$5a + b = 0$
(C)	$a - 5b = 0$	(D)	$5a - b = 0$

Q26.	The perimeter of a rectangular garden is 180 metres. If the length of the garden is 10 metres more than its width, what will be the area of the garden ?		
(A)	40 m	(B)	50 m
(C)	50 sq m	(D)	2000 sq m
Q27.	If the system of equations $3x + y = 1$ and $(2k-1)x + (k-1)y = 2k+1$ is inconsistent, then k equals to.		
(A)	-1	(B)	0
(C)	1	(D)	2
Q28.	If one equation of a pair of dependent linear equations is $-3x + 5y - 2 = 0$. The second equation will be:		
(A)	$-6x + 10y - 4 = 0$	(B)	$6x - 10y - 4 = 0$
(C)	$6x + 10y - 4 = 0$	(D)	$-6x + 10y + 4 = 0$
Q29.	A fraction becomes $\frac{1}{3}$ when 1 is subtracted from the numerator and it becomes $\frac{1}{4}$ when 8 is added to its denominator. The fraction obtained is:		
(A)	$\frac{3}{12}$	(B)	$\frac{4}{12}$
(C)	$\frac{5}{12}$	(D)	$\frac{7}{12}$
Q30.	The angles of cyclic quadrilaterals ABCD are: $A = (6x+10)°$, $B = (5x)°$, $C = (x+y)°$ and $D = (3y-10)°$. The value of x and y is:		
(A)	$x = 20°$ and $y = 10°$	(B)	$x = 20°$ and $y = 30°$
(C)	$x = 44°$ and $y = 15°$	(D)	$x = 15°$ and $y = 15°$

ANSWERS

1	(A)	Not equal to 3	2	(A)	k = $\frac{4}{5}$ and m = - 25	3	(A)	750
4	(B)	10	5	(B)	Intersecting at (a, b)	6	(A)	3
7	(C)	No solution	8	(C)	3	9	(B)	b - a
10	(A)	0	11	(A)	4	12	(C)	6 and 36
13	(D)	25 and 25	14	(A)	36	15	(C)	3 and 1
16	(A)	10	17	(B)	24 and 11	18	(C)	64
19	(A)	36	20	(B)	50	21	(D)	a = -5, b = -1
22	(C)	104	23	(D)	40, 48	24	(B)	x = 1, y = -1
25	(C)	a – 5b = 0	26	(D)	2000 Sq m	27	(D)	2
28	(A)	- 6x + 10y – 4 = 0	29	(C)	$\frac{5}{12}$	30	(B)	x = 20° and y = 30°

	CHAPTER 4: QUADRATIC EQUATIONS			
1	Which one of the following is not a quadratic equation?			
	(a) $(x + 2)^2 = 2(x + 3)$		(b) $x^2 + 3x = (–1)\ (1 – 3x)^2$	
	(c) $(x + 2)\ (x – 1) = x^2 – 2x – 3$		(d) $x^3 – x^2 + 2x + 1 = (x + 1)^3$	
2	Which of the following equations has 2 as a root?			
	(a) $x^2 – 4x + 5 = 0$		(b) $x^2 + 3x – 12 = 0$	
	(c) $2x^2 – 7x + 6 = 0$		(d) $3x^2 – 6x – 2 = 0$	
3	If $\frac{1}{2}$ is a root of the equation $x^2 + kx – \frac{5}{4} = 0$, then the value of k is			
	(a) 2	(b) -2	(c) $\frac{1}{4}$	(d) $\frac{1}{2}$
4	Which of the following equations has the sum of its roots as 3?			
	(a) $2x^2 – 3x + 6 = 0$		(b) $–x^2 + 3x – 3 = 0$	
	(c) $\sqrt{2}\ x^2 – \frac{3}{\sqrt{2}}\ x + 1 = 0$		(d) $3x^2 – 3x + 3 = 0$	
5	Values of k for which the quadratic equation $2x^2 – kx + k = 0$ has equal roots is			
	(a) 0 Only	(b) 4 Only	(c) 8 Only	(d) 0 and 8
6	The quadratic equation $2x^2 – \sqrt{5}x + 1 = 0$ has			
	(a) two distinct real roots		(b) two equal real roots	
	(c) no real roots		(d) more than 2 real roots	
7	Which of the following equations has two distinct real roots?			
	(a) $2x^2 –3\sqrt{2}\ x + \frac{9}{4} = 0$		(b) $x^2 + x – 5 = 0$	
	(c) $x^2 + 3x + 2\sqrt{2} = 0$		(d) $5x^2 – 3x + 1 = 0$	
8	Which of the following equations has no real roots?			
	(a) $x^2 – 4x + 3\sqrt{2} = 0$		(b) $x^2 + 4x - 3\sqrt{2} = 0$	
	(c) $x^2 – 4x - 3\sqrt{2} = 0$		(d) $3x^2 + 4\sqrt{3}\ x + 4 = 0$	

9	The discriminant of the quadratic equation $3\sqrt{3}\ x^2 + 10x + \sqrt{3} = 0$ is			
	(a) 8	(b) 64	(c) $\frac{-1}{3\sqrt{3}}$	(d) $-\sqrt{3}$
10	A sum of ₹4000 was divided among x persons. Had there been 10 more persons, each would have got ₹80 less. Which of the following represents the above situation?			
	(a) $x^2 + 10x - 500 = 0$		(b) $8x^2 + 10x - 400 = 0$	
	(c) $x^2 + 10x + 500 = 0$		(d) $8x^2 + 10x + 400 = 0$	
11	The product of two consecutive integers is equal to 6 times the sum of the two integers. If the smaller integer is x, which of the following equations represent the above situation?			
	(a) $x^2 + 11x + 6 = 0$		(b) $x^2 - 11x - 6 = 0$	
	(c) $x^2 + 11x - 6 = 0$		(d) $x^2 - 11x + 6 = 0$	
12	Consider the equation $kx^2 + 2x = c\ (2x^2 + b)$ For the equation to be quadratic, which of these cannot be the value of k?			
	(a) c	(b) 2c	(c) 3c	(d) 2c + 2b
13	What is the smallest positive integer value of k such that the roots of the equation $x^2 - 9x + 18 + k = 0$ can be calculated by factoring the equation?			
	(a) 1	(b) 2	(c) 3	(d) 4
14	Rahul follows the below steps to find the roots of the equation $3x^2 - 11x - 20 = 0$, by splitting the middle term. Step 1: $3x^2 - 11x - 20 = 0$ Step 2: $3x^2 - 15x + 4x - 20 = 0$ Step 3: $3x\ (x - 5) + 4(x - 5) = 0$ Step 4: $(3x - 4)\ (x - 5) = 0$ Step 5: $x = \frac{4}{3}\ and\ 5$ In which step did Rahul make the first error?			
	(a) Step 2	(b) Step 3	(c) Step 4	(d) Step 5
15	The roots of $ax^2 + bx + c = 0$, $a \neq 0$ are real and unequal. Which of these is true about the value of discriminant, D?			
	(a) $D < 0$	(b) $D > 0$	(c) $D = 0$	(d) $D \leq 0$

16	Consider the equation $px^2 + qx + r = 0$. Which conditions are sufficient to conclude that the equation have real roots?			
	(a) p>0, r<0	(b) p>0, r>0	(c) p>0, q>0	(d) p>0, q<0
17	For what value of k, the quadratic equation $3x^2 + 2kx + 27 = 0$ has equal real roots?			
	(a) $k = \pm 3$	(b) $k = \pm 9$	(c) $k = \pm 6$	(d) $k = \pm 4$
18	If the equation x^2 -mx + 1 = 0 does not possess real roots, then			
	(a) $-3 < m < 3$	(b) $-2 < m < 2$	(c) $m > 2$	(d) $m < -2$
19	If α and β are the roots of $x^2 + 7x + 10 = 0$, find the value of $\alpha^2 + \beta^2$			
	(a) 29	(b) 69	(c) 49	(d) 20
20	If α, β are the roots of the equation $2x^2 - x - 1 = 0$, then find the value of $\frac{1}{\alpha} + \frac{1}{\beta}$.			
	(a) 1	(b) -1	(c) $\frac{1}{2}$	(d) $\frac{-1}{2}$
21	If one root of the equation $2y^2 - ay + 64 = 0$ is twice the other, then find the values of *a*.			
	(a) $a = \pm 8$	(b) $a = \pm 16$	(c) $a = \pm 24$	(d) $a = \pm 4$
22	If one root of the equation $3x^2 + kx + 81 = 0$ (having real roots) is the square of the other, then value of k			
	(a) k = 27	(b) k = -27	(c) k = 36	(d) k = -36
23	A quadratic equation, the sum of whose roots is 0 and one root is 4, is			
	(a) $x^2 - 16$	(b) $x^2 + 16$	(c) $x^2 + 4$	(d) $x^2 - 4$
24	If the quadratic equation $x^2 - 8x + k = 0$ has real roots, then			
	(a) $k < 16$	*(b)* $k \leq 16$	*(c)* $k > 16$	*(d)* $k \geq 16$
25	If x = 3 is one of the roots of the quadratic equation $x^2 - 2kx - 6 = 0$, then the value of k is			
	(a) $\frac{-1}{2}$	(b) $\frac{1}{2}$	(c) 3	(d) 2

	Assertion-Reason Questions
	DIRECTION: In the question number 26 and 30, a statement of assertion (A) is followed by a statement of Reason (R). Choose the correct option (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A) (b) Both assertion (A) and reason (R) are true and reason (R) is not the correct explanation of assertion (A) (c) Assertion (A) is true but reason (R) is false. (d) Assertion (A) is false but reason (R) is true.
26	**Assertion(A)**: If one root of the quadratic equation $6x^2 - x - k = 0$ is $\frac{2}{3}$, then the value of k is 2. **Reason(R)**: The quadratic equation $ax^2 + bx + c = 0$, $a \neq 0$ has almost two roots.
27	**Assertion(A)**: The roots of the quadratic equation $x^2 + 2x + 2 = 0$ are real **Reason(R)**: If discriminant $D = b^2 - 4ac < 0$ then the roots of quadratic equation $ax^2 + bx + c = 0$ are not real.
28	**Assertion:** $(2x - 1)^2 - 4x^2 + 5 = 0$ is not a quadratic equation. **Reason:** An equation of the form $ax^2 + bx + c = 0$, ($a \neq 0$, where a, b and c are real numbers) is called a quadratic equation.
29	**Assertion:** $3x^2 - 6x + 3 = 0$ has equal real roots. **Reason:** The quadratic equation $ax^2 + bx + c = 0$ have equal real roots if discriminant $D > 0$.
30	**Assertion(A):** The equation $9x^2 + 3kx + 4 = 0$ has equal roots for $k = 9$. **Reason (R):** If discriminant 'D' of a quadratic equation is equal to zero, then roots of equation are real and equal.

	ANSWERS		
1	(c) $(x + 2)(x – 1) = x^2 – 2x – 3$	16	(a) p>0, r<0
2	(c) $2x^2 – 7x + 6 = 0$	17	(b) $k = \pm 9$
3	(a) 2	18	(b) $-2 < m < 2$
4	(b) $–x^2 + 3x – 3 = 0$	19	(a) 29
5	(c) 8 Only	20	(b) -1
6	(c) no real roots	21	(c) a = ±24
7	(b) $x^2 + x – 5 = 0$	22	(d) k = -36
8	(a) $x^2 – 4x + 3\sqrt{2} = 0$	23	(a) $x^2 - 16$
9	(b) 64	24	*(b)* $k \leq 16$
10	(a) $x^2 + 10x – 500 = 0$	25	(b) $\frac{1}{2}$
11	(b) $x^2 - 11x - 6 = 0$	26	(b)
12	(b) 2c	27	(d)
13	(b) 2	28	(a)
14	(c) Step 4	29	(c)
15	(b) $D > 0$	30	(d)

CHAPTER:-5	ARITHMETIC PROGRESSION

Q1.	The 10th term of the AP: 5, 8, 11, 14, ... is		
(A)	32	(B)	35
(C)	38	(D)	185
Q2.	In an AP, if d = –4, n = 7, an = 4, then a is		
(A)	6	(B)	7
(C)	20	(D)	28
Q3.	The list of numbers – 10, – 6, – 2, 2,... is		
(A)	An AP with d = – 16	(B)	An AP with d = 4
(C)	An AP with d = – 4	(D)	Not an AP
Q4.	The first four terms of an AP, whose first term is –2 and the common difference is –2, are		
(A)	– 2, 0, 2, 4	(B)	– 2, 4, – 8, 16
(C)	– 2, – 4, – 6,-8	(D)	-2,-4,-8,-16
Q5.	If the 2nd term of an AP is 13 and the 5th term is 25, what is its 7th term?		
(A)	30	(B)	33
(C)	37	(D)	38
Q6.	If 7 times the 7th term of an AP is equal to 11 times its 11th term, then its 18th term will be		
(A)	0	(B)	1
(C)	2	(D)	3
Q7.	If the first term of an AP is –5 and the common difference is 2, then the sum of the first 6 terms is		
(A)	1	(B)	-1
(C)	0	(D)	2
Q8.	The sum of first 100 multiples of 3 is		
(A)	15130	(B)	15100
(C)	15120	(D)	15150
Q9.	In an AP if a = –7.2, d = 3.6, an = 7.2, then n is		
(A)	-5	(B)	5
(C)	4	(D)	7

Q10.	In an AP, if a = 3.5, d = 0, n = 101, then a_n will be		
(A)	3.5	(B)	5.5
(C)	4.5	(D)	6.5
Q11.	The 11th term of the AP: –5, –5/2 , 0, 5/2 , ...is		
(A)	-20	(B)	20
(C)	10	(D)	-10
Q12.	What is the common difference of an AP in which $a_{18} - a_{14} = 32$?		
(A)	-8	(B)	5
(C)	8	(D)	-5
Q13.	Two APs have the same common difference. The first term of one of these is –1 and that of the other is – 8. Then the difference between their 4th terms is		
(A)	7	(B)	8
(C)	9	(D)	10
Q14.	The sum of last ten terms of the AP: 8, 10, 12,---, 126.is		
(A)	1170	(B)	1250
(C)	1120	(D)	1130
Q15.	If 7 times the 7th term of an AP is equal to 11 times its 11th term, then its 18th term will be		
(A)	-1	(B)	0
(C)	2	(D)	1
Q16.	Find the sum of all the 11 terms of an AP whose middle most term is 30		
(A)	330	(B)	303
(C)	340	(D)	304
Q17.	In an AP if a = 1, $a_n = 20$ and $S_n = 399$, then n is		
(A)	9	(B)	23
(C)	38	(D)	52
Q18.	How many terms of the AP : 9, 17, 25, . . . must be taken to give a sum of 636?		
(A)	11	(B)	13
(C)	12	(D)	14
Q19.	The sum of the first 40 positive integers divisible by 6 is?		
(A)	4920	(B)	4209
(C)	4902	(D)	4290

Q20.	The sum of the odd numbers between 0 and 50 is?		
(A)	652	(B)	625
(C)	256	(D)	526
Q21.	If the sum of first 7 terms of an AP is 49 and that of 17 terms is 289, the sum of first N terms is?		
(A)	2N	(B)	3N
(C)	N^3	(D)	N^2
Q22.	In an AP, if $S_n = 3n^2 + 5n$ and $a_k = 164$, then the value of k is		
(A)	25	(B)	26
(C)	27	(D)	28
Q23.	Find the sum of first 17 terms of an AP whose 4^{th} and 9^{th} terms are –15 and –30 respectively		
(A)	501	(B)	105
(C)	115	(D)	510
Q24.	If sum of first 6 terms of an AP is 36 and that of the first 16 terms is 256, then the sum of first 10 terms will be?		
(A)	200	(B)	100
(C)	300	(D)	400
Q25.	The houses of a row are numbered consecutively from 1 to 49. If there is a value of x such that the sum of the numbers of the houses preceding the house numbered x is equal to the sum of the numbers of the houses following it. Then the value of x is?.		
(A)	25	(B)	40
(C)	35	(D)	55
Q26.	How many multiples of 4 lie between 10 and 250?		
(A)	70	(B)	50
(C)	65	(D)	60
Q27.	If the 3^{rd} and the 9^{th} terms of an AP are 4 and – 8 respectively, which term of this AP is zero?		
(A)	7^{th}	(B)	6^{th}
(C)	8^{th}	(D)	5^{th}
Q28.	Which term of the AP : 3, 15, 27, 39, . . . will be 132 more than its 54^{th} term?		
(A)	a_{65}	(B)	a_{67}
(C)	a_{66}	(D)	a_{56}

Q29.	If the numbers n – 2, 4n – 1 and 5n + 2 are in AP, then the value of n is		
(A)	3	(B)	4
(C)	1	(D)	2
Q30.	Which term of the AP: 53, 48, 43,... is the first negative term?		
(A)	T_{11}	(B)	T_{12}
(C)	T_{14}	(D)	T_{13}

ANSWERS

1	(A)	32	2	(D)	28	3	(B)	An AP with d = 4
4	(C)	– 2, – 4, – 6,-8	5	(B)	33	6	(A)	0
7	(C)	0	8	(D)	15150	9	(B)	5
10	(A)	3.5	11	(B)	20	12	(C)	8
13	(A)	7	14	(A)	1170	15	(B)	0
16	(A)	330	17	(C)	38	18	(C)	12
19	(A)	4920	20	(B)	625	21	(D)	N^2
22	(C)	27	23	(D)	510	24	(B)	100
25	(C)	35	26	(D)	60	27	(D)	5^{th}
28	(A)	a_{65}	29	(C)	1	30	(B)	T_{12}

CHAPTER 6 TRIANGLES

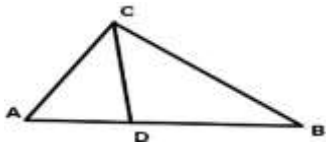
1. If $\Delta ABC \sim \Delta PQR$, AB =6.5 cm ,PQ = 10.4cm. Perimeter of ΔABC *is* 60 cm , then the perimeter of ΔPQR *is*

(a) 100cm (b) 60cm (c) 96 cm (d) none

2. XY is drawn parallel to the base BC of a ΔABC cutting AB at X and AC at Y. If AB = 4 BX and YC =2cm, then AY is

(a) 2cm (b) 4cm (c) 6 cm (d) 8cm

3. From the below figure if $\angle ACB = \angle CDA$, AD = 3cm and AC= 6cm then find the length of AB



(a) 12cm (b) 13cm (c) 14cm (d) none of these

4. In ΔABC and ΔDEF, < B = <E, <F = <C and AB= 3DE. Then the two triangles are

(a) Congruent but not similar (b) Similar but not congruent
(c) Neither congruent nor similar (d) none of the above

5. In ΔABC, D and E are points on the sides AB and AC respectively such that DE ∥ BC, if AD =2.5cm BD =3.0cm and AE= 3.75 cm, find the length of AC

(a) 7.65 cm (b) 8.45 cm (c) 6.89cm (d) 8.25cm

6. **Assertion:** If $\Delta ABC \sim \Delta PQR$, then $\angle A = \angle R$

Reason; if in two triangles, corresponding angles are equal, then their corresponding sides are in the same ratio and hence the two triangles are similar

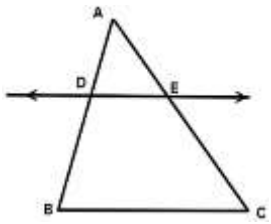
a) Both A and R is true and R is the correct explanation of A

b) Both A and R are true but R is not the correct explanation of A

c) A is true but R is false

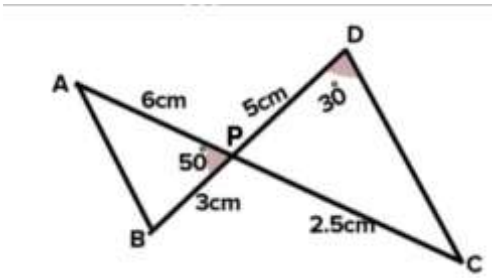
d) A is false but R is true.

7. In the below figure, if a line intersects sides AB and AC of ΔABC at D and E respectively and is parallel to BC. Is $\frac{AD}{AB} = \frac{AE}{AC}$?



(a) YES (b) NO (c) Not required (d) can't determine

8. In the figure given below, the two-line segments AC and BD intersect each other at the point P such that PA =6cm, PB = 3cm, PC= 2.5cm PD = 5cm, ∠APB = 50° and ∠ CDP =30°, then ∠PBA is



(a) 50^o (b) 30^0 (c)60^0 (d)100^0

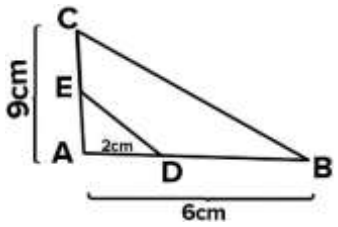
9. ΔABC is such that AB=3cm, BC = 2cm, CA = 2.5 cm. If $\Delta\ ABC \sim \Delta\ DEF$ and EF = 4cm, then perimeter of ΔDEF is

(a) 7.5cm (b) 15cm (c) 22.5cm (d) 30cm

10. ABCD is a trapezium with AD parallel BC and $AD = 4cm$ If the diagonals AC and BD intersect each other at O such that AO/OC =DO/OB =1/2 , then BC=

(a) 6 cm (b) 7cm (c) 8cm (d)9 cm

11. In fig $DE \parallel BC$, then the measure of AE is



(a) 3.6cm (b) 6.3cm (c) 3cm (d) 6cm

12. The perimeter of two similar triangles ABC and LMN are 60cm and 48 cm respectively. If LM = 8cm, then the length of AB is

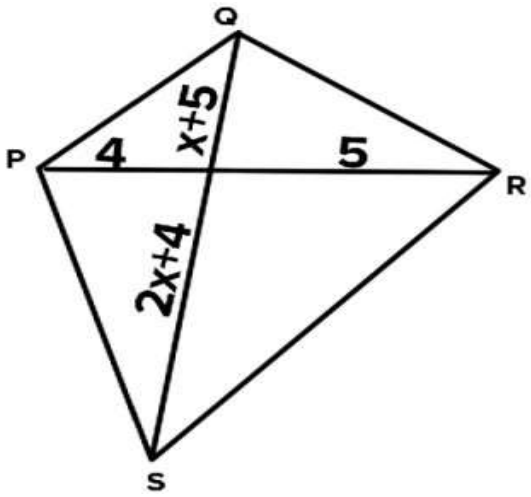
(a) 20cm (b) 15cm (c) 10cm (d) 25cm

13. Find the value of $\angle$BAD in ΔABC, if D is a point on the side BC such that $\frac{AB}{AC} = \frac{BD}{DC}$

$\angle B = 70° \; and \; \angle C = 50°$

(a)30° (b) 45° (c) 60° (d) 75°

14. Evaluate x from the given trapezium PQRS such that PQ $\parallel$ SR



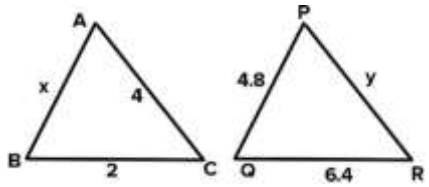
(a)2 (b) 5 (c) 3 (d) 4

15. Which of the following is true? From the figure $< Q =$ <E =80° and $< R =< D =$ 40°

(a) $\Delta PQR \sim \Delta FED$ (b) $\Delta\ PQR \sim DEF$

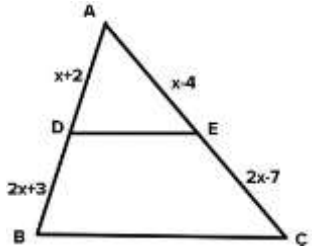
(c) $\Delta PQR \sim \Delta FDE$ (d) $\Delta\ QPR \sim \Delta FED$

16. What is the value of $x + y$, if $\Delta\ ABC \sim \Delta PQR$



(a) 12.8cm (b) 12.5cm (c) 14cm (d) 14.3cm

17. Find the value of x for which DE ‖ BC in the adjoining figure



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

18. Two circles of any radius are always:

(a) Congruent (b) Similar (c) Almost same (d) Copy

19. If all the three angles of a triangle are equal to corresponding three angles of another triangle,then the triangles are said to be:

(a) Similar but not congruent. (b) Congruent but not similar

(c) Can be both similar as well ascongruent (d) Neither similar nor congruent.

20. If a line is drawn parallel to one side of a triangle to intersect the other two sides in distinct points, the other two sides are divided in the same …….

(a) Ratio (b) Size (c) Parts (d) Lengths

21. If a line divides any two sides of a triangle in the same ratio, then the line is----- to the third side

(a) Equal (b) Similar (c) Not equal (d) Parallel

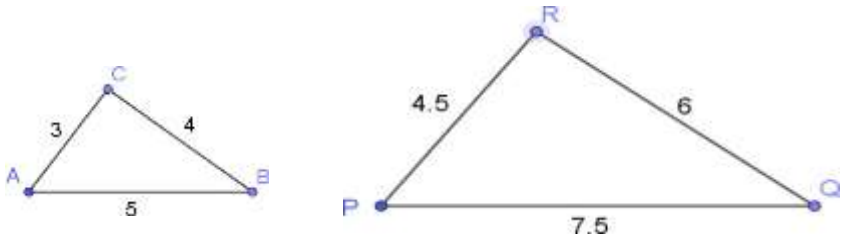
22. For any two similar triangles which of the following statements are valid:

(a) Their sides are proportional

(b) Their sides are always in the same ratio.

(c)Their sides are equal

(d)Their sides are parallel.



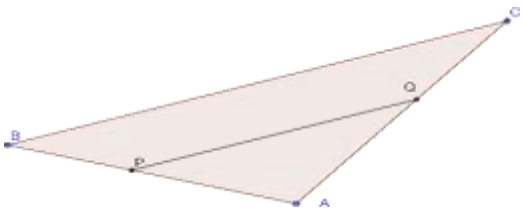
23. Name the criteria of similarity by which following triangles are similar.

(a)S.S.S. (b) S.A.S. (c) A.A.A. (d) A.S.A

24. In a right angled triangle ABC, ∠ C = 35° and in another right-angled triangle PQR , ∠ R = 35° . Then relation between the two triangles is:

(a) Congruent (b) Equal (c) Similar (d) No relation

25. In the given Δ ABC, line PQ is parallel to side BC, then ∠ B = ∠P because they are:



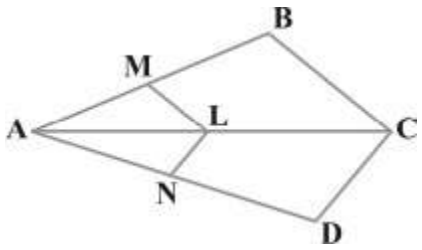
(a) Alternate interior angles. (b) Allied angles.

(c) Adjacent angles. (d) Corresponding angles

26. For any two similar triangles the ratio of their sides is equal to the ratio of

(a) Their medians. (b) Their altitudes. (c) Their angle bisectors. (d) All of these.

27. In the following figure LM is parallel to BC and LN is parallel to CD then which of the following relation is true:



(a) $\frac{AM}{AB} = \frac{AN}{AD}$ (b) $\frac{ML}{BC} = \frac{AL}{AC}$

(c) Both of (a) &(b) (d) Neither of these

28**. A: Assertion:** A line drawn parallel to any one side of a triangle intersects the other two sides proportionally.

R: Reason: Parallel lines cannot be drawn to any one side of a triangle.

(a) Both A and R are true and R is the correct reason of A.

(b) Both A and R are true and R is not the correct reason of A.

(c) A is true but R is false.

(d) A is false but R is true.

29. E and F are the points on the sides PQ and PR respectively of Δ PQR., PE = 4 cm, QE= 4.5 cm, PF = 8 cm and RF = 9 cm.

A: Assertion: EF is not parallel to QR

R: Reason: In a triangle if two sides are divided proportionally by a line then the line is parallelto the third side.

(e) Both A and R are true and R is the correct reason of A.

(f) Both A and R are true and R is not the correct reason of A.

(g) A is true but R is false.

(h) A is false but R is true.

30**. A: Assertion:** If any two sides of a triangle are proportional to corresponding two sides of another triangle and the included angles are equal then the triangles are similar by SAS similarity criterion.

R: Reason: If the equal angles are not included between the proportional sides, then SAS criterion will be void.

(i) Both A and R are true and R is the correct reason of A.

(j) Both A and R are true and R is not the correct reason of A.

(k) A is true but R is false.

(l) A is false but R is true.

CHAPTER-7 CO-ORDINATE GEOMETRY

S.No.	MCQ QUESTIONS
1	The distance of a point P(x,y) from the origin is (A) $\sqrt{(x_2-x_1)^2+(y_2-y_1)^2}$ (B) $\sqrt{(x_2-x_1)+(y_2-y_1)}$ (C) $\sqrt{x+y}$ (D) $\sqrt{x^2+y^2}$
2	The points on y-axis, whose ordinate is 3 and Q is a point (-5,2), then the distance PQ is a. $\sqrt{26}$ *units* b. $\sqrt{24}$ *units* c. 5 *units* d. $\sqrt{65}$ *units*
3	The point on the x-axis which is equidistant from points (-1,0) and (5,0) is a. (0,2) b. (2,0) c. (3,0) d. (0,3)
4	The distance between A(1,3) and B(x,7) is 5. The possible values of x are a. 4,-2 b. 2,4 c. 3,2 d. 2,5
5	The perpendicular distance of A(5,12) from the y-axis is a. 13 units b. 5 units c. 12 units d. 17 units

6	The perimeter of a triangle with vertices (0,4), (0,0) and (3,0) a. 8 b. 10 c. 12 d. 15
7	The coordinates of a point A, where AB is the diameter of a circle, whose centre is (2,-3)and B(1,4) is: a. (10,3) b. (3,-10) c. (-3,10) d. (-3,-10)
8	If the points P(7,3), Q(9,4), R(8,k) and S(6,1) taken in order, are the vertices of the rectangle, then the value of k is: a. -2 b. 2 c. 3 d. -4
9	The number of points on x-axis which are at a distance k, where k= 5, from the point (2,3) are a. No point b. Infinite point c. 2 points d. 1 point
10	The points (-5, 1), (1, p) and (4, -2) are collinear if the value of p is (a) 3 (b) 2 (c) 1 (d) -1
11	The area of the triangle ABC with the vertices A(-5, 7), B(-4, -5) and C(4, 5) is (a) 63 (b) 35 (c) 53 (d) 36

12	The line segment joining the points (3, -1) and (-6, 5) is trisected. The coordinates of point of trisection are (a) (3, 3) (b) (- 3, 3) (c) (3, – 3) (d) (-3,-3)
13	The points (-1, –2), (1, 0), (-1, 2), (-3, 0) form a quadrilateral of type: (a) Square (b) Rectangle (c) Parallelogram (d) Rhombus
14	If the distance between the points A(2, -2) and B(-1, x) is equal to 5, then the value of x is: (a) 2 (b) -2 (c) 1 (d) -1
15	The distance of point A(2, 4) from the x-axis is (a) 2 units (b) 4 units (c) -2 units (d) -4 units
16	If O(p/3, 4) is the midpoint of the line segment joining the points P(-6, 5) and Q(-2, 3), the the value of p is: (a) 7/2 (b) -12 (c) 4 (d) -4
17	The point which divides the line segment of points P(-1, 7) and (4, -3) in the ratio of 2:3 is: (a) (-1, 3) (b) (-1, -3) (c) (1, -3) (d) (1, 3)
18	The ratio in which the line segment joining the points P(-3, 10) and Q(6, –8) is divided by O(-1, 6) is: (a) 1:3 (b) 3:4 (c) 2:7 (d) 2:5
19	The coordinates of a point P, where PQ is the diameter of a circle whose centre is (2, – 3) and Q is (1, 4) is (a) (3, -10) (b) (2, -10) (c) (-3, 10) (d) (-2, 10)
20	The distance of the point P(–6, 8) from the origin is (a) 8 units (b) $2\sqrt{7}$ units (c) 10 units (d) 6 units
21	The perimeter of a triangle with vertices (0, 4), (0, 0) and (3, 0) is (a) 5 (b) 12 (c) 11 (d) $7 + \sqrt{5}$
22	The point which lies on the perpendicular bisector of the line segment joining the points A(–2, –5) and B(2, 5) is (a) (0, 0) (b) (0, 2) (c) (2, 0) (d) (–2, 0)

23	If the points A(1, 2), O(0, 0) and C(a, b) are collinear, then (a) a = b (b) a = 2b (c) 2a = b (d) a = –b
24	If the points A(6, 1), B(8, 2), C(9, 4) and D(p, 3) are the vertices of a parallelogram, taken in order, then the value of p is (a) 4 (b) -6 (c) 7 (d) -2
25	The fourth vertex D of a parallelogram ABCD whose three vertices are A(–2, 3), B(6, 7) and C(8, 3) is (a) (0, 1) (b) (0, –1) (c) (–1, 0) (d) (1, 0)
26	18. A line intersects the y-axis and x-axis at the points P and Q, respectively. If (2, -5) is the midpoint of PQ, then the coordinates of P and Q are, respectively (a) (0, -5) and (2, 0) (b) (0, 10) and (-4, 0) (c) (0, 4) and (-10, 0) (d) (0, -10) and (4, 0)
27	AOBC is a rectangle whose three vertices are A(0, 3), O(0, 0) and B(5, 0). The length of its diagonal is (a) 5 (b) 3 (c) $\sqrt{34}$ (d) 4
28	The points (–4, 0), (4, 0) and (0, 3) are the vertices of a (a) right triangle (b) isosceles triangle (c) equilateral triangle (d) scalene triangle
29	The coordinates of the point which is equidistant from the vertices O(0, 0), A(2x, 0) and B(0, 2y) of triangle OAB are (a) (x, y) (b) (y, x) (c) (x/2,y/2) (d) (Y/2,x/2)
30	The line segment joining points (−3, −4), and (1, −2) is divided by y-axis in the ratio (a) 1 : 3 (b) 2 : 3 (c) 3 : 1 (d) 2 : 3

Q. NO.	Answers
1	D
2	a. $\sqrt{26}\ units$
3	b. (2,0)
4	a. 4,-2
5	b. 5 units
6	c. 12
7	b. (3,-10)
8	b.2
9	c. 2 points
10	d. -1
11	c.53
12	(b) (- 3, 3)
13	(a) Square
14	(a) 2
15	(b) 4 units
16	(b) -12
17	(d) (1, 3)
18	(c) 2:7
19	(a) (3, -10)
20	(c) 10 units
21	(b) 12
22	(a) (0, 0)
23	(c) 2a = b
24	(c) 7
25	(b) (0, –1)
26	(d) (0, -10) and (4, 0)
27	(c) √34
28	(b) isosceles triangle
29	(a) (x, y)
30	(c) 3 : 1

Chapter 8 - INTRODUCTION TO TRIGONOMETRY

S.No.	Questions
Q1	If $\tan\theta = \frac{3}{4}$ then the value of $\sin\theta$ is (a) $\frac{3}{5}$ (b) $\frac{4}{4}$ (c) $\frac{3}{4}$ (d) $\frac{-3}{5}$
Q2	If $\sin(A+B) = \frac{\sqrt{3}}{2}$ and $\tan(A-B) = 1$. What are the values of A and B? (a) 37, 54 (b) 35.7, 40.7 (c) 50, 10 (d) 52.5, 7.5
Q3	If $\tan\alpha = \sqrt{3}$ and $\text{cosec}\,\beta = 1$, then the value of $\alpha - \beta$? (a) -30° (b) 30° (c) 90° (d) 60°
Q4	In triangle ABC, right angled at C, then the value of cosec (A + B) is (a) 2 (b) 0 (c) 1 (d) ∞
Q5	If $\sin\theta - \cos\theta = 0$ then the value of $\sec\theta$ (a) $\frac{1}{2}$ (b) $\sqrt{2}$ (c) 1 (d) $\frac{1}{\sqrt{2}}$
Q6	What is the value of sin30°+ cos60° ? (a) $\frac{1}{2}$ (b) 0 (c) 1 (d) $\frac{1}{\sqrt{2}}$
Q7	If (1 + cos A) (1 – cos A) =3/4, find the value of sec A. (a)$\pm\frac{1}{2}$ (b) $\sqrt{2}$ (c) ±1 (d)±2
Q8	If x tan 60°cos 60°= sin60°cot 60°, then x = (a) cos 30° (b) tan 30° (c) sin 30° (d) cot3 0°
Q9	If $\sin\theta + \cos\theta = \sqrt{2}$, then $\tan\theta + \cot\theta$ = (a)1 (b) 2 (c) 3 (d) 4
Q10	If $2\sin^2\beta - \cos^2\beta = 2$, then β is (a)0° (b) 90° (c) 45° (d) 30°

Q11	If the angles of ΔABC are in ratio 1:1:2, respectively (the largest angle being angle C), then the value of $\frac{\sec A}{cosec\ B} - \frac{\tan A}{\cot B}$ is (a)0 (b) $\frac{1}{2}$ (c) 1 (d) $\frac{\sqrt{3}}{2}$
Q12	If 4 tanβ = 3, then $\frac{4\sin\beta - 3\cos\beta}{4\sin\beta + 3\cos\beta}$ = (a)0 (b) $\frac{1}{3}$ (c) $\frac{2}{3}$ (d) $\frac{3}{4}$
Q13	The value $\frac{5\,cos^2\,60° + 4\,sec^2\,30° - tan^2\,45°)}{sin^2 30° + cos^2 30°}$ (a)$\frac{32}{35}$ (b) $\frac{14}{55}$ (c) $\frac{67}{12}$ (d) $\frac{19}{33}$
Q14	If sinθ = x and sec θ= y then value of cot θ is given by (a) $\frac{x}{y}$ (b) $\frac{1}{xy^2}$ (c) $\frac{1}{x^2}$ (d) $\frac{1}{xy}$
Q15	If cos x = $\frac{2}{3}$. Find the value of tan x (a) $\frac{\sqrt{5}}{2}$ (b) $\frac{5}{2}$ (c) $\frac{5}{\sqrt{2}}$ (d) $\sqrt{\frac{5}{2}}$
Q16	$\frac{2tan\ 30°}{(1 - tan^2 30°)}$ is equal to (a) tan 30° (b) tan 60° (c) tan 30° (d) tan 0°
Q17	If a triangle ABC is right-angled at C. What will be the value of cos(A+B) (a)1 (b) 0 (c) $\frac{\sqrt{3}}{2}$ (d) $\frac{1}{2}$
Q18	What is the minimum value of sin A, 0 ≤ A ≤ 90° (a) -1 (b) 0 (c) 1 (d) $\frac{1}{2}$
Q19	If x tan 45° sin 30° = cos 30° tan 30°, then x is equal to (a) $\sqrt{3}$ (b) $\frac{1}{2}$ (c) $\frac{1}{\sqrt{2}}$ (d) 1
Q20	If sec A + tan A = x, then tan A = (a) $\frac{x^2-1}{x}$ (b) $\frac{x^2-1}{2x}$ (c) $\frac{x^2+1}{x}$ (d) $\frac{x^2+1}{2x}$

Q21	$\frac{1+tan^2A}{1+cot^2A}$= (a) sec^2 A (b) -1 (c) cot^2A (d) tan^2A
Q22	If sin A + sin^2A = 1, then find the value of cos^2A + cos^4A. (a) 1 (b) 2 (c) 5 (d) 2
Q23	If sec θ – tan θ = 1/3, then find the value of (sec θ + tan θ) (a) 4 (b) 6 (c) 3 (d) 2
Q24	If x=a cos θ and y= b sin θ, then $b^2x^2+a^2y^2$ = (a) ab (b) b^2+a^2 (c) a^2b^2 (d) a^4b^4
Q25	sin 2A = 2 sin A is true when A = (a) 30° (b) 45° (c) 0° (d) 60°
Q26	The value of the expression $sin^6\theta + cos^6\theta + 3\ sin^2\theta\ cos^2\theta$ is (a) 0 (b) 3 (c) 2 (d) 1
Q27	5 tan^2 A – 5 sec^2 A + 1 is equal to (a) 6 (b) -5 (c) 1 (d) -4
Q28	If 3sec θ – 5 =0 , then cot θ is (a) $\frac{5}{3}$ (b) $\frac{4}{5}$ (c) $\frac{3}{4}$ (d) $\frac{3}{5}$
Q29	Assertion: The value of cosec 30°+ cot45° is 3 Reason: cosec 30°=2, cot 45°=1 (a) both Assertion and reason are correct and reason is correct explanation for Assertion (b) both Assertion and reason are correct but reason is not correct explanation for Assertion (c) Assertion is correct but reason is false (d) both Assertion and reason are false

Q30	Assertion: In a right ΔABC, right angled at B, if tanA=12/5, then secA=13/5. Reason: cotA is the product of cot and A. (a) both Assertion and reason are correct and reason is correct explanation for Assertion (b) both Assertion and reason are correct but reason is not correct explanation for Assertion (c) Assertion is correct but reason is false (d) both Assertion and reason are false

Answers

Q.No.	Answers	Q.No.	Answers
Q1	A	Q16	B
Q2	D	Q17	B
Q3	A	Q18	B
Q4	C	Q19	D
Q5	B	Q20	B
Q6	C	Q21	D
Q7	D	Q22	A
Q8	B	Q23	C
Q9	B	Q24	C
Q10	B	Q25	C
Q11	A	Q26	d
Q12	A	Q27	d
Q13	C	Q28	c
Q14	D	Q29	b
Q15	A	Q30	c

CHAPTER:- 9	**SOME APPLICATIONS OF TRIGONOMETRY**		
Q1.	If a tower 30 m high, casts a shadow $10\sqrt{3}$ m long on the ground, then what is the angle of elevation of the sun?		
(A)	30^0	(B)	45^0
(C)	60^0	(D)	70^0
Q2.	If the length of the shadow of a tree is decreasing then the angle of elevation is:		
(A)	Increasing	(B)	Decreasing
(C)	Remains the same	(D)	None of the above
Q3.	If the ratio of the height of a tower and the length of its shadow is $1:\sqrt{3}$, what is the angle of elevation of the Sun?		
(A)	90^0	(B)	45^0
(C)	60^0	(D)	30^0
Q4.	The angle formed by the line of sight with the horizontal when the point is below the horizontal level is called:		
(A)	Angle of elevation	(B)	Angle of depression
(C)	No such angle is formed	(D)	None of the above
Q5.	A ladder 15m long reaches a window which is a 9m above the ground on one side of the street. Keeping its foot at the same point, the ladder is turned to the other side of the street to reach a window 12m high. Find the width of the street.		
(A)	21m	(B)	23m
(C)	22m	(D)	25m
Q6.	The line drawn from the eye of an observer to the point in the object viewed by the observer is said to be:		
(A)	Angle of elevation	(B)	Angle of depression
(C)	Line of sight	(D)	None of the above
Q7.	If the height and length of a shadow of a tower are the same, then the angle of elevation of Sun is:		
(A)	60^0	(B)	45^0
(C)	30^0	(D)	90^0
Q8.	If the height of the building and distance from the building foot's to a point is increased by 10%, then the angle of elevation on the top of the building:		
(A)	Increases	(B)	Decreases
(C)	Do not change	(D)	None of the above

Q9.	A ladder makes an angle of 60° with the ground, when placed along a wall. If the foot of ladder is 8 m away from the wall, the length of ladder is:		
(A)	4 m	(B)	8 m
(C)	$8\sqrt{3}$ m	(D)	16 m
Q10.	The angle of depression of an object on the ground, from the top of a 25 m high tower is 30°. The distance of the object from the base of tower is:		
(A)	$25\sqrt{3}$ m	(B)	$50\sqrt{3}$ m
(C)	$75\sqrt{3}$ m	(D)	50 m
Q11.	The tops of two poles of height 20m and 14m are connected by a wire. If the wire makes an angle of 30 degree with horizontal, then the length of the wire is:		
(A)	8 m	(B)	12 m
(C)	10 m	(D)	14 m
Q12.	A tree breaks due to a storm and the broken part bends so that the top of the tree touches the ground making an angle of 30° with the ground. The distance between the foot of the tree to the point where the top touches the ground is 8 m. The height of the tree is		
(A)	$4\sqrt{3}$ m	(B)	$8\sqrt{3}$ m
(C)	$6\sqrt{3}$ m	(D)	$16\sqrt{3}$ m
Q13.	The angle of elevation of the top of a tower is 30°. If the height of the tower is tripled, then the angle of elevation of the top of a tower is:		
(A)	Greater than 60°	(B)	Equal to 30°
(C)	Less than 60°	(D)	Equal to 60°
Q14.	An observer 1.5 m tall is 28.5 m away from a tower and the angle of elevation of the top of the tower from the eye of the observer is 45^0. The height of the tower is:		
(A)	27 m	(B)	30 m
(C)	28.5 m	(D)	29.5 m
Q15.	The angle of depression of an object on the ground, from the top of a 25 m high tower is 30°. The distance of the object from the base of the tower is		
(A)	$25\sqrt{3}$ m	(B)	$50\sqrt{3}$ m
(C)	$75\sqrt{3}$ m	(D)	50 m
Q16.	The angle of elevation of the top of a building from a point on the ground, which is 30 m away from the foot of the building, is 30°. The height of the building is		
(A)	10 m	(B)	$10\sqrt{3}$ m
(C)	$\sqrt{3}/10$ m	(D)	30 m

Q17.	The angles of elevation of the top of a tower from two points at a distance of 4 m and 9 m from the base of the tower and in the same straight line with it are complementary. Then the height of tower is		
(A)	36m	(B)	16m
(C)	6m	(D)	4m
Q18.	A kite is flying at a height of 60 m above the ground. The string attached to the kite is temporarily tied to a point on the ground. The inclination of the string with the ground is 60°. Assuming that there is no slack in the string. The length of the string is:		
(A)	$40/\sqrt{3}$ m	(B)	$20\sqrt{3}$ m
(C)	$20/\sqrt{3}$ m	(D)	$40\sqrt{3}$ m
Q19.	A pole 6m high costs a shadow $2\sqrt{3}$m long on the ground then the sun's elevation is:		
(A)	60^0	(B)	45^0
(C)	30^0	(D)	90^0
Q20.	The angle of depression of a car parked on the road from the top of 150 m high tower is 30°. The distance of the car from the tower (in metres) is:		
(A)	$50\sqrt{3}$ m	(B)	$150\sqrt{3}$ m
(C)	$150\sqrt{2}$ m	(D)	75 m
Q21.	From the top of a 120 m high tower, a man observes two cars on the opposite sides of the tower and in straight line with the base of tower with angles of depression as 60° and 45°. Then the distance between two cars is:		
(A)	$(40 + 120\sqrt{3})$m	(B)	$(160\sqrt{3})$m
(C)	$(120 + 40\sqrt{3})$m	(D)	$(160\sqrt{3})$m
Q22.	If two towers of height h1 and h2 subtends angles of 60° and 30°midpoint of the line joining their feet. Then what is $h_1:h_2$ is:		
(A)	1:2	(B)	2:1
(C)	1:3	(D)	3:1
Q23.	If two poles are 25m and 15m high and the line joining their tops makes an angle 45^0 with the horizontal. The distance between these poles is:		
(A)	10 m	(B)	20 m
(C)	30 m	(D)	$20\sqrt{3}$m

Q24.	A vertical tower stands on horizontal plane and is surmounted by a vertical flag-staff of height 6 m. The angles at a point on the bottom and top of the flag-staff with the ground are 30° and 45° respectively. Then the height of the tower is:		
(A)	$\sqrt{3}(\sqrt{3}+1)$ m	(B)	$3(\sqrt{3}+1)$ m
(C)	$2(\sqrt{3}+1)$ m	(D)	$3(\sqrt{2}+1)$ m
Q25.	The shadow of a tower standing on a level plane is found to be 50 m longer when Sun's elevation is 30° than when it is 60°. Then the height of tower is:		
(A)	$20\sqrt{3}$	(B)	$25\sqrt{3}$
(C)	$10\sqrt{3}$	(D)	$30\sqrt{3}$
Q26.	The angle of elevation of the top of a tower from certain point is 30°. If the observer moves 20 metres towards the tower, the angle of elevation of the top increases by 15°. Find the height of the towe		
(A)	$10(\sqrt{3}+1)$	(B)	$5\sqrt{3}$
(C)	$5(\sqrt{3}+1)$	(D)	$10\sqrt{3}$
Q27.	The angle of elevation of the top of a vertical tower from a point on the ground is60°. From another point 10 m vertically above the first, its angle of elevation is45°. Then the height of the tower is:		
(A)	$5(\sqrt{3}+3)$ m	(B)	$(\sqrt{3}+3)$ m
(C)	$15(\sqrt{3}+3)$ m	(D)	$5\sqrt{3}$ m
Q28.	The angle of elevation of an aeroplane from a point on the ground is 60°. After a flight of 30 seconds the angle of elevation becomes 30°. If the air plane is flying at a constant height of $3000\sqrt{3}$ m, Then the speed of the aeroplane is:		
(A)	250 m/sec	(B)	300 m/sec
(C)	200 m/sec	(D)	350 m/sec
Q29.	The height or length of an object or the distance between two distant objects can be determined with the help of:		
(A)	Trigonometry angles	(B)	Trigonometry identities
(C)	Trigonometry ratios	(D)	None of the above
Q30.	From a point on a bridge across a river the angle of depression of the banks on opposite sides of the river are 30° and 45° respectively. If the bridge is at the height of 30 m from the banks, the width of the river is		
(A)	$30(1+\sqrt{3})$ m	(B)	$30(\sqrt{3}-1)$ m
(C)	$30\sqrt{3}$ m	(D)	$60\sqrt{3}$ m

ANSWERS

1	(C)	60^0	2	(A)	Increasing	3	(D)	30^0
4	(B)	Angle of depression	5	(A)	21m	6	(C)	Line of sight
7	(B)	45^0	8	(C)	Do not change	9	(D)	16 m
10	(A)	$25\sqrt{3}$ m	11	(B)	12 m	12	(B)	$8\sqrt{3}$ m
13	(D)	Equal to 60°	14	(A)	36	15	(A)	$25\sqrt{3}$ m
16	(B)	$10\sqrt{3}$ m	17	(C)	6m	18	(D)	$40\sqrt{3}$ m
19	(A)	60^0	20	(B)	$150\sqrt{3}$ m	21	(C)	$(120 + 40\sqrt{3})$m
22	(D)	3:1	23	(A)	10 m	24	(B)	$3(\sqrt{3}+1)$ m
25	(B)	$25\sqrt{3}$	26	(A)	$10 (\sqrt{3} + 1)$	27	(A)	$5 (\sqrt{3} + 3)$ m
28	(C)	200 m/sec	29	(C)	Trigonometry ratios	30	(A)	$30(1 + \sqrt{3})$ m

CHAPTER 10- Circle

1. How many tangents can a circle have?

(a) 0 (b) 1 (c) 2 (d) Infinite

2. A tangent intersects the circle at:

(a) One point (b) Two distinct point (c) At the circle (d) None of the above

3. A line through point of contact and passing through centre of circle is known as

(a) Tangent (b) Chord (c) Normal (d) Segment

4. The length of the tangent from an external point A on a circle with centre O is

(a) Always greater than OA (b) equal to OA (c) always less than OA (d) cannot be estimated

5.A line intersecting a circle in two points is called a _____.

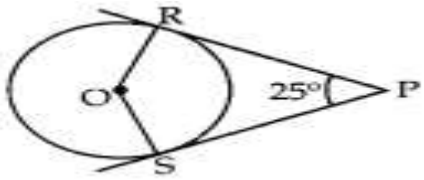
(a) Secant (b) Chord (c) Diameter (d) Tangent

6. The tangent to a circle is _____ to the radius through the point of contact.

(a) Parallel (b) Perpendicular (c) Perpendicular bisector (d) Bisector

7. The distance between two parallel tangents of a circle of radius 4 cm is

(a) 2 cm (b) 4 cm (c) 6 cm (d) 8 cm

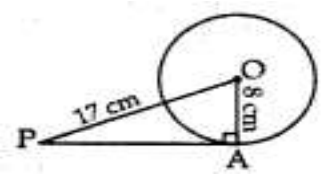


8. In the given figure, if ∠RPS = 25 º, the value of ∠ ROS is

(a) 135° (b) 145° (c) 165° (d) 155°

9. A tangent is drawn from a point at a distance of 17 cm of circle C (0, r) of radius 8 cm. The length of its tangent is

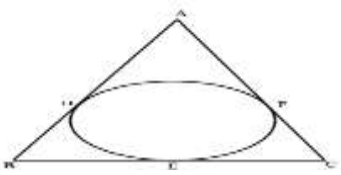
(a) 5 cm (b) 9 cm (c) 15 cm (d) 23 cm



10. The length of tangents drawn from an external point to the circle

(a) are equal (b) are not equal

(c) sometimes are equal (d) are not defined



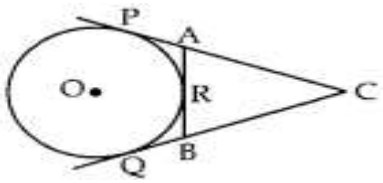
11. A Circle is inscribed in triangle ABC having sides AB=8 cm, BC=10 cm, and AC=12 cm as shown in the given figure. Find the length of AD?

(a) 2.8 cm (b) 3cm (c) 5 cm (d) 3.5 cm

12. The tangents drawn at the extremities of the diameter of a circle are

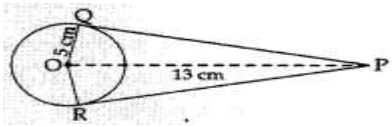
(a) Perpendicular (b) Parallel (c) equal (d) none of these

13. In given figure, CP and CQ are tangents to a circle with centre O. ARB is another tangent touching the circle at R. If CP = 11 cm and BC = 6 cm then the length of BR is



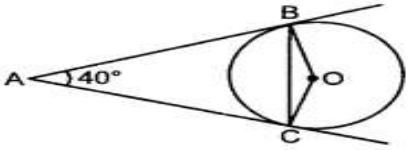
(a) 6 cm (b) 5 cm (c) 4 cm (d) 3 cm

14. From a point P which is at a distance of 13 cm from the centre O of a circle of radius 5 cm, the pair of tangents PQ and PR to the circle are drawn. Then the area of the quadrilateral PQOR is



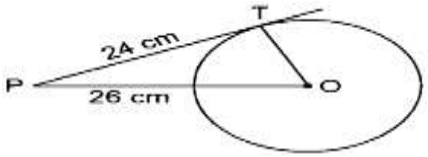
(a) 60 cm^2 (b) 65 cm^2 (c) 30 cm^2 (d) 32.5cm^2

15. In the given figure, AB and AC are tangents to the circle with centre O such that ∠ BAC = 40°, then ∠BOC is equal to



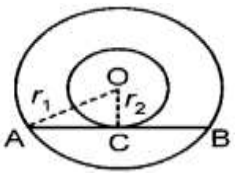
(a) 40° (b) 50° (c) 140° (d) 150°

16. In the given figure, point P is 26 cm away from the centre O of a circle and the length PT of the tangent drawn from P to the circle is 24 cm. Then the radius of the circle is



(a) 25 cm (b) 26 cm (c) 24 cm (d) 10 cm

17. C1 (O, r_1) and C2(O, r_2) are two concentric circles with $r_1 > r_2$ AB is a chord of C1(O, r_1) touching C2(O, r_2) at point C then which one statement is true

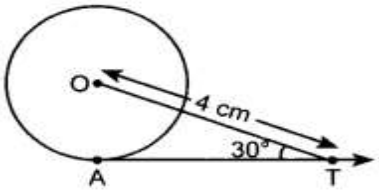


(a) AB = r_1 (b) AB = r_2 (c) AC = BC (d) AB = $r_1 + r_2$

18. Two parallel lines touch the circle at points A and B respectively. If area of the circle is 25 πcm^2, then AB is equal to

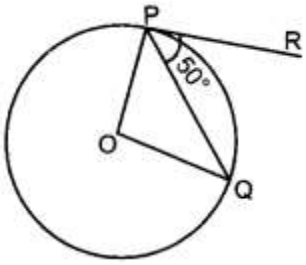
(a) 5 cm (b) 8 cm (c) 10 cm (d) 25 cm

19. In figure AT is a tangent to the circle with centre O such that OT = 4 cm and ∠ OTA = 30°. Then AT is equal to



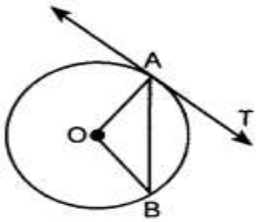
(a) 4 cm (b) 2 cm (c) $2\sqrt{3}$cm (d) $4\sqrt{3}$ cm

20. In figure if O is centre of a circle, PQ is a chord and the tangent PR at P makes an angle of 50° with PQ, then ∠POQ is equal to



(a) 100° (b) 80° (c) 90° (d) 75°

21. In figure, O is the centre of a circle, AB is a chord and AT is the tangent at A. If ∠AOB = 100°, then ∠BAT is equal to



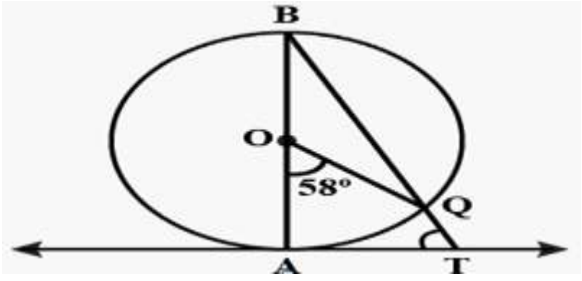
(a) 100° (b) 40° (c) 50° (d) 90°

22. If the angle between two radii of a circle is 110º, then the angle between the tangents at the ends of the radii is:

(a) 90º (b) 50º (c) 70º (d) 40º

23. AB is a chord of the circle and AOC is its diameter such that angle ACB = 50°. If AT is the tangent to the circle at the point A, then ∠BAT is equal to

(a) 65° (b) 60° (c) 50° (d) 40°



24. In the given figure, AB is a diameter of a circle with centre O and AT is a tangent .If ∠ AOQ =58 º, find ∠ATQ

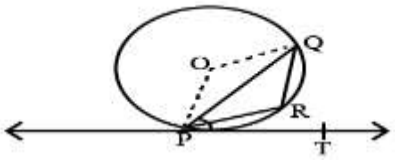
(a) 56° (b) 61° (c) 65° (d) 72°

25. If a parallelogram circumscribes a circle, then it is a:

(a) Square (b) Rectangle (c) Rhombus (d) None of the above

26. In figure, PQ is a chord of a circle with centre O and PT is a tangent.

If ∠QPT=60°, find ∠PRQ.



(a) 110° (b) 160° (c) 120° (d) 100°

27. If angle between two radii of a circle is 130°, the angle between the tangents at the ends of the radii is

(a) 90° (b) 50° (c) 70° (d) 40°

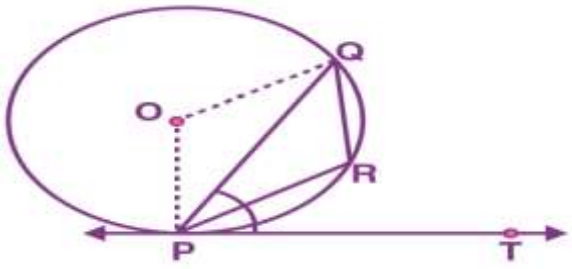
28. A tangent PQ at a point P of a circle of radius 5 cm meets a line through the centre O at a point Q so that OQ = 12 cm. Length PQ is:

(A) 12 cm (B) 13 cm (C) 8.5 cm (D) √119 cm

29. If two tangents inclined at an angle 60° are drawn to a circle of radius 3 cm, then length of each tangent is equal to

(a) $\frac{3}{2}$ √3 cm (b) 6 cm (c) 3 cm (d) 3√3 cm

30. In the figure below, PQ is a chord of a circle and PT is the tangent at P such that ∠QPT = 60°. Then ∠PRQ is equal to



(a) 135° (b) 150° (c) 120° (d) 110°

ANSWERS

1	(d)	Infinite	11	(c)	5 cm	21	(c)	50°
2	(a)	One Point	12	(b)	Parallel	22	(c)	70º
3	(c)	Normal	13	(b)	5 cm	23	(c)	50°
4	(c)	Always less than OA	14	(a)	60 cm^2	24	(b)	61°
5	(a)	Secant	15	(c)	140°	25	(c)	Rhombus
6	(b)	Perpendicular	16	(d)	10 cm	26	(c)	120°
7	(d)	8 cm.	17	(c)	AC = BC	27	(b)	50°
8	(d)	155°	18	(c)	10 cm	28	(d)	√119 cm
9	(c)	15 cm	19	(c)	$2\sqrt{3}$cm	29	(d)	3√3 cm
10	(a)	Are equal	20	(a)	100°	30	(c)	120°

CHAPTER 11 – AREA RELATED TO CIRCLES

Q1.	Perimeter of sector of a circle having angle 90°and radius 14 cm is		
(A)	11cm	(B)	22cm
(C)	154cm	(D)	50cm
Q2.	Ratio of area of circle to area of square whose length of side is equal to the radius of circle is		
(A)	22:7	(B)	1:1
(C)	11:2	(D)	44:49
Q3.	Area of clock swept by minute hand of diameter 42 cm from 12.00 to 3.00 is		
(A)	693 cm^2	(B)	346.5 cm^2
(C)	1386 cm^2	(D)	5544 cm^2
Q4.	Find the diameter of circle whose area is equal to the sum of the areas of the two circles of diameters 20cm and 48cm.		
(A)	48cm	(B)	26cm
(C)	52cm	(D)	56cm
Q5.	Find the area of corresponding major sector of a circle of radius 14cm and central angle 90°.		
(A)	280 cm^2	(B)	616 cm^2
(C)	308 cm^2	(D)	462 cm^2
Q6.	Find the area of the sector of a circle of radius 5cm, if the corresponding length of arc is 3.5cm		
(A)	17.5 cm^2	(B)	35 cm^2
(C)	7.5 cm^2	(D)	8.75 cm^2
Q7.	A chord AB of a circle of radius 10cm subtends an angle of 60 ° at the centre of the circle. The area of minor segment is		
(A)	9.08 cm^2	(B)	8.08 cm^2
(C)	304.2 cm^2	(D)	None of the above

Q8.	If the length of a circle subtending and angle of 60° is 22 cm then the radius of circle is		
(A)	22 cm	(B)	20 cm
(C)	21cm	(D)	None of the above
Q9.	The perimeter of a certain sector of a circle of radius 6.5 cm is 31cm.Then the area of sector will be		
(A)	48.5 cm^2	(B)	54.33 cm^2
(C)	58.5 cm^2	(D)	None of the above
Q10.	The diameter of wheel is 63cm. How many revolutions will it make to cover 792m?		
(A)	200	(B)	300
(C)	400	(D)	350
Q11.	If the sum of the circumference of two circles with radius r_1 and r_2 is equal to the circumference of a circle of radius R then		
(A)	$R = r_1 + r_2$	(B)	$R < r_1 + r_2$
(C)	$R > r_1 + r_2$	(D)	None of the above
Q12.	If the circumference of the circle and perimeter of square are equal then		
(A)	Area of Circle = Area of Square	(B)	Area of Circle > Area of Square
(C)	Area of Circle < Area of Square	(D)	Nothing definite can be said about The relationship between The areas of the circle and the square.
Q13.	The circumferences of two concentric circles forming a ring are 88 cm and 66 cm respectively the width of the ring is		
(A)	14cm	(B)	3.5cm
(C)	7cm	(D)	21cm
Q14.	The radius of a circle is 50cm if the radius is decreased by 50% its area will be decreased by		
(A)	50%	(B)	75%
(C)	25%	(D)	80%

Q15.	If the circumference of two circles are in the ratio 4:9 then the ratio of their area will be		
(A)	16:81	(B)	8 : 18
(C)	4 : 9	(D)	4 : 81
Q16.	The area of a square that can be inscribed in a circle of radius10 cm is		
(A)	100 cm^2	(B)	100π cm^2
(C)	400 cm^2	(D)	200 cm^2
Q17.	If the perimeter of a semicircular garden is 36m then its radius is		
(A)	14 m	(B)	3.5 m
(C)	10 m	(D)	7 m
Q18.	The area of a semi circular field is 15400 m^2 then perimeter of the field is		
(A)	360 m	(B)	$360\sqrt{2}$ m
(C)	440m	(D)	380 $\sqrt{2}$ m
Q19.	The area of circle that can be inscribed in a square of side 6cm is		
(A)	36π cm^2	(B)	9π cm^2
(C)	12π cm^2	(D)	18π cm^2
Q20.	The area of a quadrant of a circle where the circumference of the circle is 154 m is		
(A)	943.25 cm^2	(B)	471.625 cm^2
(C)	925.43 cm^2	(D)	1886.5 cm^2
Q21.	The perimeter of a quadrant of a circle of radius r is		
(A)	$R^2/2$	(B)	π+4
(C)	R/2	(D)	r/2(π+4)
Q22.	Circumferences of two circles are equal. is it necessary that areas be equal? Why?		
(A)	True as $r_1 = r_2$	(B)	False as $r_1=r_2$
(C)	True as $r_1 \neq r_2$	(D)	False as $r_1 \neq r_2$

Q22.	Circumferences of two circles are equal. is it necessary that areas be equal? Why?		
(A)	True as $r_1 = r_2$	(B)	False as $r_1 = r_2$
(C)	True as $r_1 \neq r_2$	(D)	False as $r_1 \neq r_2$
Q23.	A car has two wipers which do not overlap each viper has a blade of length 21 cm sweeping through an angle of 120°.The total area cleaned at each sweep of the blades is		
(A)	922 cm^2	(B)	924 cm^2
(C)	942cm^2	(D)	964 cm^2
Q24.	A wire can be bent in the form of a circle of radius 56cm if it is bent in the form of a square then the area will be		
(A)	3520 cm^2	(B)	7744 cm^2
(C)	6400 cm^2	(D)	8800 cm^2
Q25.	Assertion: The area of the minor sector of a circle of radius 4 cm is 4.19cm^2 and that of the major sector is 46.1 $cm^{2.}$ Reason: Area of major sector = area of the circle – area of minor sector		
(A)	Both A and R are true and R is the correct explanation of A	(B)	Both A and R are true but R is not The correct explanation of A.
(C)	A is true but R is false.	(D)	A is false but R is true.
Q26.	Assertion: If the perimeter of a circle is double the area of the circle then the radius of the circle is 4 units. Reason: The areas enclosed by an arc and a chord is called sector of the circle.		
(A)	Both A and R are true and R is the correct explanation of A	(B)	Both A and R are true but R is not The correct explanation of A
(C)	A is true but R is false.	(D)	A is false but R is true.
Q27.	The area of the in circle of an equilateral triangle of side 42cm is		
(A)	1224 cm^2	(B)	$616\sqrt{3}$ cm^2
(C)	1848 cm^2	(D)	5544 cm^2

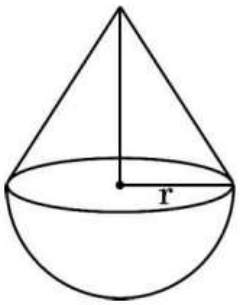
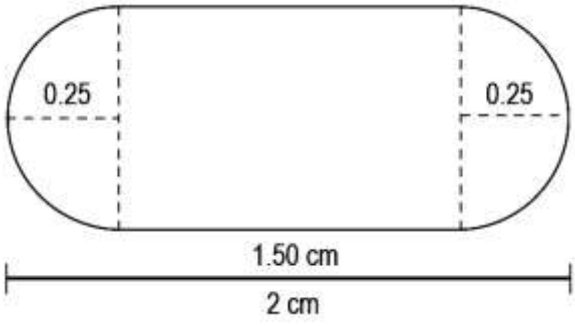
Q28.	Assertion: The area of sector depends on the measure of the angle in the centre θ and the square of the radius. Reason: The measure of the angle at the centre is 180° area of the sector = πr^2		
(A)	Both A and R are true and R is the correct explanation of A	(B)	Both A and R are true but R is not The correct explanation of A.
(C)	A is true but R is false.	(D)	A is false but R is true.
Q29.	Assertion: If the ratio of the circumference of two circles is 3:1 then the ratio of their areas is 9:1. Reason: If R_1 and R_2 are the radii of two circles then ratios of the areas is $\sqrt{\frac{R1}{R2}}$		
(A)	Both A and R are true and R is the correct explanation of A	(B)	Both A and R are true but R is not The correct explanation of A.
(C)	A is true but R is false.	(D)	A is false but R is true.
Q30.	Assertion: If the outer and inner diameter of a circular path is 10m and 6m then the area of the path is $16\pi m^2$ Reason: if R and r be the radius of outer and inner circular path then the area of the path is $\boldsymbol{\pi(R^2 - r^2)}$ m^2		
(A)	Both A and R are true and R is the correct explanation of A	(B)	Both A and R are true but R is not The correct explanation of A.
(C)	A is true but R is false.	(D)	A is false but R is true.

ANSWERS

1	(D)	50 cm	2	(A)	22:7	3	(B)	346.5 cm^2
4	(B)	26cm	5	(D)	462 cm^2	6	(D)	8.75 cm^2
7	(A)	9.08 cm^2	8	(C)	21cm	9	(C)	58.5 cm^2
10	(C)	400	11	(A)	R = $r_1 + r_2$	12	(B)	Area of Circle > Area of Square
13	(B)	3.5cm	14	(A)	75%	15	(A)	16:81
16	(D)	200 cm^2	17	(D)	7 m	18	(B)	$360\sqrt{2}$ m
19	(B)	9π cm^2	20	(B)	471.625 cm^2	21	(D)	$r/2(\pi+4)$
22	(A)	True as $r_1 = r_2$	23	(B)	924 cm^2	24	(B)	7744 cm^2
25	(A)	Both A and R are true and R is the correct explanation of A	26	(D)	A is false but R is true.	27	(C)	1848 cm^2
28	(C)	A is true but R is false.	29	(C)	A is true but R is false.	30	(A)	Both A and R are true and R is the correct explanation of A

CHAPTER 12 - SURFACE AREAS AND VOLUMES

MULTIPLE-CHOICE QUESTIONS

1.	A solid is of the form of a cone of radius 'r' surmounted on a hemisphere of the same radius. If the height of the cone is the same as the diameter of its base, then the volume of the solid is :  (a) πr^3 (b) $3\pi r^3$ (c) $\frac{4}{3}\pi r^3$ (d) $\frac{2}{3}\pi r^3$
2.	The curved surface area of a right circular cylinder of height 14 cm is 88 cm^2. The diameter of its circular base is: (a) 2 cm (b) 1 cm (c) 4 cm (d) 7 cm
3.	What is the total surface area of a solid hemisphere of diameter 'd' ? (a) $3\pi d^2$ (b) $2\pi d^2$ (c) $\frac{3}{4}\pi d^2$ (d) $\frac{1}{2}\pi d^2$
4.	If the area of the base of a cone is 51 cm^2 and its volume is 85 cm^3, then the vertical height of the cone is given as : (a) $\frac{5}{6}$ cm (b) $\frac{5}{3}$ cm (c) $\frac{5}{2}$ cm (d) 5 cm
5.	The ratio of the total surface area to the lateral surface area of a cylinder with base radius 80 cm and height 20 cm is (a) 1 : 2 (b) 2 : 1 (c) 3 : 1 (d) 5 : 1
6.	A medicine-capsule is in the shape of a cylinder of radius 0.25 cm with two hemispheres stuck to each of its ends. The length of the entire capsule is 2 cm. What is the total surface area of the capsule? (Take π as 3.14)  (a) 0.785 cm^2 (b) 0.98125 cm^2 (c) 2.7475 cm^2 (d) 3.14 cm^2

7.	The radius of the largest right circular cone that can be cut out from a cube of edge 4.2 cm is (a) 2.1 cm (b) 4.2 cm (c) 3.1 cm (d) 2.2 cm
8.	Volume and surface area of a solid hemisphere are numerically equal. What is the diameter of hemisphere? (a) 9 units (b) 6 units (c) 4.5 units (d) 18 units
9.	Volumes of two spheres are in the ratio 64:27. The ratio of their surface areas is (a) 3:4 (b) 4:3 (c) 9:16 (d) 16:9
10.	Three cubes each of side 15 cm are joined end to end. The total surface area of the cuboid is: (a) 3150 cm^2 (b) 1575 cm^2 (c) 1012.5 cm^2 (d) 576.4 cm^2
11.	The volume of a wall, 5 times as high as it is broad and 8 times as long as it is high, is 12.8 m^3 . The breadth of the wall is (a) 30 cm (b) 40 cm (c) 22.5 cm (d) 25 cm
12.	The base radii of a cone and a cylinder are equal. If their curved surface areas are also equal, then the ratio of the slant height of the cone to the height of the cylinder is: (a) 2 : 1 (b) 1 : 2 (c) 1 : 3 (d) 3 : 1
13.	If a marble of radius 2.1 cm is put into a cylindrical cup full of water of radius 5cm and height 6 cm, then how much water flows out of the cylindrical cup? (a) 38.8 cm^3 (b) 55.4 cm^3 (c) 19.4 cm^3 (d) 471.4 cm^3
14.	A cubical ice cream brick of edge 22 cm is to be distributed among some children by filling ice cream cones of radius 2 cm and height 7 cm upto its brim. How many children will get the ice cream cones? (a) 163 (b) 263 (c) 363 (d) 463
15.	The volume of the largest right circular cone that can be cut out from a cube of edge 4.2 cm is (a) 9.7 cm^3 (b) 77.6 cm^3 (c) 58.2 cm^3 (d) 19.4 cm^3
16.	A hollow cube of internal edge 22cm is filled with spherical marbles of diameter 0.5 cm and it is assumed that $\frac{1}{8}$ space of the cube remains unfilled. Then the number of marbles that the cube can accomodate is (a) 142296 (b) 142396 (c) 142496 (d) 142596
17.	A metallic spherical shell of internal and external diameters 4 cm and 8 cm, respectively is melted and recast into the form a cone of base diameter 8cm. The height of the cone is (a) 12cm (b) 14cm (c) 15cm (d) 18cm

18.	A solid piece of iron in the form of a cuboid of dimensions 49cm × 33cm × 24cm, is moulded to form a solid sphere. The radius of the sphere is (a) 21cm (b) 23cm (c) 25cm (d) 19cm
19.	A right circular cylinder of radius r cm and height h cm (h>2r) just encloses a sphere of diameter (a) r cm (b) 2r cm (c) h cm (d) 2h cm
20.	If each edge of a cube is increased by 50%, the percentage increase in the surface area is (a) 50% (b) 75% (c) 100% (d) 125%
21.	The area of the base of a rectangular tank is 6500 cm^2 and the volume of water contained in it is 2.6 m^3. The depth of water in the tank is (a) 3.5 m (b) 4 m (c) 5 m (d) 8 m
22.	The radii of two cylinders are in the ratio 2 : 3 and their heights are in the ratio 5 : 3. The ratio of their volumes is (a) 27 : 20 (b) 20 : 27 (c) 4 : 9 (d) 9 : 4
23.	In a shower, 5 cm of rain falls. The volume of the water that falls on 2 hectares of ground, is (a) 100 m^3 (b) 10 m^3 (c) 1000 m^3 (d) 10000 m^3
24.	A mason constructs a wall of dimensions 270cm× 300cm × 350cm with the bricks each of size 22.5cm × 11.25cm × 8.75cm and it is assumed that $\frac{1}{8}$ space is covered by the mortar. Then the number of bricks used to construct the wall is (a) 11100 (b) 11200 (c) 11000 (d) 11300
25.	Twelve solid spheres of the same size are made by melting a solid metallic cylinder of base diameter 2 cm and height 16 cm. The diameter of each sphere is (a) 4 cm (b) 3 cm (c) 2 cm (d) 6 cm
26.	How many bags of grain can be stored in a cuboidal granary (8m×6m×3m), if each bag occupies a space of 0.64 m^3 ? (a) 8256 (b) 90 (c) 212 (d) 225
27.	A solid is hemispherical at the bottom and conical (of same radius) above it. If the surface areas of the two parts are equal then the ratio of its radius and the slant height of the conical part is (a) 1 : 2 (b) 2 : 1 (c) 1 : 4 (d) 4 : 1
28.	A circus tent is cylindrical to a height of 4 m and conical above it. If its diameter is 105 m and its slant height is 40 m, the total area of canvas required is (a) 1760 m^2 (b) 2640 m^2 (c) 3960 m^2 (d) 7920 m^2
	Questions number 29 and 30 are Assertion and Reason based questions carrying 1 mark each. Two statements are given, one labelled as Assertion (A) and the other is labelled as Reason (R).

	Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below. (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of the Assertion (A). (b) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of the Assertion (A). (c) Assertion (A) is true, but Reason (R) is false. (d) Assertion (A) is false, but Reason (R) is true.
29.	*Assertion (A) :* The surface area of largest sphere that can be inscribed in a hollow cube of side 'a' cm is πa^3 cm^2 . *Reason (R) :* The surface area of a sphere of radius r is $\frac{4}{3}$ πr^3 .
30.	*Assertion (A) :* Two cubes each of edge length 10 cm are joined together. The total surface area of newly formed cuboid is 1200 cm^2 . *Reason (R) :* Area of each surface of a cube of side 10 cm is 100 cm^2 .

CHAPTER 13- STATISTICS

1. The mean of the observations given by:

(a) Sum of observations/Total number of observations

(b) Total number of observations/Sum of observations

(c) Sum of observations +Total number of observations

(d) None of the above

Answer: (a) Sum of observations/Total number of observations

2. If the mean of frequency distribution is 7.5 and $\sum fi\ xi = 120 + 3k$, $\sum fi = 30$, then k is equal to:

(a) 40 (b) 35 (c) 50 (d) 45

Answer: (b) 35

3. The median of first seven prime numbers is:

(a) 3 (b) 5 (c) 7 (d) 11

Answer: (c) 7

4. The mean of the data: 4, 10, 5, 9, 12 is;

(a) 8 (b) 10 (c) 9 (d) 15

Answer: (a) 8

5. The median of the data 13, 15, 16, 17, 19, 20 is:

(a) 30/2 (b) 31/2 (c) 33/2 (d) 35/2

Answer: (c) 33/2

6. If the mean of first n natural numbers is 3n/5, then the value of n is:

(a) 3 (b) 4 (c) 5 (d) 6

Answer: (c) 5

7. The mean of first five whole numbers is:

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

Answer: (a) 2

8. If mean of a, a+3, a+6, a+9 and a+12 is 10, then a is equal to;

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

Answer: (d) 4

9. The class interval of a given observation is 10 to 15, then the class mark for this interval will be:

(a) 11.5 (b) 12.5 (c) 12 (d) 14

Answer: (b) 12.5

10. If the sum of frequencies is 24, then the value of x in the observation: x, 5,6,1,2, will be;

(a) 4 (b) 6 (c) 8 (d) 10

Answer: (d) 10

11. The mean of following distribution is:

Xi	11	14	17	20
Fi	3	6	9	7

(a) 15.6 (b) 17 (c) 14.8 (d) 16.4

Answer: (d) 16.4

12. Construction of a cumulative frequency table is useful in determining the

(a) mean (b) median (c) mode (d) all the above three measures

Answer: (b) median

13. While computing mean of grouped data, we assume that the frequencies are

(a) centred at the class marks of the classes (b) evenly distributed over all the classes

(c) centred at the upper limits of the classes (d) centred at the lower limits of the classes

Answer: (a) centred at the class marks of the classes

14. Consider the following frequency distribution of the heights of 60 students of a class:

Height (in cm)	150 – 155	155 – 160	160 – 165	165 – 170	170 – 175	175 – 180
Number of students	15	13	10	8	9	5

The sum of the lower limit of the modal class and upper limit of the median class is

(a) 310 (b) 315 (c) 320 (d) 330

Answer: (b) 315

15. Consider the following frequency distribution:

Class	0 – 5	6 – 11	12 – 17	18 – 23	24 – 29
Frequency	13	10	15	8	11

The upper limit of the median class is

(a) 17 (b) 17.5 (c) 18 (d) 18.5

Answer: (b) 17.5

16. The times, in seconds, taken by 150 athletes to run a 110 m hurdle race are tabulated below:

Class	13.8-14	14-14.2	14.2-14.4	14.4-14.6	14.6-14.8	14.8-15
Frequency	2	4	5	71	48	20

The number of athletes who completed the race in less then 14.6 seconds is

(a) 11 (b) 71 (c) 82 (d) 130

Answer: (c) 82

17. Consider the following distribution:

Marks obtained Number of students

More than or equal to 0	63
More than or equal to 10	58
More than or equal to 20	55
More than or equal to 30	51
More than or equal to 40	48
More than or equal to 50	42

the frequency of the class 30-40 is

(a) 3 (b) 4 (c) 48 (d) 51

Answer: (a) 3

18. The empirical relationship between the three measures of central tendency is

(a) 3 Median = Mode + 2 Mean (b) 2 Median = Mode + 2 Mean

(c) 3 Median = Mode + Mean (d) 3 Median = Mode – 2 Mean

Answer: (a) 3 Median = Mode + 2 Mean

19. The ____ of a class is the frequency obtained by adding the frequencies of all the classes preceding the given class.

(a) Class mark (b) Class height (c) Average frequency (d) Cumulative frequency

Answer: (d) Cumulative frequency

20. The method used to find the mean of a given data is (are):

(a) direct method (b) assumed mean method (c) step deviation method (d) all the above

Answer: (d) all the above

21. For what value of x, the mode of the following data is 8:

4, 5, 6, 8, 5, 4, 8, 5, 6, x, 8

(a) 5 (b) 6 (c) 8 (d) 4

Answer. (c) 8

22. The numbers are arranged in ascending order. If their median is 25, then x =?

5, 7, 10, 12, 2x-8, 2x+10, 35, 41, 42, 50

(a) 10 (b) 11 (c) 12 (d) 9

Answer (c) 12

23. If the value of mean and mode are respectively 30 and 15, then median =?

(a) 22.5 (b) 24.5 (c) 25 (d) 26

Answer. (c) 25

24. For the following distribution.

Marks	0-10	10-20	20-30	30-40	40-50
No. of students	3	9	13	10	5

the number of students who got marks less than 30 is

(a) 13 (b) 25 (c) 10 (d) 12

Answer. (b) 25

25. If the median of the distribution is 28.5, find the value of x.

Class Interval	0-10	10-20	20-30	30-40	40-50	50-60	Total
Frequency	5	x	20	15	7	5	60

(a) 8 (b) 10 (c) 4 (d) 9

Answer. (a) 8

26. For the following distribution

Class interval	0-5	5-10	10-15	15-20	20-25
frequency	10	15	12	20	9

the sum of lower limit and upper limit of model class

(a) 20 (b) 15 (c) 30 (d) 35

Answer. (d) 35

27. For the following distribution

Class	0-5	5-10	10-15	15-20	20-25
Frequency	10	15	12	20	9

The sum of lower limits of median class and modal class is:

(a) 15 (b) 25 (c) 30 (d) 35

Answer: (b) 25

28. If 35 is removed from the data 30, 34, 35, 36, 37, 38, 39, 40 then the median increases by:

(a)2 (b) 1.5 (c) 1 (d) 0.5

Answer: (d) 0.5

29. For one term, absentee record of students is given below. If mean is 15.5, then the missing frequencies x and y are:

Number of days	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	TOTAL
Total Number of students	15	16	x	8	y	8	6	4	70

(a) x = 4 and y = 3 (b) x = 7 and y = 7 (c) x = 3 and y = 4 (d) x = 7 and y = 6

Answer: (d) x = 7 and y = 6

30. If each observation increases by 2, then the mean of observations:

(a) decrease by 2 (b) increase by 2 (c) remain same (d) none of these

Answer: (b) increase by 2

CHAPTER 14 – PROBABILITY

Cards are marked with numbers 1 to 50 are placed in the box and mixed thoroughly. One card is drawn at random from the box. Answer the following questions from 1 to 5

Q-1	What is the probability of getting a number less than 11? (a) $\frac{1}{50}$ (b) $\frac{2}{5}$ (c) $\frac{1}{5}$ (d) 0
Q-2	What is the probability of getting a multiple of 5? (a) $\frac{1}{25}$ (b) $\frac{1}{5}$ (c) $\frac{9}{50}$ (d) $\frac{11}{50}$
Q-3	What is the probability of getting a number divisible by 3? (a) $\frac{8}{25}$ (b) $\frac{9}{25}$ (c) $\frac{12}{25}$ (d) $\frac{13}{25}$
Q-4	What is the probability of getting a prime number? (a) 1 (b) $\frac{4}{10}$ (c) $\frac{1}{2}$ (d) $\frac{3}{10}$
Q-5	What is the probability of getting an even number? (a) $\frac{12}{25}$ (b) $\frac{1}{2}$ (c) $\frac{13}{25}$ (d) $\frac{4}{10}$

Peyton and Derek were playing the game of snakes and ladders. Both of them had different coloured dice. one blue and one pink. Both the dice are thrown at the same time. On the basis of above information, answer the following questions 6 to 10

Q-6	What is the probability of getting an even number as the sum? (a) $\frac{1}{2}$ (b) $\frac{5}{12}$ (c) $\frac{17}{36}$ (d) $\frac{19}{36}$

Q-7	What is the probability of getting the sum greater than or equal to 10? (a) $\frac{5}{36}$ (b) $\frac{1}{12}$ (c) $\frac{1}{6}$ (d) $\frac{1}{9}$
Q-8	What is the probability of getting a doublet of odd number? (a) $\frac{2}{9}$ (b) $\frac{1}{12}$ (c) $\frac{1}{6}$ (d) 0
Q-9	What is the probability that the difference of the numbers on the two dice is 2? (a) $\frac{1}{6}$ (b) $\frac{5}{36}$ (c) $\frac{1}{18}$ (d) $\frac{2}{9}$
Q-10	What is the probability of getting a multiple of 5 as the sum? (a) $\frac{7}{36}$ (b) $\frac{5}{36}$ (c) $\frac{1}{6}$ (d) $\frac{2}{18}$

Monica, a class 10 student was studying the concept of probability. She was trying to explain the deck of cards to her little brother, she told him, it consists of 52 cards which are divided into 4 suits of 13 cards each spades, hearts, diamonds and clubs. Clubs and spades are of black colour, while hearts and diamonds are of red colour. The cards in each suit are ace, king, queen, jack, 10, 9, 8, 7, 6, 5, 4, 3 and 2. Kings, queens and jacks are called face cards. She then asks her brother to randomly draw a card from a well shuffled deck of cards.

On the basis of above information, answer the following questions 11 to 15.

Q-11	What is the probability of getting an ace card? (a) $\frac{1}{52}$ (b) $\frac{1}{13}$ (c) $\frac{2}{13}$ (d) $\frac{1}{4}$
Q-12	What is the probability of getting a red card? (a) $\frac{1}{13}$ (b) $\frac{1}{4}$ (c) $\frac{5}{13}$ (d) $\frac{1}{2}$

Q-13	What is the probability of getting either black or king card? (a) $\frac{7}{13}$ (b) $\frac{1}{2}$ (c) $\frac{15}{26}$ (d) $\frac{1}{4}$
Q-14	What is the probability of getting red and a queen card? (a) $\frac{2}{13}$ (b) $\frac{1}{4}$ (c) $\frac{1}{26}$ (d) $\frac{1}{13}$
Q-15	What is the probability of getting neither a heart nor a king card? (a) $\frac{2}{13}$ (b) $\frac{9}{13}$ (c) $\frac{35}{36}$ (d) $\frac{16}{36}$
Q-16	The king, queen and jack of clubs are removed from a pack of 52 playing cards. One card is selected at random from the remaining cards. Find the probability that the card is neither a heart nor a king (a) $\frac{34}{49}$ (b) $\frac{36}{49}$ (c) $\frac{35}{49}$ (d) $\frac{15}{49}$
Two coins are tossed simultaneously. Answer the following questions 17 to 20	
Q-17	What is the probability of getting two heads? (a) 1 (b) $\frac{1}{2}$ (c) 0 (d) $\frac{1}{4}$
Q-18	What is the probability of getting at least one head? (a) $\frac{1}{4}$ (b) $\frac{2}{4}$ (c) $\frac{3}{4}$ (d) $\frac{1}{3}$
Q-19	What is the probability of getting no tail? (a) $\frac{1}{2}$ (b) $\frac{1}{4}$ (c) $\frac{3}{4}$ (d) 1
Q-20	What is the probability of getting at most one head? (a) $\frac{3}{4}$ (b) $\frac{1}{2}$ (c) $\frac{1}{4}$ (d) 0

Misha went to see a Christmas party, the clown put 5 red candies, 8 white candies and 4 green candies in his bag. He calls Misha to pick a her color.

On the basis of the above information, answer the following questions 21 to 23

Q-21	What is the probability that the candy taken out will be red? (a) $\frac{5}{17}$ (b) $\frac{1}{5}$ (c) $\frac{4}{17}$ (d) $\frac{1}{17}$
Q-22	What is the probability that the candy taken out will be not green? (a) $\frac{5}{17}$ (b) $\frac{8}{17}$ (c) $\frac{4}{17}$ (d) $\frac{13}{17}$
Q-23	What is the probability that the candy taken out will be red or green? (a) $\frac{1}{17}$ (b) $\frac{5}{17}$ (c) $\frac{9}{17}$ (d) $\frac{8}{17}$

A carton consists of 100 shirts of which 88 are good, 8 have minor defects and 4 have major defects. Jimmy, a trader, will only accept the shirts which are good, but Sujatha, another trader, will only reject the shirts which have major defects. One shirt is drawn at random from the carton. Answer the given question 24 and 25.

Q-24	What is the probability that it is not acceptable to Jimmy? (a) $\frac{8}{100}$ (b) $\frac{88}{100}$ (c) $\frac{4}{100}$ (d) $\frac{12}{100}$
Q-25	What is the probability that it is acceptable to Sujatha? (a) 0.96 (b) 0.88 (c) 0.8 (d) 0.4
Q-26	A letter is chosen at random from the letters of the word 'ASSASSINATION'. The probability that the letter chosen is vowel (a) $\frac{6}{13}$ (b) $\frac{5}{13}$ (c) $\frac{7}{13}$ (d) $\frac{4}{13}$
Q-27	The probability of getting 5 Sundays in the month of August. (a) $\frac{1}{7}$ (b) $\frac{3}{7}$ (c) $\frac{2}{7}$ (d) 1

Q-28	The probability of getting 53 Fridays in a leap year. (a) $\frac{1}{7}$ (b) $\frac{3}{7}$ (c) $\frac{2}{7}$ (d) 1
Q-29	A bag contains 5 red balls and some blue balls. If the probability of drawing a blue ball from the bag is thrice that of a red ball, find the number of blue balls in the bag. (a) 11 (b) 12 (c) 14 (d) 15
Q-30	A bag contains 18 balls out of which *x* balls are red.If 2 more red balls are put in the bag, the probability of drawing a red ball will be $\frac{9}{8}$ times the probability of drawing a red ball in the first case. Find the value of *x*. (a) 12 (b) 8 (c) 10 (d) 14

ANSWERS					
Q-1	(c) $\frac{1}{5}$	Q-11	(b) $\frac{1}{13}$	Q-21	(a) $\frac{5}{17}$
Q-2	(b) $\frac{1}{5}$	Q-12	(d) $\frac{1}{2}$	Q-22	(d) $\frac{13}{17}$
Q-3	(a) $\frac{8}{25}$	Q-13	(a) $\frac{7}{13}$	Q-23	(c) $\frac{9}{17}$
Q-4	(d) $\frac{3}{10}$	Q-14	(c) $\frac{1}{26}$	Q-24	(d) $\frac{12}{100}$
Q-5	(b) $\frac{1}{2}$	Q-15	(b) $\frac{9}{13}$	Q-25	(a) 0.96
Q-6	(a) $\frac{1}{2}$	Q-16	(a) $\frac{34}{49}$	Q-26	(a) $\frac{6}{13}$
Q-7	(c) $\frac{1}{6}$	Q-17	(d) $\frac{1}{4}$	Q-27	(b) $\frac{3}{7}$
Q-8	(b) $\frac{1}{12}$	Q-18	(c) $\frac{3}{4}$	Q-28	(c) $\frac{2}{7}$
Q-9	(d) $\frac{2}{9}$	Q-19	(b) $\frac{1}{4}$	Q-29	(d) 15
Q-10	(a) $\frac{7}{36}$	Q-20	(a) $\frac{3}{4}$	Q-30	(b) 8