Question Updated

BRINDHAVAN HR SEC SCHOOL,SUKKIRANPATTI

CREATIVE ONE MARK TEST

10th Standard

Maths

Date : 18-09-24

Reg.No. : | | | | | | |

Exam Time : 01:00 Hrs

Total Marks : 50

Multiple Choice Questions

50 x 1 = 50

1) The domain of the function 'f' given by $f(x) = \frac{x^2+2x+1}{x^2-x-6}$ _____

(a) R- {3, -2} (b) R- {-3, 2} (c) R- {3, 2} (d) R - {- 3, - 2}

2) If cos A = $\frac{4}{5}$, then the value of tan A is _____

(a) $\frac{3}{5}$ (b) $\frac{3}{4}$ (c) $\frac{4}{3}$ (d) $\frac{5}{3}$

3) on dividing $\frac{x^2-25}{x+3}$ by $\frac{x+5}{x^2-9}$ is equal to

(a) .(x - 5)(x -3) (b) .(x - 5)(x +3) (c) .(x + 5)(x -3) (d) .(x + 5)(x + 3)

4) If ΔABC is right angled at C, then the value of cos (A + B) is _____

(a) 0 (b) 1 (c) $\frac{1}{2}$ (d) $\frac{\sqrt{3}}{2}$

5) If function f : N⟶N, f(x) = 2x then the function is, then the function is _____

(a) Not one - one and not onto (b) one-one and onto (c) Not one -one but not onto (d) one - one but not onto

6) If 1 + 2+ 3 + . . . + 10 = 55, then, $1^3 + 2^3 + 3^3 + \ldots\ldots 10^3$ = ?

(a) 55^2 (b) 10^2 (c) 55^3 (d) 10^3

7) The quadratic equation whose roots are $2+\sqrt{2}$ and $2-\sqrt{2}$ is _____

(a) $x^2 - 4x + 2 = 0$ (b) $x^2 - 2x + 2 = 0$ (c) $x^2 + 2x - 4 = 0$ (d) $x^2 - 2x + 4 = 0$

8) Find the value of p, given that the line $\frac{y}{2} = x - p$ passes through the point (-4, 4) is _____

(a) -4 (b) -6 (c) 0 (d) 8

9) If t_n is the n^{th} term of an A.P., then $t_{8n} - t_n$ is :

(a) (8n - 1)d (b) (8n - 2)d (c) (7n - 2)d (d) (7nd)

10) In a right angled triangle ABC, right angled at B, if the side BC is parallel to x-axis, then the slope of AB is _____

(a) $\sqrt{3}$ (b) $\frac{1}{\sqrt{3}}$ (c) 1 (d) not defined

11) If sin A = $\frac{1}{2}$, then the value of cot A is _____

(a) $\sqrt{3}$ (b) $\frac{1}{\sqrt{3}}$ (c) $\frac{\sqrt{3}}{2}$ (d) 1

12) The Average of first 100 natural numbers is _____

(a) 5055 (b) 5050 (c) 5550 (d) 5150

13) Composition of function is asssociative _____

(a) Always true (b) Never true (c) Sometimes true (d) None of these

14) $(\text{cosec}^2\theta - \cot^2\theta)(1 - \cos^2\theta)$ is equal to _____

(a) cosec θ (b) $\cos^2\theta$ (c) $\sec^2\theta$ (d) $\sin^2\theta$

15) If n(A) = p; n(B) = q; then the total number of relations that exist between A and B is _____

(a) 2^p (b) 2^q (c) 2^{p+q} (d) 2^{pq}

16) The G.C.D. of a^m, a^{m+1}, a^{m+2} is :

(a) a^m (b) a^{m+1} (c) a^{m+2} (d) 1

17) The LCM of $8x^4y^2z^3, 10xy^3z^5$ and $12x^2y^2z^4$ is

(a) $120x^2y^2z^2$ (b) $120x^4y^3z^5$ (c) $2xy^2z^3$ (d) $120x^3y^3z^5$

18) If $\cos 9\propto = \sin\propto$ and $9\propto < 90^\circ$, then the value of $\tan t\propto$ is

(a) $\frac{1}{\sqrt{3}}$ (b) $\sqrt{3}$ (c) 1 (d) 0

19) The Value of r_1 such that $1 + r + r^2 + r^3 +$_____ = 3/4

(a) 1/3 (b) -1/3 (c) 3 (d) -3

20) If p, q, r, x, y, z are in A.P, then 5p + 3, 5r + 3, 5x + 3, 5y + 3, 5z + 3 form _____

(a) a G.P (b) an A.P (c) a constant sequence (d) neither an A.P nor a G.P

21) The sum of first n odd natural number is _____

(a) 2n -1 (b) 2n + 1 (c) n^2 (d) $n^2 - 1$

22) If $f : R \rightarrow R$ is defined by $(x) = x^2 + 2$, then the preimage 27 are _____

(a) 0.5 (b) 5, -5 (c) 5, 0 (d) $\sqrt{5}, -\sqrt{5}$

23) The equation of straight line having slope 3 and making intercept 4 on the y-axis is _____

(a) 3x - y - 4 = 0 (b) 3x - y + 4 = 0 (c) 3x + y - 4 = 0 (d) 3x + y + 4 = 0

24) The sequence -3, -3, -3 ..... is _____

(a) an A. P only (b) a G.P only (c) neither A.P nor G.P (d) both A.P and G.P

25) The slope of the straight line perpendicular to x-axis is:

(a) 1 (b) 0 (c) ∞ (d) -1

26) If f(x) = 2 - 3x, then f o f(1 - x) = ?

(a) 5x+9 (b) 9x-5 (c) 5-9x (d) 5x-9

27) If ΔABC is an isosceles triangle with right angle C = 90° and AC = 5cm, then AB is _____

(a) 2.5cm (b) 5cm (c) 10cm (d) 4√2cm

28) $\left(x - \frac{1}{x}\right) = x^2 + \frac{1}{x^2}$ then f(x) =

(a) $x^2 + 2$ (b) $x^2 + \frac{1}{x^2}$ (c) $x^2 - 2$ (d) $x^2 - \frac{1}{x^2}$

29) The L.C.M of $x^3 - a^3$ and $(x - a)^2$ is _____

(a) $\left(x^3 - a^3\right)(x + a)$ (b) $\left(x^3 - a^3\right)(x - a)^2$ (c) $(x - a)^2\left(x^2 + ax + a^2\right)$

(d) $(x + a)^2\left(x^2 + ax + a^2\right)$

30) If m and n are the two positive integers then m^2 and n^2 are _____

(a) Co-prime (b) Not co-prime (c) Even (d) odd

31) If tan θ = cot θ the value of sec θ is _____

(a) 2 (b) 1 (c) $\frac{1}{\sqrt{3}}$ (d) $\sqrt{2}$

32) Axis of symmetry in the term of vertical line seperates parabola into _____

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

33) The equation of straight line parallel to y-axis and at a distance 3 units to the right is _____

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

34) The perimeter of a triangle formed by the points (0, 0), (1, 0) and (0, 1) is:

(a) $\sqrt{2}$ (b) 2 (c) $2 + \sqrt{2}$ (d) $2 - \sqrt{2}$

35) If A and B are complementary angles then _____

(a) sin A = sin B (b) cos A = cos B (c) tan A = tan B (d) sec A = cosec B

36) If n(A) = p, n(B) = q then the total number of relations that exist between A and B is _____

(a) pq (b) 2^{pq} (c) q^p (d) p^q

37) If t_n is the n^{th} term of A.P, then $t_{2n} - t_n$ is _____.

(a) 2nd (b) nd (c) a+nd (d) 2a+2nd

38) A sequence is a function defined on the set of _____

(a) real numbers (b) natural numbers (c) whole numbers (d) integers

39) 44 ≡ 8 (mod12), 113 ≡ 85 (mod 12), thus 44 x 113 ≡_____(mod 12):

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

40) Three numbers a, b and c will be in A.P. if and only if _____

(a) 2a = b + c (b) 2b = a + c (c) 2c = a + b (d) none of these

41) The first theorem in Mathematics is _____

(a) Thales Theorem (b) Angle bisector Theorem (c) Pythagoras Theorem (d) Alternative segment Theorem

42) The condition for the lines $a_1x + b_1y + c_1 = 0$ and $a_2x + b_2y + c_2 = 0$ to be perpendicular is _____

(a) $a_1a_2 + b_1b_2 = 0$ (b) $a_1b_1 + a_2b_2 = 0$ (c) $a_1a_2 - b_1b_2 = 0$ (d) $a_1b_1 - a_2b_2 = 0$

43) What can be said regarding a line if its slope is negative?

(a) acute (b) obfuse (c) zero (d) None of these

44) $9\sec^2 A - 9\tan^2 A$ = _____

(a) 1 (b) 9 (c) 8 (d) 0

45) Given $f(x) = (-1)^x$ is a function from N to Z. Then the range of f is _____

(a) {1} (b) N (c) {1 ,-1} (d) Z

46) What is the HCF of the least prime and the least composite number?

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

47) (sec A + tan A)(1 - sin A) is equal to _____

(a) sec A (b) sin A (c) cosec A (d) cos A

48) Find the slope and the y-intercept of the line $3y - \sqrt{3x} + 1 = 0$ is _____

(a) $\frac{1}{\sqrt{3}}, \frac{-1}{3}$ (b) $-\frac{1}{\sqrt{3}}, \frac{-1}{3}$ (c) $\sqrt{3}, 1$ (d) $-\sqrt{3}, 3$

49) The ratio of the areas of two similar triangles is equal to _____

(a) The ratio of their corresponding sides (b) The cube of the ratio of theri corresponding sides

(c) The ratio of theri corresponding attitudes (d) The square of the ratio of their corresponding sides

50) If n(A) = p, n(B) = q then the total number of relations that exist between A and B is _____

(a) 2^p (b) 2^q (c) 2^{P+q} (d) 2^{pq}

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Multiple Choice Questions

50 x 1 = 50

1) (a) $x^2 + 2$

2) (d) one - one but not onto

3) (b) 2^{pq}

4) (c) 5-9x

5) (a) Always true

6) (c) 2^{p+q}

7) (d) 2^{pq}

8) (a) 5055

9) (a) 2a = b + c

10) (a) R- {3, -2}

11) (a) 2nd

12) (a) real numbers

13) (b) 2

14) (a) Co-prime

15) (a) 4

16) (b) an A.P

17) (d) both A.P and G.P

18) (a) 55^2

19) (d) -3

20) (d) (7nd)

21) (c) 2 equal halves

22) (a) 2.5cm

23) (c) $(x-a)^2\left(x^2+ax+a^2\right)$

24) (b) a^{m+1}

25) (c) Pythagoras Theorem

26) (c) $2 + \sqrt{2}$

27) (a) $\frac{1}{\sqrt{3}}, \frac{-1}{3}$

28) (b) obfuse

29) (a) $a_1a_2 + b_1b_2 = 0$

30) (c) ∞

31) (a) $\frac{3}{5}$