## Class-X   (Syllabus and Sample Question Paper)

Number System, Polynomials, Linear Equation, Quadratic Equation, Coordinate Geometry, Binomial Theorem, Statistics, Trigonometry, Circles, Triangles, Probability, Sequence and Series, Mensuration, Mathematical Reasoning and Logical Ability, Sets, Everyday Mathematics

The Actual Question Paper Contains 40 Questions. The Duration of the Test Paper is 60 Minutes

1. The slant height of the frustum of a cone is 4 cm and the perimeter of circular ends are 18 cm and 6 cm. The curved surface area of the frustum is?

(A) 45 cm² (B) 46 cm² (C) 47 cm² (D) 48 cm²

(E) None of these

2. ABC is a quadrant of a circle of radius 14 cm. If a semicircle is drawn with BC as diameter, then the area of the shaded region will be?
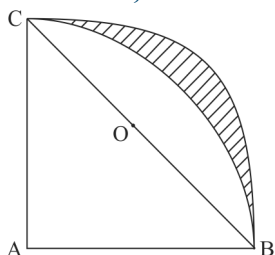
(A) 96 cm² (B) 49 cm² (C) 98 cm² (D) 115 cm²

(E) None of these

3. If the roots equation $(a - b) x^2 + (b - c) x + c = 0$ are equal, then?

(A) $2b = a + c$ (B) $2a = b + c$ (C) $2c = a + b$ (D) $2a = b - c$

(E) None of these

4. If points $(a, 0)$, $(0, b)$ and $(1, 1)$ are collinear, then which of the following is correct?

(A) $\frac{1}{a} + \frac{1}{b} = 2$ (B) $\frac{1}{a} - \frac{1}{b} = 1$ (C) $\frac{1}{a} - \frac{1}{b} = 2$ (D) $\frac{1}{a} + \frac{1}{b} = 1$

(E) None of these

5. The midpoint of the line segment AB is (4, -3). Then the co-coordinates of A and B can be?

(A) (8, 0) and (0, -6)   (B) (0, 8) and (0, -6)

(C) (8, 0), and (-6, 0)   (D) (8, 0) and (0, -8)
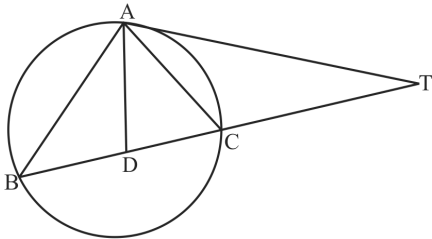
(E) None of these

6. Among two towers T and R, the height of T is 72 meters, which is less than that of R, the angle of depression of the top of T from the top of R is 30°and its angle of elevation from the foot of R is 45°, then the height R is?

(A) $72\sqrt{3}\text{m}$　　　(B) $72\left(1+\sqrt{3}\right)\text{m}$　　　(C) $72\left(1+\dfrac{1}{\sqrt{3}}\right)\text{m}$　　　(D) $72\left(1-\dfrac{1}{\sqrt{3}}\right)\text{m}$

(E) None of these

7. If tanθ= n tanβ and sinθ = msinβ, then cos²θis equal to?

(A) $\dfrac{m-1}{n-1}$　　　(B) $\dfrac{m^2-1}{n^2-1}$　　　(C) $\dfrac{m-1}{n-1}$　　　(D) $\dfrac{n^2-1}{m^2-1}$

(E) None of these

8. In the given figure, TA is a tangent to the circle form point T and TCB is a secant. If AD is the bisector of ∠BAC, then the triangle ADT is ?

(A) Right angled　　　　　　　　　　(B) Isosceles
(C) Equilateral　　　　　　　　　　(D) Right angled isosceles
(E) None of these

9. let S_1 be the sum of first n odd natural numbers and S_2 be the sum of first n even natural numbers then $\dfrac{S_1}{S_2}$ = ?

(A) $\dfrac{3n}{3n+2}$　　　(B) $\dfrac{3n}{3n-2}$　　　(C) $\dfrac{n}{n+1}$　　　(D) 1

(E) None of these

10. Find the greatest number of three digits which when divided by 34 leaves remainder 2.
(A) 994　　　(B) 988　　　(C) 992　　　(D) 954
(E) None of these

11. Two person A and B start running around a circular path. A takes 24 minutes and B takes 18 minutes to complete one round of the path. If both of them starts at the same point, then find, after how many minutes they will meet again at the same starting points.
(A) 64 minutes　　　(B) 80 minutes　　　(C) 90 minutes　　　(D) 72 minutes
(E) None of these

12. Which one of the following options is represented by the polynomial given by $p(x)=ax^2+bx+c$ where $a \pm 0$?

(A) Straight line   (B) Circle   (C) Parabola   (D) Ellipse

(E) None of these

13. For a sequence in A.P., the sum of n terms of the sequence is $\frac{n}{2}(163-7n)$, the 10th term of the sequence is?

(A) 12   (B) 11   (C) 15   (D) 20

(E) None of these

14. The area of metal sheet required to construct a cylindrical drum of height 3.5 meter and radius of the base 1.4 meter is?

(A) $42.26m^2$ (B) $42.26m^2$

(C) $44.53m^2$ (D) $43.08m^2$

(E) None of these

15. A tent is made in such a way that the radius of the base is 1.4 m and height is 3.5 m and is surmounted by a cone whose radius is same as the radius of cylindrical part and height is 2.1 m. The volume of air in the tent is?

(A) 17.96 m^3 (B) 16.56 m^3

(C) 18.48 m^3 (D) 19.96 m^3

(E) None of these

ANSWERS

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