Arithmetic Progressions

Multiple Choice Questions :

1. The nth term of an arithmetic progression is $a_n = 4n + 5$ then the 3rd term is :

   A) 5 B) 9 C) 13 D) 17

2. 2, x, 14 are in Arithmetic progression, then the value of x is :

   A) 28 B) 16 C) 7 D) 8

3. If the n^{th} term of an arithmetic progression $a_n = 3n - 2$, then its 9 th term

   A) -25 B) 5 C) -5 D) 25

4. The sum of first 20 natural numbers is

   A) 142 B) 210 C) 254 D) 310

5. In an arithmetic progression, if $a_n = 2n + 1$, then the common difference of the given progression is

   A) 0 B) 1 C) 2 D) 3

6. If the n-th term of an arithmetic progression is $5n + 3$, then 3rd term of the arithmetic progression is

   A) 11 B) 18 C) 12 D) 13

7. If the n^{th} term of an arithmetic progression $a_n = 24 - 3n$, then its 2^{nd} term is

   A) 18 B) 15 C) 0 D) 2

8. Sum of all the first 'n' terms of even natural number is

   A) $n(n+1)$ B) $n(n+2)$ C) n^2 D) $2n^2$

9. In a sequence if $a_n = 4n^2 - 1$ and $a_n = 35$ then the value of n is

   A) 9 B) 5 C) 6 D) 3

10. The value of $\sum 18 + \sum 19$ is

A) 324 B) 361 C) 703 D) 743

11. If n^{th} term of a sequence is $\frac{n}{n+1}$, then the 2^{nd} term of the sequence is

A) $\frac{3}{2}$ B) $\frac{2}{3}$ C) $\frac{1}{3}$ D) $\frac{1}{2}$

12. If $a_n = n^2 + 3$ then the value of a_3 is

A) 6 B) 9 C) 12 D) 27

13. Arithmetic mean of 2 and 8 is

A) 5 B) 10 C) 16 D) 3.2

14. If a, b and c are in Arithmetic progression then $\frac{b-a}{c-b}$ is equal to

A) $\frac{b}{a}$ B) 0 C) 1 D) $2a$

15. In an AP $a, a+d, a+2d, a+3d, \ldots$,what is $'a'$ called ?

A) common difference B) common ratio

C) first term D) last term

16. In an AP $a, a+d, a+2d, a+3d, \ldots$,what is $'d$ called ?

A) common difference B) common ratio

C) first term D) last term

17. The next term of the AP : $3,1,-1,-3$ ...is

A) 5 B) -4 C) -5 D) 0

18. The next term of the AP : $\sqrt{2}, \sqrt{8}, \sqrt{18}, \sqrt{32}, \ldots$is

A) $\sqrt{48}$ B) $\sqrt{54}$ C) $\sqrt{50}$ D) $\sqrt{60}$

19. The first four terms of 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) $-2,-4,-8,-16$

20. The common difference of the AP : $-4,-2,0,2,$ ...is

A) 2 B) -2 C) $\frac{1}{2}$ D) $-\frac{1}{2}$

21. What is the commom difference of the AP $a-b, a, a+b$ ….?

A) a B) b C) $a-b$ D) $a+b$

22. If a, b, c are in AP, then

A) $2b = a + c$ B) $b = a + c$ C) $b = ac$ D) $b = \sqrt{ac}$

23. If d is the commom difference of AP whose k^{th} term is a_k,then $a_{k+1} - a_k$ is equal to

A) $2d$ B) d C) 2 D) 1

24. If the common difference of an AP is d, then $a_3 - a_1$ is equal to

A) d B) $2d$ C) $3d$ D) $4d$

25. If $18, x, y, -3$ are in AP, then the value of $x + y$ is

A) 12 B) 15 C) 16 D) 11

26. What is the common difference of an AP in which $a_{24} - a_{17} = -28$?

A) 8 B) -8 C) -4 D) 4

27. If the common difference of an AP is 5 , then the value of $a_{18} - a_{13}$ is :

A) 5 B) 20 C) 25 D) 30

28. What is the last term of the AP $a, a+d, a+2d, a+3d, \ldots$ containing m terms ?

A) $a+(m-1)d$ B) $a+md$

C) $a+(m+1)d$ D) $a+(2m+1)d$

29. The 30^{th} term of 10,7,4, ...is

A) -87 B) 87 C) 77 D) -77

30. The 10^{th} term of 11,15,19, ...is

A) 40 B) 47 C) 50 D) -47

31. The 10^{th} term of $\sqrt{2}, \sqrt{8}, \sqrt{18}, \ldots$ is

A) $\sqrt{162}$ B) $\sqrt{200}$ C) $\sqrt{242}$ D) $\sqrt{288}$

32. The 37^{th} term of $\sqrt{x}, 3\sqrt{x}, 5\sqrt{x}, \ldots$ is

A) $37\sqrt{x}$ B) $39\sqrt{x}$ C) $73\sqrt{x}$ D) $75\sqrt{x}$

33. If the first term of an AP is p and the common difference is q , its 10^{th} term is

A) $p+9q$ B) $p+q$ C) $p+10q$ D) $9p+q$

34. The 21^{th} term of the AP whose first terms are -3 and 4 respectively , is :

A) 77 B) 137 C) 143 D) -143

35. Which term of the AP : 92,88,84,80, ...is 0 ?

A) 23 B) 32 C) 22 D) 24

36. Which term of the AP : 27,24,21, ...is 0 ?

A) 8 B) 10 C) 9 D) 11

37. Which term of the AP : 5,2, -1, ...is -49 ?

A) 19 B) 15 C) 16 D) 20

38.Which term of the AP : 21,42,63,84, ...is 210 ?

A) 9 B) 10 C) 11 D) 12

39.The 6^{th} term from the end of the AP : $5,2,-1,-4,\ldots,-31$ is

A) -25 B) -22 C) -19 D) -16

40.The 10^{th} term from the end of the AP : 4,9,14, ... 254 is

A) 214 B) 209 C) 208 D) 204

41.How many two-digit numbers are divisible by 3 ?

A) 10 B) 20 C) 30 D) 40

42.What is the sum of first n terms of the AP $a, a+d, a+2d, a+3d, \ldots.$?

A) $\frac{n}{2}[2a+(n+1)d]$ B) $\frac{n}{2}[2a+(n-1)d]$

C) $\frac{n}{2}[a+(n-1)d]$ D) $\frac{n}{2}[a+(n+1)d]$

43.What is the sum of first n terms of the AP $a, a+d, a+2d, a+3d, \ldots. l$?

A) $\frac{n}{2}[a+l]$ B) $\frac{n}{2}[2a+l]$

C) $n[a+l]$ D) $n[2a+l]$

44.Find the sum of first 20 terms of the AP 3,3,3,3 ...

A)30 B) 60 C) 90 D) 120

45.Find the sum of first 10 terms of the AP 2,7,12 ...

A)245 B) 255 C) 250 D) 235

46.The sum of first $'n'$ terms of the series $a, 3a, 5a, \ldots.$is

A)na B) $(2n-1)a$ C) n^2a D) n^2a^2

47.Find the sum ,$2 + 4 + 6 + \cdots + 200$

A) 5050 B) 10100 C) 15150 D) 20200

48.What is the sum of first n natural numbers

$A)\frac{n(n+1)}{2}$ B) n^2 C) $\frac{n(n-1)}{2}$ D) $\frac{n(n+2)}{2}$

49.If the first term of an AP is -5 and common difference is 2 , then the sum of the first 6 terms is :

A)5 B) 0 C) 6 D) -10

50.The nth term of an AP, the sum of whose n terms is S_n , is

$A)S_n + S_{n-1}$ B) $S_n - S_{n-1}$ C) $S_n + S_{n+1}$ D) $S_n - S_{n+1}$

51.In a flower bed , there are 23 rose plants in the first row, 21 in the second ,19 in the third , and so on. There are 5 rose plants in the last row. How many rows are there in the flower bed ?

A) 4 B) 6 C) 8 D) 10

52.In an AP, if $a = 28, d = -4, n = 7$, then a_n is :

A)4 B) 5 C) 3 D) 7

53.If $a = 10$ and $d = 10$, then first four terms will be

A)10,30,50,60 B) 10,20,30,40 C) 10,15,20,25 D) 10,18,20,30

54. The missing terms in AP: __,13, __3 are

$A)11\ and\ 9$ B) $17\ and\ 9$ C) $18\ and\ 8$ D) $18\ and\ 9$

55. If the sum of three numbers in an AP is 9 and their product is 24, Then numbers are

$A)2,4,6$ B) 1,3,5 C) 2,4,8 D) 2,3,4

56. If the sum of three numbers in an AP is 24 and their product is 480, Then numbers are

$A)6,8,10$ B) 6,7,11 C) 4,8,12 D) 8,8,8

57. The sum of first n odd natural numbers is

$A)2n^2$ B) $2n+1$ C) $2n-1$ D) n^2

58. Find the next two terms of the AP : $-10, -6, -2, \ldots$

$A)4,8$ B) $-4, -8$ C) 2,6 D) 6,10

59. The fourth term of the AP is 4. The the sum of the first 7 terms is

$A)4$ B) 28 C) 16 D) 40

60. The common difference of the AP for which 20^{th} term is 10 more than the 18^{th} term is

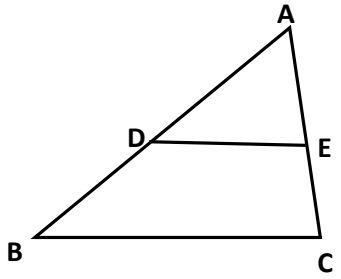
$A)2$ B) 3 C) 5 D) 10

Answers					
1	2	3	4	5	6
D	D	D	B	C	B
7	8	9	10	11	12
A	A	D	B	B	C
13	14	15	16	17	18
A	C	C	A	C	C
19	20	21	22	23	24
C	A	B	A	B	B
25	26	27	28	29	30
B	C	C	A	D	B
31	32	33	34	35	36
B	C	A	A	D	B
37	38	39	40	41	42
A	B	D	B	C	B
43	44	45	46	47	48
A	B	A	C	B	A
49	50	51	52	53	54
B	B	D	A	B	C
55	56	57	58	59	60
D	A	D	C	B	C

TRIANGLES

Multiple Choice Questions :

1) D and E are the midpoints of side AB and AC of a triangle ABC, respectively and $BC = 6cm$. If $DE \parallel BC$, then the length of DE is



A) 2.5 cm B) 3 cm C) 5 cm D)6 cm

2) The diagonals of a rhombus are 16 cm and 12cm in length. The side of rhombus in length is

A) 20 cm B) 8 cm C) 10 cm D) 9cm

3) Corresponding sides of two similar triangles are in the ratio of 2: 3. If the area of small triangle is 48 sq.cm, then the area of large triangle is:

A) 230 $sq.cm$ B) 106 $sq.cm$ C) 107 $sq.cm$ D) 108 $sq.cm$

4) If triangles ABC and DEF are similar and AB = 4 cm, DE= 6 cm, EF = 9 cm and FD = 12 cm, the perimeter of triangle ABC is:

A) 22 cm B) 20 cm C) 21 cm D) 18 cm

5) The height of an equilateral triangle of side 5 cm is:

A) 4.33 cm B) 3.9 cm C) 5 cm D) 4 cm

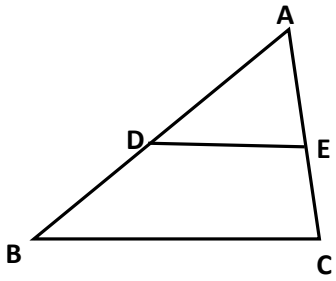
6) If ABC and DEF are two triangles and $\frac{AB}{DE} = \frac{BC}{FD}$, then the two triangles are similar if

A) $\angle A = \angle F$ B) $\angle B = \angle D$ C) $\angle A = \angle D$ D) $\angle$B = $\angle$E

7) Sides of two similar triangles are in the ratio 4 : 9. Areas of these triangles are in the ratio

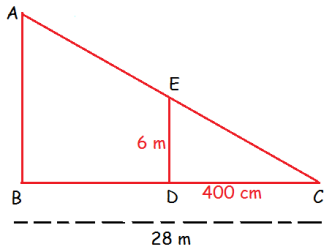
A) 2: 3 B) 4: 9 C) 81: 16 D) 16: 81

8) In the following triangle ABC, $\angle B = 70°$, $\angle BDE = 110°$, $BC = 5\,cm$, $AE = 3\,cm$ and $CE = 3\,cm$. Then the length of DE is



A) $5\,cm$ B) $2.5\,cm$ C) $10\,cm$ D) $3\,cm$

9) A vertical stick of length 6 m casts a shadow $400\,cm$ long on the ground and at the same time a tower casts a shadow $28\,m$ long. The height of the tower is.



A) $\frac{6}{7}\,m$ B) $\frac{56}{3}\,m$ C) $42\,m$ D) $28\,m$

10) The area of two similar triangles are $25\,cm^2$ and $81\,cm^2$ respectively. The ratio of their corresponding sides is

A) 5: 9 B) 9: 5 C) 5: 4 D) 4: 5

11) If triangles ABC and DEF are similar $2AB = DE$ and $BC = 8cm$, then EF is equal to

A) $4\,cm$ B) $8\,cm$ C) $12\,cm$ D) $16\,cm$

12) If ABC is an equilateral triangle such that AD is perpendicular to BC, then AD^2 is equal to

A) $4\,CD^2$ B) $3\,CD^2$ C) $2\,CD^2$ D) $1\,CD^2$

13) Two circles are always

A) similar but may not be congruent B) congruent

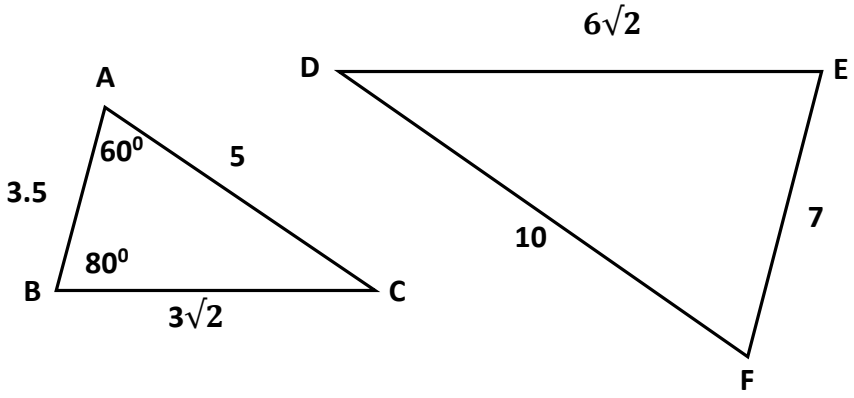
C) neither similar nor congruent D) none of these

14) All squares are

A) similar but may not be congruent B) congruent

C) neither similar nor congruent D) none of these

15) In the below figure, the value of $\angle D$ is

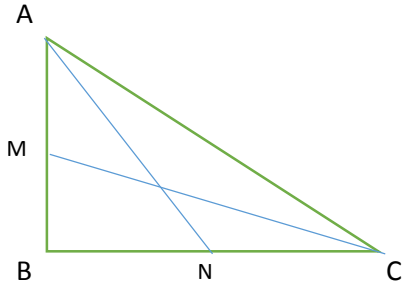


A) 40° B) 60° C) 80° D) 140°

16) A girl of height 90 cm is walking away from the base of lamp post at a speed of 1.2 m/s . If the lamp is 3.6 m above the ground, then length of her shadow after 4 seconds is

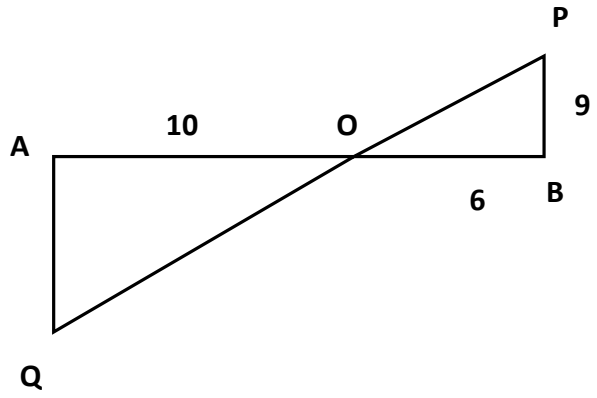
A) 1.2 cm B) 1.6 cm C) 1.8 cm D) 2 cm

17) If ABC is a triangle right angled at B and M, N are the mid points of AB and BC respectively, then $4(AN^2 + CM^2)$ is equal to



A) 2 AC^2 B) 3 AC^2 C) 4 AC^2 D) 5 AC^2

18) In the following figure QA and PB are perpendicular to AB. Then the length of AQ is

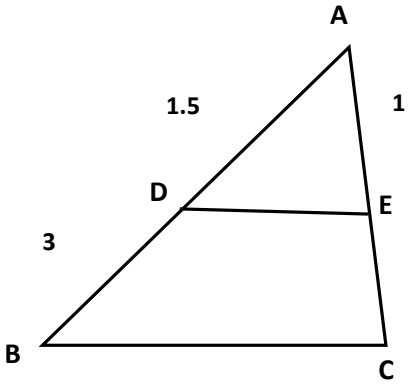


A) 5 $units$ B) 8 $units$ C) 9 $units$ D) 15 $units$

19) In the triangle $ABC, AB = 6\sqrt{3}\ cm, AC = 12\ cm$ and $BC = 6\ cm,$ then $\angle B$ is

A) 120° B) 60° C) 90° D) 45°

20) In the $\Delta ABC, DE||BC$, $AD = 1.5\ cm, BD = 3\ cm$ and $AE = 1\ cm$, then the length of EC is



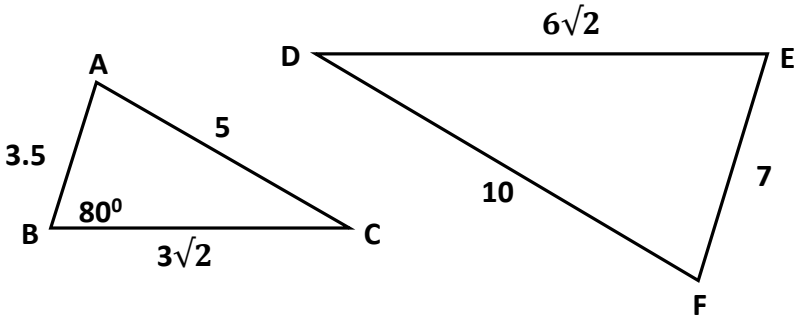
A) 2 cm B) 8 cm C) 12 cm D) 16 cm

21) Another name for Basic Proportionality theorem is

A) Pythagoras theorem B) Thales theorem

C) AAA similarity criterion D) SAS similarity criterion

22) The similarity criterion used for the similarity of the given triangles shown below is

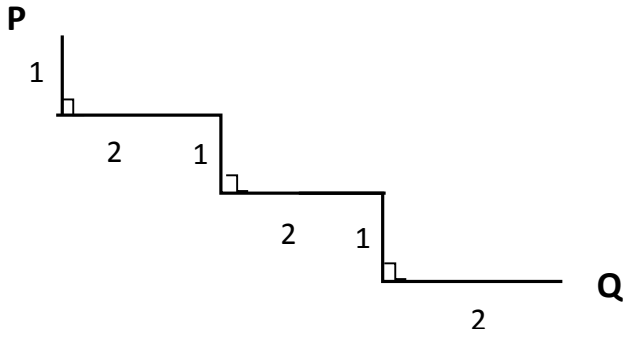


A) AA B) SAS C) SSS D) AAA

23) The areas of similar triangles are 144 cm^2 and 81 cm^2 respectively. If the longest side of largest triangle is 36 cm, then the longest side of smaller triangle is

A) 9 cm B) 12 cm C) 27 cm D) 18 cm

24) In the following figure, the straight line distance between P and Q is



A) $\sqrt{5}$ B) $\sqrt{3}$ C) $3\sqrt{5}$ D) $3\sqrt{3}$

25) If $\Delta\, ABC \sim \Delta\, PQR$, area of $\Delta\, ABC = 225\ cm^2$ and $\frac{AB}{PQ} = \frac{5}{3}$, then the area of $\Delta\, PQR$ is

A) 9 cm^2 B) 45 cm^2 C) 81 cm^2 D)100 cm^2

Answers				
1	**2**	**3**	**4**	**5**
B	**C**	**D**	**D**	**A**
6	**7**	**8**	**9**	**10**
B	**D**	**B**	**C**	**A**
11	**12**	**13**	**14**	**15**
D	**B**	**A**	**A**	**A**
16	**17**	**18**	**19**	**20**
B	**D**	**D**	**C**	**A**
21	**22**	**23**	**24**	**25**
B	**C**	**C**	**C**	**C**

PAIR OF LINEAR EQUATION WITH TWO VARIABLES

Multiple Choice Questions:

1) The pair of linear equations $x = 0$ and $y = 0$ has

   A) one solution B) two solutions

   C) infinitely many solutions D) no solutions

2) One equation of a pair of dependent linear equation is $x + 2y = 4$. The second equation can be

   A) $x + 3y = 5$ B) $2x + 4y = 5$ C) $2x + 4y = 8$ D) $4x + 2y = 8$

3) For what value of $'k'$, do the equations $x + 2y = 4$ and $3x + ky = 12$ represent coincident lines?

   A) 2 B) 3 C) 4 D) 6

4) If the pair of linear equations $a_1x + b_1y + c_1 = 0$ and $a_2x + b_2y + c_2 = 0$ has a unique solution, then

   A) $\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$ B) $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$

   C) $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$ D) $\frac{b_1}{b_2} \neq \frac{c_1}{c_2}$

5) The solution of the pair of linear equations $x + y = 5$ and $x - y = 1$ is

   A) $x = 2, y = 3$ B) $x = 3, y = 2$ C) $x = 5, y = 1$ D) $x = 3, y = 5$

6) If a pair of linear equations is inconsistent , then the lines represented by these equations will be

   A) Parallel B) coincident

   C) intersecting or coincident D) intersecting always

7) The cost of 8 books and 5 pens is Rs 370. Represent this linear equation in two variables form.

   A) $4x + 4y = 370$ B) $8x + 3y = 370$

   C) $8x + 5y = 370$ D) $8x + 13y = 370$

8) If the pair of linear equations $x + 2y = 3$ and $2x + 4y = k$ are coincide then the value of K is

   A) 3 B) 6 C) -3 D) -6

9) In the equation $x + y = 7$,if $x = 3$,then the value of y is

A) 2 B) 4 C) 6 D) 7

10) If 3x+y=10 and y=4 ,then the value of x

A) 0 B) 1 C) 2 D) 3

11) Which of the pair of linear equation has no solution

A) $x + 3y = 3,\ 3x + 9y = 7$ B) $2x + y = 5,\ 3x + 2y = 8$

C) $3x + 5y = 20, 6x + 10y = 40$ D) $x + y = 8, x - y = 2$

12) For what value of p does the pair of linear equations given below have unique solution? $4x + py + 8 = 0$ and $2x + 2y + 2 = 0$

A) $p \neq 8$ B) $p \neq 6$ C) $p = 4$ D) $p \neq 4$

13) For what value of p the system of equations $4x + py + 8 = 0$ and $2x + 2y + 2 = 0$ have no solution

A) $p = 8$ B) $p = 6$ C) $p = 4$ D) $p = 2$

14) If the line given by $x + y + 5 = 0$ and $3x + ky + 6 = 0$ are parallel then the value of k

A) 3 B) 6 C) 5 D) 1

15) Two lines are given to be parallel the equation of one of the lines is $4x + 3y = 5$, then one of the possible second parallel line is

A) $2x + 6y = 6$ B) $3x + 4y = 6$ C) $8x + 6y = 6$ D) $2x + 3y = 5$

16) How many number of solutions are there to the pair of linear equation $2x + 3y = 9$ and $4x + 6y = 18$

A) one solution B) infinitely many solutions

C) no solutions D) two solutions

17) The lines representing $2x + 3y - 9 = 0$ and $4x + 6y - 18 = 0$ are

A) Intersecting lines

B) perpendicular lines

C) parallel lines

D) coincident lines

18) If $a_1x + b_1y + c_1 = 0$ and $a_2x + b_2y + c_2 = 0$ are inconsistent pair then the ratio of their coefficients is

A) $\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$

B) $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$

C) $\frac{a_1}{a_2} \neq \frac{b_1}{b_2} = \frac{c_1}{c_2}$

D) $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$

19) One equation of a pair of consistent linear equation is $5x + 6y + 13 = 0$, the second equation can be

A) $5x + 6y + 13 = 0$

B) $10x + 12y + 16 = 0$

C) $x + y + 1 = 0$

D) $15x + 18y + 20 = 0$

20) 8 tables and 12 chairs together cost rupees 48000. Expressing the situation algebraically is

A) $8x + 12y + 48000 = 0$

B) $8x + 12y = 48000$

C) $4x + 6y = 36000$

D) $4x + 4y = 12000$

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Answers				
1	**2**	**3**	**4**	**5**
A	**C**	**D**	**A**	**B**
6	**7**	**8**	**9**	**10**
A	**C**	**B**	**B**	**C**
11	**12**	**13**	**14**	**15**
A	**D**	**C**	**A**	**C**
16	**17**	**18**	**19**	**20**
B	**D**	**B**	**C**	**B**

Circles

Multiple Choice Questions :

1) Maximum number of tangents drawn to a circle from an external point is

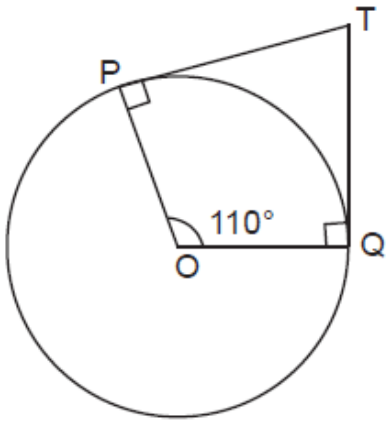
A) 1 B) 2 C) 3 D) 4

2) A line which intersects a circle at two points is called

A) $diameter$ B) $tangent$

C) $secant$ D) $chord$

3) In the figure TP and TQ are tangents to a circle with centre $'O'$. If $\angle POQ = 110°$ then $\angle PTQ$ is equal to



A) 60° B) 70° C) 80° D) 90°

4) The length of the tangent drawn to a circle from a point Q is 24 cm. The length between the point Q and the centre of the circle is 25 cm. Then the radius of the circle is

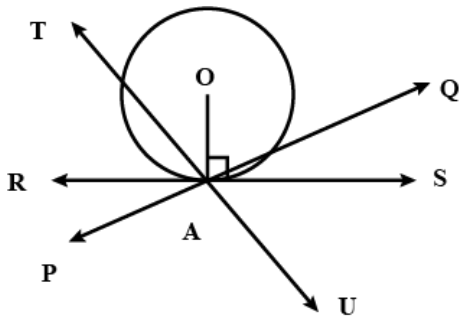
A) 7 cm B) 12 cm C) 15 cm D) 24.5 cm

5) The length of the biggest chord of a circle is 10 cm. The length of the radius is

A) 10 cm B) 5 cm

C) 20 cm D) 25 cm

6) In the figure the tangent is

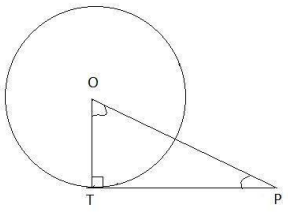


A) TU B) PQ C) OA D) RS

7) Number of tangents drawn to a circle at any point on the circle is

A) 1 B) 2 C) 3 D) 4

8) If the figure $'O'$ is the centre of the circle . PT is the tangent. If $\angle TPO = 30°$ then $\angle POT$ is

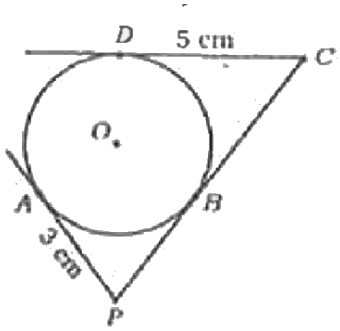


A) 30° B) 60° C) 90° D) 120°

9) Angle between the radius and tangent at the point of intersect is

A) 30° B) 60° C) 90° D) 180°

10) PA, PC and CD are tangents drawn to a circle with centre $'O'$. $AP = 3\ cm$, $CD = 5\ cm$ then the length of PC is



A) 3 cm B) 5 cm C) 8 cm D) 2 cm

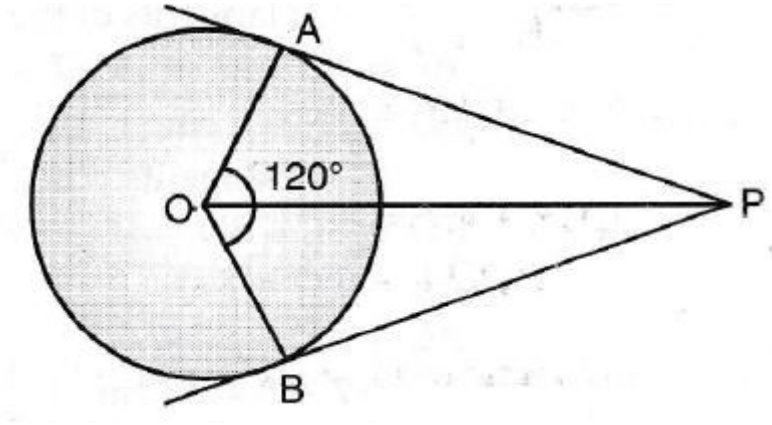
11) A tangent is drawn from a point 13 cm away from the centre of the circle whose radius is 5 cm. then the length of the tangents is

A) 3 cm B) 8 cm C) 12 cm D) 17 cm

12) A tangent intersect the circle at ____point

A) 1 B) 2 C) 3 D) 4

13) In the figure $\angle AOB = 120°$ then $\angle APO$

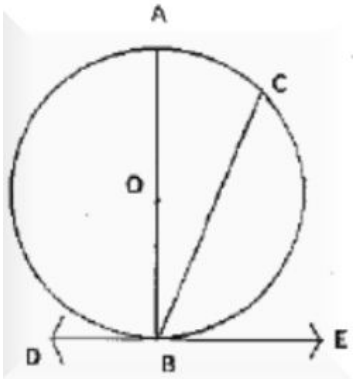


A) 30° B) 60° C) 90° D) 120°

14) A straight line passing through a point on a circle is

A) $a\ tangent$ B) $a\ sectant$ C) $a\ radius$ D) $a\ diameter$

15) In the figure BC is



A) $radius$ B) $chord$ C) $diameter$ D) $secant$

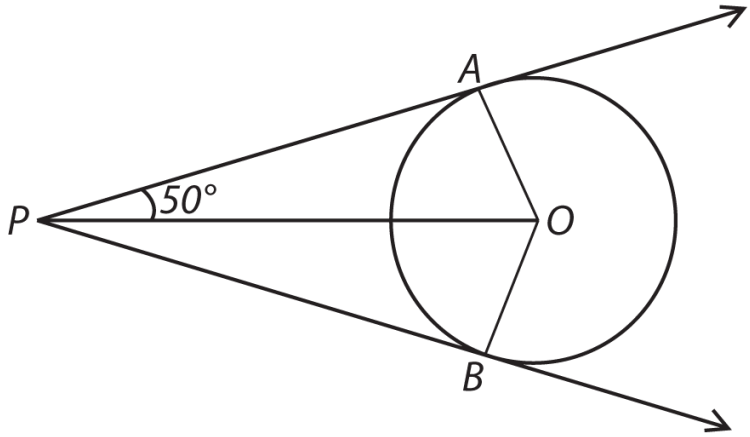
16) Radii of two concentric circles are 5 cm and 3 cm respectively. The length of the chord of the larger circle which touches the smaller circle is

A) 8 cm B) 2 cm C) 4 cm D) 16 cm

17) Number of tangents drawn to a circle from an internal point P is

A) 0 B) 1 C) 2 D) 3

18) In the figure $\angle APO = 50°$ then $\angle BOP =$



A) 40° B) 50° C) 80° D) 20°

19) A tangent PQ at a point P of a circle of radius 5 cm meets a line through the centre at a point Q so that $OQ = 12\ cm$, the length of PQ is

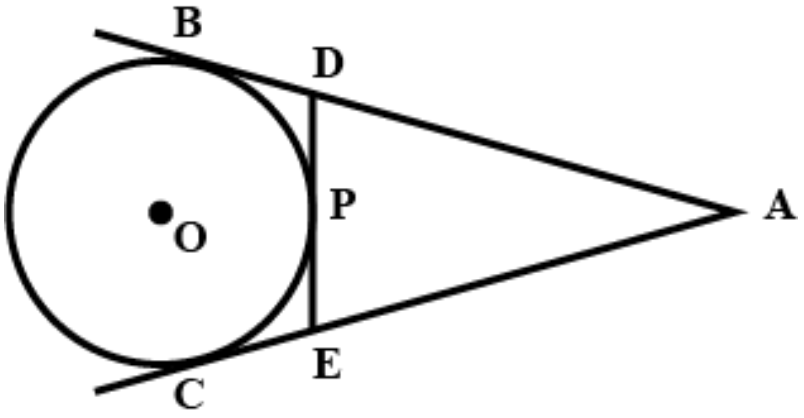
A) 12 cm B) 13 cm C) 8.5 cm D) $\sqrt{119}\ cm$

20) The tangent at any point of a circle is ____to the radius through the point of contact.

A) $parallel$ B) $perpendicular$

C) $tangential$ D) $sqaure$

21) In the figure perimeter of ΔADE is 20 cm, then the length of $AB + AC$ is



A) 20 cm B) 10 cm C) 40 cm D) 5 cm

22) If a parallelogram circumscribes a circle then it is a

A) $square$ B) $rectangle$

C) $rhombus$ D) $none\ of\ the\ above$

23) Number of parallel tangents drawn to a circle is

A) 3 B) 2 C) 1 D) $infinite$

24) A tangent is drawn from a point 5 cm away from the centre of circle whose radius is 3 cm ,then the length of tangent is

A) 7 cm B) 5 cm C) 4 cm D) 3 cm

25) The dstance between the points of contact of parallel tangents to a given circle of radius 6 cm is

A) 6 cm B) 12 cm C) 9 cm D) 18 cm

Answers				
1	**2**	**3**	**4**	**5**
B	**C**	**B**	**A**	**B**
6	**7**	**8**	**9**	**10**
D	**A**	**B**	**C**	**C**
11	**12**	**13**	**14**	**15**
C	**A**	**B**	**A**	**B**
16	**17**	**18**	**19**	**20**
A	**A**	**A**	**D**	**B**
21	**22**	**23**	**24**	**25**
A	**C**	**D**	**C**	**B**

Constructions

Multiple Choice Questions:

1) To divide a line segment AB in the ratio $3:4$,first a ray AX is drawn so that $\angle BAX$ is an acute angle and then at equal distance points are marked on the ray AX such that the minimum number of points. These points is

   A) 3 B) 4 C) 7 D) 9

2) Two draw a pair of tangents to a circle which are inclined to each other at an angle of $60°$,it is required to draw tangents at end points of those two radii of the circle. The angle between then shoud be

   A) $135°$ B) $90°$ C) $60°$ D) $120°$

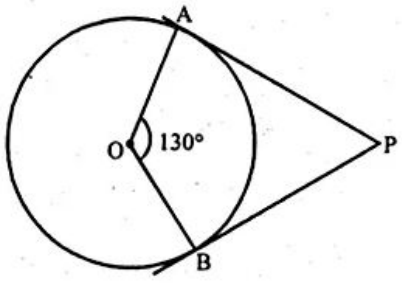
3) A pair of tangents can be constructed from a point P to a circle of radius 3.5 cm situated at a distance____from the centre

   A) 5 cm B) 2 cm C) 3 cm D) 3.5 cm

4) To construct a triangle ABC and then a triangle similar to it whose sides are $\frac{2}{3}$ of the corresponding sides of the first triangle. A ray AX is drawn where multiple points at equal distances are located. The last point to which B will meet the ray AX will be

   A) A_1 B) A_2 C) A_3 D) A_4

5) In the figure, if $\angle AOB = 130°$,then $\angle APB =$



   A) $90°$ B) $60°$ C) $50°$ D) $80°$

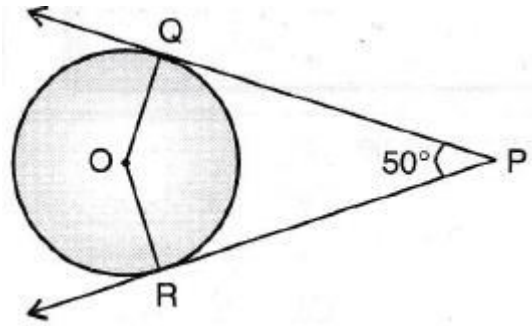
6) To divide the line segment AB of length 7.6 cm in the ratio $5:8$. A ray AX is drawn first such that $\angle BAX$ forms an acute angle and then the points A_1, A_2, A_3 ...are located at equal distance on the ray AX. The point B is joined to

   A) A_5 B) A_8 C) A_{10} D) A_{13}

7) To construct a triangle similar to given ΔPQR with it sides $\frac{9}{5}$ of the corresponding sides of a $\angle RQX$ is an acute angle . The minimum number of points to be located at equal distances on ray QX is

A) 5 B) 9 C) 10 D) 14

8) In the figure the measure of $\angle PQO$ is



A) 130° B) 90° C) 65° D) 80°

9) To draw a pair of tangents to a circle which are inclined to each other at an angle of 135°, it is required to draw tangents at the end points of those two radii of the centre, the angle between which is

A) 45° B) 65° C) 55° D) 35°

10) A pair of tangents can be constructed from a point P to a circle of radius 5 cm situated at a distance of _____from the centre

A) 2.5 cm B) 3 cm C) 4 cm D) 8 cm

****

Answers				
1	**2**	**3**	**4**	**5**
C	**D**	**A**	**C**	**C**
6	**7**	**8**	**9**	**10**
D	**B**	**B**	**A**	**D**

Coordinate Geometry

Multiple Choice Questions :

1) The distance of the point P ($3, 4$) from y-axis is

   A) 3 units B) 4 units C) 5 $units$ D) 7 units

2) The distance of the point P ($3, 4$) from x-axis is

   A) 3 units B) 4 units C) 5 $units$ D) 7 units

3) The distance between the origin and co-ordinates of a point (x, y) is

   A) $x^2 + y^2$ B) $\sqrt{x^2 - y^2}$ C) $x^2 - y^2$ D) $\sqrt{x^2 + y^2}$

4) The distance between the origin and point (x, y) is

   A) $\sqrt{x^2 - y^2}$ B) $\sqrt{(x + y)^2}$ C) $\sqrt{(x - y)^2}$ D) $\sqrt{x^2 + y^2}$

5) If P is the mid-point of the line segment joining A ($1, 4$) and B ($3, 6$) then the co-ordinates of P is

   A) (4,10) B) (2,10) C) (2,5) D) (4,5)

6) The co-ordinates of the mid-point of the line segment joining the points ($2, 3$) and ($4, 7$) are

   A) $(-3, -5)$ B) (1,2) C) (3,5) D) (6,10)

7) The distance between the co-ordinates of a point (p, q) from the origin is

   A) $p^2 - q^2$ B) $\sqrt{p^2 - q^2}$ C) $\sqrt{p^2 + q^2}$ D) $q^2 - p^2$

8) The distance between the origin and the point ($-12, 5$) is

   A) 13 units B) -12 units C) 10 $units$ D) 5 units

9) The distance between the origin and the point ($4, -3$) is

   A) 1 unit B) 5 units C) 7 $units$ D) -12 units

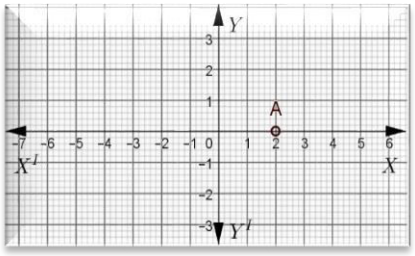
10) The distance between the points ($2, 3$) and ($6, 6$) is

   A) 5 units B) 7 units C) 9 $units$ D) 10 units

11) The distance of the co-ordinate $p(4,3)$ from the x- axis is :

A) 2 units B) 3 units C) 4 $units$ D) 5 units

12) In the given graph. The co-ordinate of point A is :



A) $(-1,0)$ B) $(1,-1)$ C) $(0,2)$ D) $(2,0)$

13) The coordinates of origin are

A) $(0,0)$ B) $(0,1)$ C) $(1,0)$ D) $(1,1)$

14) The coordinates of the point of intersection of $x-axis$ and $y-axis$ are

A) $(0,0)$ B) $(0,1)$ C) $(1,0)$ D) $(1,1)$

15) The distance of the point $(3,4)$ from $x-axis$ is

A) 3 $units$ B) 4 $units$ C) 1 $unit$ D) 7 $units$

16) The distance of the point $(5,-2)$ from $x-axis$ is

A) 1 $unit$ B) 2 $units$ C) 3 $units$ D) 4 $units$

17) The distance of the point $(3,4)$ from $y-axis$ is

A) 3 $units$ B) 4 $units$ C)7 $units$ D) 1 $unit$

18) The distance of the point $(3,4)$ from $origin$ is

A) 3 $units$ B)4 $units$ C) 5 $units$ D)1 $unit$

19) The distance of the point (α,β) from origin is

A) $\alpha+\beta$ B) $\alpha^2+\beta^2$ C) $\sqrt{\alpha^2-\beta^2}$ D) $\sqrt{\alpha^2+\beta^2}$

20) The distance between the point (x_1, y_1) and (x_2, y_2) is

A) $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ B) $\sqrt{(x_2 + x_1)^2 + (y_2 - y_1)^2}$

C) $\sqrt{(x_2 - x_1)^2 + (y_2 + y_1)^2}$ D) $\sqrt{(x_2 + x_1)^2 + (y_2 + y_1)^2}$

21) If the points $(0,0), (a, 0), (0, b)$ are collinear , then

A) $a = b$ B) a + b = 0 C) $ab = 0$ D) a ≠ 0

22) Find the ratio in which the point $(4,8)$ divides the line segment joining the points $(5,7)$ and $(3,9)$

A) 1: 1 B) 1: 2 C) 1: 2 D) 1: 3

23) Find the ratio in which the point $(4,8)$ divides the line segment joining the points $(8,6)$ and $(0,10)$

A) 1: 1 B) 1: 2 C) 1: 2 D) 1: 3

24) In which quadrant does the point $(3, -3)$ lie ?

A) *I* B) II C) *III* D) IV

25) The area of the triangle whose vertices are (2,3), (2,4) and (2,5) is

A) 0 sq.units B) 2 sq.units C) 6 sq.units D) 12 sq.units

26) The coordinates of the mid point of the line segment joining $(-8,13)$ and $(x, 7)$ is $(4,10)$. Find the value of x

A) 16 B) 10 C) 4 D) 8

27) The coordinates of the midpoint of the line segment joining the points (x_1, y_1) and (x_2, y_2) are

A) $(x_1 + x_2, y_1 + y_2)$ B) $\left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$

C) $\left(\frac{x_1+x_2}{4}, \frac{y_1+y_2}{4}\right)$ D) (x_1x_2, y_1y_2)

28) The coordinates of the point which divides the join of (x_1, y_1) and (x_2, y_2) in the ratio $m_1 : m_2$ internally , are

A) $\left(\frac{m_1x_2+m_2x_1}{m_1+m_2}, \frac{m_1y_2+m_2y_1}{m_1+m_2}\right)$

B) $\left(\frac{m_1x_2-m_2x_1}{m_1-m_2}, \frac{m_1y_2-m_2y_1}{m_1-m_2}\right)$

C) $\left(\frac{m_1x_2+m_2x_1}{m_1-m_2}, \frac{m_1y_2+m_2y_1}{m_1-m_2}\right)$

D) $\left(\frac{m_1x_2-m_2x_1}{m_1+m_2}, \frac{m_1y_2-m_2y_1}{m_1+m_2}\right)$

29) What is the area of triangle formed by the points $(0,0), (3,0)$ and $(0,4)$?

A) 6 B) 12 C) 3 D) 24

30) The perimeter of the triangle with vertices $(0,0), (3,0)$ and $(0,4)$ is

A) $7 + \sqrt{5}$ B) 5 C) 10 D) 12

Answers					
1	**2**	**3**	**4**	**5**	**6**
A	**B**	**D**	**D**	**C**	**C**
7	**8**	**9**	**10**	**11**	**12**
C	**A**	**B**	**A**	**B**	**D**
13	**14**	**15**	**16**	**17**	**18**
A	**A**	**C**	**B**	**A**	**C**
19	**20**	**21**	**22**	**23**	**24**
D	**A**	**A**	**A**	**A**	**D**
25	**26**	**27**	**28**	**29**	**30**
A	**A**	**B**	**A**	**A**	**D**

Quadratic equations

Multiple Choice Questions :

1) The roots of quadratic equation $(x-4)(2x-1)=0$ are

A) $\frac{1}{2}$, 4 B) 4, $-\frac{1}{2}$ C) -4, $-\frac{1}{2}$ D) $\frac{1}{2}$, -4

2) The sum of the the squares of consecutive natural numbers is 13. The quadratic equation of this statement is

A) $x^2+x+13=0$ B) $x^2-x-6=0$

C) $x^2+x-6=0$ D) $x^2-x+25=0$

3) Standard form of a quadratic equation is

A) $ax+bx^2-c=0$ B) $ax^2+by+c=0$

C) $ax^2+bx+c=0$ D) $bx^2+c=a$

4) The discriminant of the quadratic equation $3x^2-5x+2=0$ is

A) 1 B) 2 C) 3 D) 4

5) The factors of the quadratic equation $x^2-5x+6=0$ are

A) $(x+2)(x+3)$ B) $(x-5)(x-6)$

C) $(x-3)(x-2)$ D) $(x+3)(x-2)$

6) One of the roots of the quadratic equation $x^2-81=0$ is

A) 7 B) 8 C) 9 D) 10

7) The values of a, b, c when the quadratic equation $7x^2-5x=3$ is written in the standard form, are respectively,

A) $7, 3, 5$ B) $3, -5, 7$ C) $7, 3, -5$ D) $7, -5, -3$

8) The maximum number of roots, that a quadratic equation can have

A) 4 B) 3 C) 2 D) 1

9) Which of the following statement is wrong regarding the quadratic equation $ax^2 + bx + c = 0$:

A) Roots are equal if, $b^2 - 4ac = 0$

B) Roots are not real if, $b^2 - 4ac < 0$

C) Roots are real and different if, $b^2 - 4ac > 0$

D) Roots are equal if, $b^2 - 4ac < 0$

10) The degree of a quadratic equation is

A) 1 B) 2 C) 3 D) 4

11) Roots of the quadratic equation $m^2 + 2m - 3 = 0$ are

A) $-3, 1$ B) $2, -3$ C) $3, -1$ D) $3, -2$

12) The discriminant of a quadratic equation is

A) $b^2 - 2ac$ B) $b^2 - ac$ C) $b^2 - 4ac$ D) $a^2 - 4bc$

13) Choose the quadratic equation among these

A) $x\,(x + 1) = 0$ B) $2x + 7 = y$

C) $x^2 - x(x + 4) = 0$ D) $2(x - 3) = 0$

14) If the quadratic equation $x^2 + px + 4 = 0$ has two equal roots, then the value of 'p' is

A) 3 B) 4 C) 5 D) 6

15) The discriminant of the quadratic equation $5x^2 - 3x + 1 = 0$ is

A) -5 B) -7 C) -9 D) -11

16) If the roots of the quadratic equation $x^2 - 8x + m = 0$ are equal, then the value of 'm' is

A) 4 B) 8 C) 12 D) 16

17) The standard form of a pure quadratic equation

A) $ax + c = 0$ B) $ax^2 + bx = 0$

C) $ax^2 + c = 0$ D) $ax^2 = bx$

18) One of the roots of the equation $2x^2$=50 is

A) 2 B) 3 C) 4 D) 5

19) Discriminant of the quadratic equation $3x^2 - 2x + \frac{1}{3} = 0$ is

A) 0 B) 1 C) 2 D) 3

20) The standard form of the equation $8x = -7x^2 + 3$ is

A) $8x + 7x^2 - 3 = 0$ B) $7x^2 + 8x - 3 = 0$

C) $7x^2 - 8x - 3 = 0$ D) $7x^2 + 8x + 3 = 0$

Answers				
1	**2**	**3**	**4**	**5**
A	**C**	**C**	**A**	**C**
6	**7**	**8**	**9**	**10**
C	**D**	**C**	**D**	**B**
11	**12**	**13**	**14**	**15**
A	**C**	**A**	**B**	**D**
16	**17**	**18**	**19**	**20**
D	**C**	**D**	**A**	**B**

Introduction to Trigonmetry

Multiple Choice Questions :

1. If $13 \sin\theta = 12$ then the value of $cosec\ \theta$ is

   A) $\frac{12}{5}$ B) $\frac{13}{5}$ C) $\frac{12}{13}$ D) $\frac{13}{12}$

2. Value of $\frac{1-tan^2 45°}{1+tan^2 45°}$ is

   A) $\tan 90°$ B) 1 C) $\sin 45°$ D) 0

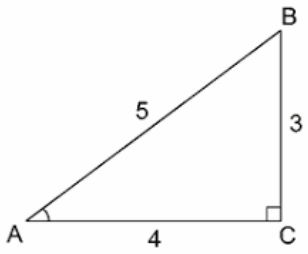
3. Value of $\cos 48° - \sin 42°$ is

   A) 1 B) 0 C) 2 D) -1

4. $10sec^2 A - 10tan^2 A$ is equal to

   A) 1 B) 9 C) 10 D) -10

5. In the adjoining figure , the value of $\cos A$



   A) $\frac{3}{4}$ B) $\frac{4}{5}$ C) $\frac{3}{5}$ D) $\frac{5}{4}$

6. Value of $\tan\theta - \cot(90° - \theta)$ is equal to

   A) 1 B) 0 C) 2 D) -1

7. $1 + cot^2(90° - \theta)$ is equal to

   A) $cos^2\theta$ B) $tan^2\theta$ C) $sec^2\theta$ D) $cose^2\theta$

8. The value of $\sin 90° - \tan 45°$ is

   A) $\frac{1}{2}$ B) 0 C) 1 D) 2

9. If $\tan A = \frac{4}{3}$ then the value of cosA is

A) $\frac{3}{4}$ B) $\frac{5}{3}$ C) $\frac{3}{5}$ D) $\frac{4}{5}$

10. The value of $\sin 90° + \tan 45°$ is

A) 1 B) 0 C) 2 D) 3

11. $15 \cot A = 8$ then $\tan A$ value is

A) $\frac{8}{17}$ B) $\frac{15}{8}$ C) $\frac{8}{15}$ D) $\frac{15}{17}$

12. $cosec^2\theta - cot^2\theta$ is equal to

A) -1 B) 1 C) 0 D) 2

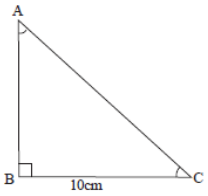
13. If $5 \cos A = 3$ then the value of $\sec A$ is

A) $\frac{3}{5}$ B) $\frac{5}{3}$ C) $\frac{4}{3}$ D) $\frac{4}{5}$

14. $\sin 60° \times \cos 30°$ is equal to

A) $\frac{1}{4}$ B) $\frac{\sqrt{3}}{4}$ C) $\frac{3}{4}$ D) $\frac{1}{2}$

15. In the figure $\angle B = 90°, \angle A = \angle C$ and $BC = 10\ cm$ then the value of $\tan 45°$ is



A) 0 B) 1 C) 2 D) $\frac{1}{2}$

16. $(secA + tanA)(1 - sinA)$ is equal to

A) $\sec A$ B) $\sin A$ C) $cosec\ A$ D) $\cos A$

17. $\sin(90° - \theta)$ is equal to

A) $\sec\theta$ B) $\cos\theta$ C) $cosec\ \theta$ D) $\tan\theta$

18.If $sinA = \frac{1}{\sqrt{2}}$ then the magnitude of $\angle A$

A) 90° B) 60° C) 30° D) 45°

19.The value of $\sin 60° \cos 30° + \sin 30° \cos 60°$ is

A) 2 B) 0 C) 1 D) -1

20. If $\tan\theta = \frac{7}{8}$ then the value of $\frac{(1+\sin\theta)(1-\sin\theta)}{(1+\cos\theta)(1-\cos\theta)}$ is

A) $\frac{7}{8}$ B) $\frac{8}{7}$ C) $\frac{64}{49}$ D) $\frac{49}{64}$

Answers				
1	**2**	**3**	**4**	**5**
D	**D**	**B**	**C**	**B**
6	**7**	**8**	**9**	**10**
B	**C**	**B**	**C**	**C**
11	**12**	**13**	**14**	**15**
B	**B**	**B**	**C**	**B**
16	**17**	**15**	**19**	**20**
D	**B**	**D**	**C**	**C**

Some Applications of Trigonmetry

Multiple Choice Questions:

1) The shadow of a tower is equal to its height. The sun's altitude is

   A) 30° B) 45° C) 60° D) 90°

2) The angle of elevation of the top of a tower from a point on the ground which is 30 m away from the foot of the tower is 30° . The length of the tower is

   A) $\sqrt{3}\,m$ B) $2\sqrt{3}m$ C) $5\sqrt{3}m$ D) $10\sqrt{3}m$

3) The upper part of a tree is broken by the wind and makes an angle of 30° with the ground. The distance from the the foot of the point where the top touches the ground is 5 m The height of the tree is

   A) $\sqrt{3}\,m$ B) $\frac{5}{\sqrt{3}}m$ C) $\frac{10}{\sqrt{3}}m$ D) $\frac{15}{\sqrt{3}}m$

4) The angle formed by the line of sight with the horizontal when the object is above the the horizontal level, that is when we raise our head to look at the object is

   A) angle of elevation B) angle of depression

   C) line of sight D) horizontal level

5) A circus artist climbing a 20 m rope which is tightly stretched and tied from the top of a vertical pole to the ground. If the angle made by the rope with the ground level is 30°. The height of the pole is

   A) 10 m B) 20 m C) 40 m D) $\frac{20}{\sqrt{3}}$

6) If the length of the shadow of a tree is decreasing then the angle of elevation

A) increasing B) decreasing

C) remains same D) none of the above

7) The angle of levation of the top of a point on the ground which is 30 m away from the foot of the buildind is 30°. The height of the building is

A) 10 m B) $\frac{30}{\sqrt{3}}\ m$ C) $\frac{\sqrt{3}}{10}\ m$ D) $30\sqrt{3}\ m$

8) If a tower 6 m high casts a shadow of $2\sqrt{3}\ m$ long on the ground, then the sun's elevation is

A) 60° B) 45° C) 30° D) 90°

9) 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) line of sight D) none of the above

10) From a point on the ground which is 15 m away from the foot of the tower the angle of elevation of the top of the tower is found to 60°. The height of the tower is

A) $10\sqrt{3}\ m$ B) $15\sqrt{3}\ m$ C) $12\sqrt{3}\ m$ D) $20\sqrt{3}\ m$

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Answers				
1	**2**	**3**	**4**	**5**
B	**D**	**D**	**A**	**A**
6	**7**	**8**	**9**	**10**
A	**D**	**A**	**B**	**B**

Statistics

Multiple Choice Questions :

1) The empirical relationship between the three measures of central tendency is

A) $2\ Median = Mode + 3Mean$

B) $3\ Median = Mode + 2Mean$

C) $Median = Mode + Mean$

D) $Median = Mode - Mean$

2) The median of the scores 5,8,14,16,19 and 20 is

A) 14 B) 16 C) 15 D) 8

3) The modal class in the following frequency distribution is

Class Interval	Frequency
$5-15$	2
$15-25$	3
$25-35$	6
$35-45$	5
$45-55$	4

A) $15-25$ B) $25-35$ C) $35-45$ D) $45-55$

4) The mean of 5,15,8,12,13,7 is

A) 60 B) 70 C) 10 D) 30

5) Using this formula to find the mode of grouped data

A) $l - \left[\frac{f_1 - f_0}{2f_1 - f_0 - f_2}\right] \times h$ B) $l + \left[\frac{f_1 + f_0}{2f_1 - f_0 - f_2}\right] \times h$

C) $l + \left[\frac{f_1 - f_0}{2f_1 + f_0 - f_2}\right] \times h$ D) $l + \left[\frac{f_1 - f_0}{2f_1 - f_0 - f_2}\right] \times h$

6) The mode and mean of given data are 9 and 6 respectively, then the median is

A) 6.5 B) 7 C) 7.5 D) 8

7) If the following figure represents "less than type" and "more than type" of ogive graph,then the median is

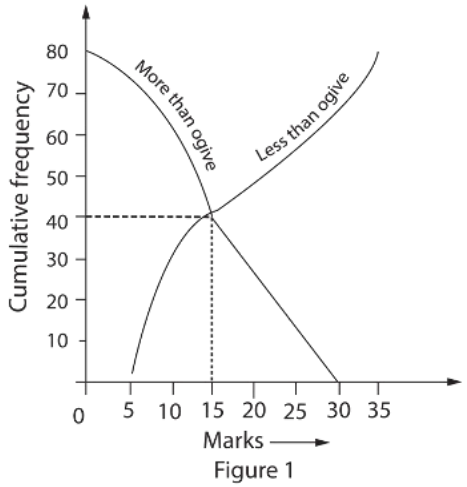


Figure 1

A) 5 B) 15 C) 30 D) 35

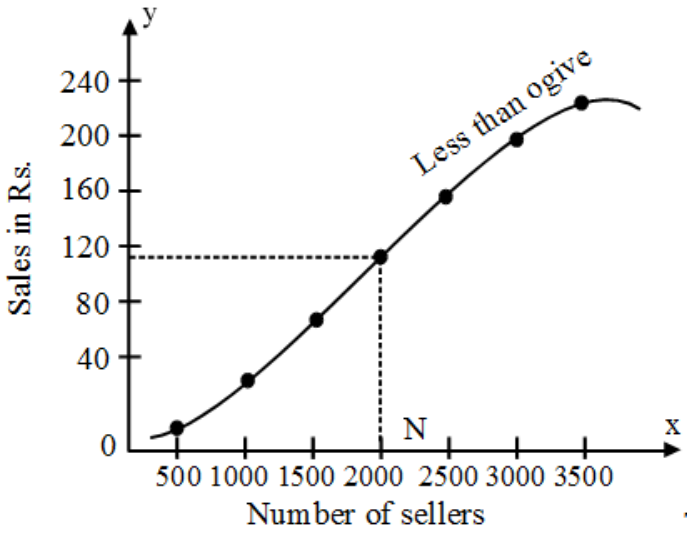
8) $\sum f_i x_i = 325$ and $\sum f_i = 25$ then the mean is

A) 13 B) 15 C) 10 D) 25

9) The mode of the scores 12,11,10,8,11,13,11,15,12 is

A) 10 B) 15 C) 11 D) 12

10) If the following figure represents less than type of ogive graph then the median is



A) 1500 B) 3500 C) 3000 D) 2000

11) The size of class intervals of $20-40, 40-60, 60-80$ is

A) 10 B) 20 C) 30 D) 40

12) The mean and median of given data are 20 and 22 repectively,then the mode is

A) 20 B) 26 C) 22 D) 21

13) In a distribution "more than type" and "less than type" ogive are intersecting at a point (15,20) then the value of median is

A) 10 B) 20 C) 15 D) 35

14) The class mark of $30 - 45$ is

A) 37.5 B) 27.5 C) 40 D) 35

15) In the following below the measures of central tendencies are

A) $Mean, Mode, standard\ deviation$

B) $Range, Median, Mode$

C) $Range, Mean, Mode$

D) $Mean\ Mode, Median$

Answers				
1	**2**	**3**	**4**	**5**
B	**C**	**B**	**A**	**D**
6	**7**	**8**	**9**	**10**
B	**B**	**A**	**C**	**D**
11	**12**	**13**	**14**	**15**
B	**B**	**C**	**A**	**D**

SURFACE AREAS AND VOLUMES

Multiple choice questions:

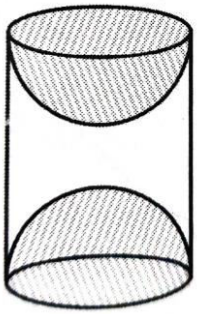
1. The formula to find total surface area of a cylinder is

   A) $2\pi rh$ B) $2\pi r(r+h)$ C) $2\pi r^2$ D) $2\pi r^2 h$

2. The volume of two cubes is in the ratio $64:125$. The ratio of their total surface areas is

   A) $16:25$ B) $4:5$ C) $4:6$ D) $8:25$

3. A wooden article is made by scooping out hemisphere from each end of the solid cylinder. The total surface area of the article is



   A) $2\pi rh + 4\pi r^2$ B) $2\pi \mathrm{rh} + \pi r^2$ C) $2\pi rh + 2\pi r^2$ D) $2\pi r(r+h)$

4. If the volume of a cone is $72\ cm^3$ then the volume of a cylinder with same base and height as that of the cone is

   A) $524\ cm^3$ B) $616\ cm^3$ C) $144\ cm^3$ D) $216\ cm^3$

5. Surface area of a sphere of radius $7\ cm$ is

   A) $616\ cm^2$ B) $161\ cm^2$ C) $49\ cm^2$ D) $132\ cm^2$

6. The formula to find the lateral surface area of a frustum of a cone is

   A) $\pi(r_1 + r_2)h$ B) $\pi(r_1 - r_2)h$ C) $\pi(r_1 + r_2)l$ D) $\pi(r_1 - r_2)l$

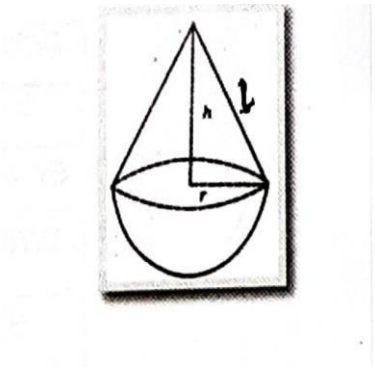
7. If the volume of a cube is 64 cm^3 then the length of its edges is

   A) 8 cm B) 16 cm C) 4 cm D) 32 cm

8. If the area of the base of a cylinder is 38 cm^2 and height 4cm, then the volume of the cylinder is

   A) 152 cm^3 B) 9.5 cm^3 C) 132 cm^3 D) 144 cm^3

9. The total surface area of the article in the given figure is



   A) $3\pi r^2 + \pi rl$ B) $2\pi r^2 + \pi rl$ C) $2\pi rh + \frac{2}{3}\pi r^3$ D) $\pi r^2 h + \pi rl$

10. If the volume of two spheres is in the ratio 27: 64, then the ratio of their radii is

    A) 3: 4 B) 4: 32 C) 1: 4 D) 3: 8

11. The formula to find volume of a sphere is

    A) $\frac{2}{3}\pi r^3$ B) $\frac{4}{3}\pi r^3$ C) $\pi r^2 h$ D) $\frac{1}{3}\pi r^3$

12. A cylinder of volume 156 cm^3 is melted to form three cones with equal base and height ,then the volume of each cone is

    A) 78 cm^3 B) 56 cm^3 C) 52 cm^3 D) 156 cm^3

13. The lateral surface area of a cone with base radius 5cm and slant height 7cm is

    A) 110 cm^2 B) 220 cm^2 C) 330 cm^2 D) 440 cm^2

14. A vessel is in the shape of a cylinder surmounted on a hemisphere. The surface area of the vessel is

A) $2\pi r^2 + \pi rl$ B) $2\pi r^2 + \pi r^2 h$ C) $2\pi r^2 + 2\pi rh$ D) $\pi r^2 + 2\pi rh$

15. The circumference of a circle is $88cm$, then its radius is

A) $7\ cm$ B) $14\ cm$ C) $21\ cm$ D) $28\ cm$

16. If the volume of a cylinder is 300 cm^3 , the volume of a cone having same radius and height as that of the cylinder is

A) $900\ cm^3$ B) $600\ cm^3$ C) $150\ cm^3$ D) $100\ cm^3$

17. The formula to find the volume of a frustum of a cone is

A) $\frac{1}{3}\pi h({r_1}^2 + {r_2}^2 + r_1 r_2)$ B) $\frac{1}{3}\pi h(r_1 + r_2 + r_1 r_2)$

C) $\frac{1}{3}\pi h(r_1 + r_2 + 2r_1 r_2)$ D) $\frac{1}{3}\pi h({r_1}^2 + {r_2}^2 + 2r_1 r_2)$

18. A capsule is in the shape of a cylinder with hemisphere attached to both the base. The total surface area of the capsule

A) $2\pi r^2 + 2\pi rh$ B) $4\pi r^2 + \pi r^2 h$ C) $4\pi r^2 + 2\pi rh$ D) $\pi r^2 + 2\pi rh$

19. The radius of a sphere whose surface area is $616\ cm^2$

A) $8\ cm$ B) $7\ cm$ C) $9\ cm$ D) $6\ cm$

20. A solid is in the shape of a cone mounted on a cylinder with both their radii equal to 4cm.If the total height of the solid is 8cm and height of the cylinder is 5cm, then the slant height of the cone is

A) $3\ cm$ B) $4\ cm$ C) $5\ cm$ D) $6\ cm$

21. The formula to find the total surface area of a cone is

A) $2\pi rl$ B) $2\pi r(r+l)$ C) $\pi r^2 l$ D) $\pi r(r+l)$

22. The slant height of a frustum of a cone of height $8cm$ and base radii 10 cm and $4cm$ is

A) 10 cm B) 8 cm C) 4 cm D) 12 cm

23. Two cubes with edges measuring 'a' units is placed one over the other. The total surface area of the solid is

A) $12a^2$ B) $10a^2$ C) $8\,a^2$ D) $6a^2$

24. The total surface area of a hemisphere with radius 7cm is

A) 462 cm^2 B) 490 cm^2 C) 420 cm^2 D) 700 cm^2

25. Three metallic spheres of radii 3cm, 4cm, 5cm are melted to form a single solid sphere.The radii of the resulting sphere is

A) 6 cm B) 7 cm C) 8 cm D) 12 cm

Answers				
1	**2**	**3**	**4**	**5**
B	**A**	**A**	**D**	**A**
6	**7**	**8**	**9**	**10**
C	**C**	**A**	**B**	**A**
11	**12**	**13**	**14**	**15**
B	**C**	**A**	**C**	**B**
16	**17**	**15**	**19**	**20**
D	**A**	**C**	**B**	**C**
21	**22**	**23**	**24**	**25**
D	**A**	**B**	**A**	**A**