Ravi home tutions

11th chapter 1 - 1 mark

Date : 14-Sep-19

11th Standard

Maths

Reg.No. :

Exam Time : 01:14:00 Hrs

Total Marks : 74

74 x 1 = 74

1) The number of constant functions from a set containing m elements to a set containing n elements is
(a) mn (b) m (c) n (d) m+n

2) The function f:[0,2π]→[-1,1] defined by f(x)=sin x is
(a) one-to-one (b) on to (c) bijection (d) cannot be defined

3) If the function f:[-3,3]→S defined by f(x)=x^2 is onto, then S is
(a) [-9,9] (b) R (c) [-3,3] (d) [0,9]

4) Let X={1,2,3,4}, Y={a,b,c,d} and f={f(1,a),(4,b),(2,c),(3,d),(2,d)}. Then f is
(a) an one-to-one function (b) an onto function (c) a function which is not one-to-one (d) not a function

5) The inverse of f(x)= $\begin{cases} x & if \quad x<1 \\ x^2 & if \quad 1\le x\le 4 \\ 8\sqrt{x} & if \quad x>4 \end{cases}$ is

(a) $f^{-1}(x)=\begin{cases} x & if \quad x<1 \\ \sqrt{x} & if \quad 1\le x\le 16 \\ \frac{x^2}{64} & if \quad x>1 \end{cases}$

(b) $f^{-1}(x)=\begin{cases} -x & if \quad x<1 \\ \sqrt{x} & if \quad 1\le x\le 16 \\ \frac{x^2}{64} & if \quad x>16 \end{cases}$

(c) $f^{-1}(x)=\begin{cases} x^2 & if \quad x<1 \\ \sqrt{x} & if \quad 1\le x\le 16 \\ \frac{x^2}{64} & if \quad x>16 \end{cases}$

(d) $f^{-1}(x)=\begin{cases} 2x & if \quad x<1 \\ \sqrt{x} & if \quad 1\le x\le 16 \\ \frac{x^2}{8} & if \quad x>16 \end{cases}$

6) Let f:R→R be defined by f(x)=1-|x|. Then the range of f is
(a) R (b) (1,∞) (c) (-1,∞) (d) (-∞,1]

7) The function f:R→R be defined by f(x)=sinx+cosx is
(a) an odd function (b) neither an odd function nor an even function (c) an even function (d) both odd function and even function

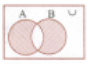
8) The function f:R→R is defined by f(x)=$\frac{(x^2-cosx)(1+x^2)}{(x-sinx)(2x-x^3)}+e^{-|x|}$ is
(a) an odd function (b) neither an odd function nor an even function (c) an even function (d) both odd function and even function.

9) Which one of the following is a finite set?
(a) {x:x∈Z, x< 5} (b) {x:x∈W, x≥5} (c) {x:x∈N, x > 10} (d) {x:x is an even prime number}

10) If A⊆B, then A\B is
(a) B (b) A (c) Ø (d) $\frac{B}{A}$

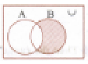
11) Given A={5,6,7,8}. Which one of the following is incorrect?
(a) Ø⊆A (b) A⊆A (c) {7,8,9}⊆A (d) {5}⊆A

12) The shaded region in the adjoining diagram represents.



(a) A\B (b) B\A (c) AΔB (d) A'

13) The shaded region in the adjoining diagram represents.



(a) A\B (b) A' (c) B' (d) B\A

14) Let R be a relation on the set N given by R={(a,b):a=b-2, b > 6}. Then
(a) (2,4)∈R (b) (3,8)∈R (c) (6,8)∈R (d) (8,7)∈R

15) If A={1,2,3}, B={1,4,6,9} and R is a relation from A to B defined by "x is greater than y". The range of R is
(a) {1,4,6,9} (b) {4,6,9} (c) {1} (d) None of these

16) For real numbers x and y, define xRy if x-y+√2 is an irrational number. Then the relation R is
(a) reflexive (b) symmetric (c) transitive (d) none of these

17) Let R be the relation over the set of all straight lines in a plane such that $l_1Rl_2 \Leftrightarrow l_1 \perp l_2$. Then R is
(a) symmetric (b) reflexive (c) transitive (d) an equivalent relation

18) Which of the following is not an equivalence relation on z?
(a) aRb ⇔ a+b is an even integer (b) aRb ⇔ a-b is an even integer (c) aRb ⇔ a< b (d) aRb ⇔ a=b

19) Which of the following functions from z to itself are bijections (one-one and onto)?
(a) f(x)=x^3 (b) f(x)=x+2 (c) f(x)=2x+1 (d) f(x)=x^2+1

20) If A = {(x,y) : y = e^x, x∈R} and B = {(x,y) : y=e^{-x}, x ∈ R} then n(A∩B) is
(a) Infinity (b) 0 (c) 1 (d) 2

21) If A = {(x,y) : y = sin x, x ∈ R} and B = {(x,y) : y = cos x, X ∈ R} then A∩B contains
(a) no element (b) infinitely many elements (c) only one element (d) cannot be determined

22) The relation R defined on a set A= {0,-1, 1, 2} by xRy if $|x^2+y^2| \le 2$, then which one of the following is true?
(a) R = {(0,0), (0,-1), (0, 1), (-1, 0), (-1, 1), (1, 2), (1, 0)} (b) R^{-1} = {(0,0), (0,-1), (0, 1), (-1, 0), (1, 0)} (c) Domain of R is {0,-1, 1, 2} (d) Range of R is {0,-1, 1}

23) If f(x) = |x - 2| + |x + 2|, x ∈ R, then
(a) $f(x)=\begin{cases}-2x\ if\ x\in(-\infty,-2]\\ 4\ if\ x\in(-2,2]\\ 2x\ if\ x\in(2,\infty)\end{cases}$
(b) $f(x)=\begin{cases}-2x\ if\ x\in(-\infty,-2]\\ 4x\ if\ x\in(-2,2]\\ -2x\ if\ x\in(2,\infty)\end{cases}$
(c) $f(x)=\begin{cases}-2x\ if\ x\in(-\infty,-2]\\ -4x\ if\ x\in(-2,2]\\ 2x\ if\ x\in(2,\infty)\end{cases}$
(d) $f(x)=\begin{cases}-2x\ if\ x\in(-\infty,-2]\\ 2x\ if\ x\in(-2,2]\\ 2x\ if\ x\in(2,\infty)\end{cases}$

24) Let R be the set of all real numbers. Consider the following subsets of the plane R x R: S = {(x, y) : y =x + 1 and 0 < x < 2} and T = {(x,y) : x - y is an integer} Then which of the following is true?
(a) T is an equivalence relation but S is not an equivalence relation (b) Neither S nor T is an equivalence relation (c) Both S and T are equivalence relation (d) S is an equivalence relation but T is not an equivalence relation.

25) Let A and B be subsets of the universal set N, the set of natural numbers. Then A'∪[(A∩B)∪B'] is
(a) A (b) A' (c) B (d) N

26) The number of students who take both the subjects Mathematics and Chemistry is 70. This represents 10% of the enrollment in Mathematics and 14% of the enrollment in Chemistry. The number of students take at least one of these two subjects, is
(a) 1120 (b) 1130 (c) 1100 (d) insufficient data

27) If n((A x B) ∩(A x C)) = 8 and n(B ∩ C) = 2, then n(A) is
(a) 6 (b) 4 (c) 8 (d) 16

28) If n(A) = 2 and n(B ∪ C) = 3, then n[(A x B) ∪ (A x C)] is
(a) 2^3 (b) 3^2 (c) 6 (d) 5

29) If two sets A and B have 17 elements in common, then the number of elements common to the set A x B and B x A is
(a) 2^{17} (b) 17^2 (c) 34 (d) insufficient data

30) Let f:Z→Z be given by f(x)= $\begin{cases}\frac{x}{2} & if \quad x \quad is \quad even\\ 0 & if \quad x \quad is \quad odd\end{cases}$. Then f is
(a) one-one but not onto (b) onto but not one-one (c) one-one and onto (d) neither one-one nor onto

31) If f:R→R is given by f(x)=3x-5, then $f^{-1}(x)$ is
(a) $\frac{1}{3x-5}$ (b) $\frac{x+5}{3}$ (c) does not exist since f is not one-one (d) does not exists since f is not onto

32) If f(x)=2x-3 and g(x)=x^2+x-2 then gof(x) is
(a) 2(2x^2-5x+2) (b) (2x^2-5x-2) (c) 2(2x^2+5x+2) (d) 2x^2+5x-2

33) Let f: R→R be given by f(x)=x+$\sqrt{x^2}$ is
(a) injective (b) Surjective (c) bijective (d) none of these

34) For non-empty sets A and B, if A ⊂ B then (A x B) ∩ (B x A) is equal to
(a) A ∩ B (b) A x A (c) B x B (d) none of these.

35) The number of relations on a set containing 3 elements is
(a) 9 (b) 81 (c) 512 (d) 1024

36) Let R be the universal relation on a set X with more than one element. Then R is
(a) not reflexive (b) not symmetric (c) transitive (d) none of the above

37) Let X = {1, 2, 3, 4} and R = {(1, 1), (1, 2), (1, 3), (2, 2), (3, 3), (2, 1), (3, 1), (1, 4),(4, 1)}. Then R is
(a) reflexive (b) symmetric (c) transitive (d) equivalence

38) The range of the function $\frac{1}{1-2sinx}$ is
(a) $(-\infty,-1)\cup\left(\frac{1}{3},\infty\right)$ (b) $\left(-1,\frac{1}{3}\right)$ (c) $\left[-1,\frac{1}{3}\right]$ (d) $(-\infty,-1]\cup\left[\frac{1}{3},\infty\right)$

39) The range of the function $f(x)=\left|\lfloor x\rfloor-x\right|,x\in R$ is
(a) [0, 1] (b) [0, ∞) (c) [0, 1) (d) (0, 1)

40) The rule f(x) =x^2 is a bijection if the domain and the co-domain are given by
(a) R, R (b) R, (0, ∞) (c) (0, ∞); R (d) [0, ∞); [0,∞)

41) The number of reflective relations one set containing n elements is:
(a) 2^{12} (b) 2^4 (c) 2^{16} (d) 2^8

42) The number of relations from a set containing 4 elements to a set containing 3 elements is:
(a) 2^{16} (b) 2^5 (c) 2^7 (d) 2^{12}

43) Domain of the function $y=\frac{x-1}{x+1}$ is:
(a) 1R (b) Q (c) R-(-1) (d) R-1

44) If $f:R\to R$ is defined by $f(x)=2x-3$:
(a) $\frac{1}{2x-3}$ (b) $\frac{1}{2x+3}$ (c) $\frac{x+3}{2}$ (d) $\frac{x-3}{2}$

45) $n(A \cap B) = 4$ and $(A \cup B) = 11$ then $n(p(A \triangle B))$ is:
(a) 44 (b) 256 (c) 64 (d) 128

46) $n(p(A)) = 512, n(p(B)) = 32, n(A \cup B) = 16,$ find $n(A \cap B)$:
(a) 2 (b) 9 (c) 4 (d) 5

47) Let S = (1, 2, 3), R be (1, 1) (1, 2) (2, 2) (1, 3) (3, 1), what are the elements to-be included to make R reflexive:
(a) (3, 3) (b) (2, 3) (c) (3, 2) (d) none of these

48) The natural domain of the function $y = \sqrt{9 - x^2}$ is:
(a) $-3 \leq x \leq 3$ (b) -3 < x < 3 (c) 0 < x < 3 (d) $(-\infty, -3) \cup (3, \infty)$

49) Let X = {a, b,c},y = (1,2,3) then $f : x \to y$ given by (a, 1) (b, 1) (c, 1) is called:
(a) onto (b) constant function (c) one one (d) bijective

50) If $f : [-2, 2] \to A$ is given by f(x)=3^3 then f is onto, if A is:
(a) [3, 3] (b) (3, 3) (c) [-24,24] (d) (-24, 24)

51) Which one of the following statements is false? The graph of the function $f(x) = \frac{1}{x}$
(a) exist is the first and third quadrant only (b) is a reciprocal function (c) is defined at x = 0 (d) it is symmetric about y = x and y = - x.

52) Which of the following functions is an even function?
(a) $f(x) = \frac{2^x + 2^{-n}}{2^x - 2^{-x}}$ (b) $f(x) = \frac{3^x + 1}{3^x - 1}$ (c) $f(x) = \frac{x.3^x - 1}{3^x + 1}$ (d) $f(x) = log(x + \sqrt{x^2 + 1})$

53) The domain of the function $f(x) = \sqrt{x - 5} + \sqrt{6 - x}$ is
(a) [5, ∞) (b) (- ∞, 6) (c) [5, 6] (d) (-5, ≠6)

54) The domain of the function $f(x) = \sqrt{4 - \sqrt{4 - \sqrt{4 - x^2}}}$
(a) (-∞, 4) (b) (-4, ∞) (c) (- 2,2) (d) [- 2,2]

55) The domain of the function $f(x) = \sqrt{log_{10} \frac{3-x}{x}}$ is
(a) $(0, \frac{3}{2})$ (b) (0, 3) (c) $(-\infty, \frac{3}{2}]$ (d) $(0, \frac{3}{2}]$

56) The range of the function is $f(x) = \sqrt{3x^2 - 4x + 5}$ is
(a) $\left(-\infty, \sqrt{\frac{11}{3}}\right)$ (b) $\left(-\infty, -\sqrt{\frac{11}{3}}\right)$ (c) $\left(\sqrt{\frac{11}{3}}, -\infty\right)$ (d) none

57) The function f(x) = log (x + $\sqrt{x^2 + 1}$) is
(a) an even function (b) an odd function (c) a periodic function (d) neither an even nor an odd function

58) Let f and g be two odd functions then the function of f o g is
(a) an even function (b) an odd function (c) neither even nor odd (d) a periodic function

59) If f(x) = 1 - x, x ∈ [- 3, 3] then the domain off is
(a) [- 2,3] (b) (- 2,3) (c) (- 3, -2) (d) [-2, 3)

60) If $f(x) = \frac{1-x}{1+x}, x \neq 0$ then $f[f(x)] + f\left[f\left(\frac{1}{x}\right)\right]$
(a) < 2 (b) $\geq$ 2 (c) > 2 (d) None

61) If $f(x) = \frac{1-x}{1+x}, (x \neq 0)$ then $f^{-1}(x)$ =
(a) f(x) (b) $\frac{1}{f(x)}$ (c) -f(x) (d) -$\frac{1}{f(x)}$

62) If A = {1,2}, B = {1,3} then n(A x B) =
(a) 2 (b) 4 (c) 8 (d) 0

63) If n(A) = 1024 then n[P(A)] =
(a) 2^{10} (b) $2^{2^{10}}$ (c) cannot be determined (d) 4^{10}

64) Which one of the following is false?
(a) A∩(BΔ\C) = (A ∩ B)Δ(A ∩ C) (b) A∩(B - C) = (A ∩B) \ (A∩C) (c) (A U B), = A' ∩ B' (d) (A \ B) U B = A ∩ B

65) If A = {x / x is an integer, $x^2 \leq 4$} then elements of A are
(a) A = {-1, 0, 1} (b) A = {-1, 0, 1, 2} (c) A = {0, 2, 4} (d) A = {- 2, - 1, 0, 1, 2}

66) Which one of the following is not a singleton set?
(a) A = {x : 3x - 5 = 0, x ∈ Q} (b) B = {| x | = 1 / x ∈ Z} (c) {x : x^3 - 1 = 0, x ∈ R} (d) {x : 30x = 60, x ∈ N}

67) n[P[P[p(Ø)]]] =
(a) 2 (b) 1 (c) 4 (d) 8

68) If A, B and C are three sets and if A ∈ B and B ⊂ C then
(a) A ⊂ C (b) A need not be a subset of C (c) A = B (d) C ⊂ A

69) Which one of the following is false?
(a) (A')' = A (b) AUA' = A (c) A∩A' = Ø (d) AUA' = U

70) If X and Y are two sets such that n (X) = 17, n (Y) = 23 and n(X U Y) = 38. Then n (X n 1) =
(a) 0 (b) cannot determined (c) 6 (d) 2

71) For any four sets A, B, C and D, which of the following is not true?
(a) A x C ⊆ B x D (b) (A x B) ∩ (C x D) = (A ∩ C) x (B ∩ D) (c) A x (B U,C) = (A x B) U (A x C) (d) A x (B ∩ C) = (A x B) ∩ (A x C)

72) If A and B are any two finite sets having m and n elements respectively then the cardinality of the power set of A x B is

(a) 2^m (b) 2^n (c) mn (d) 2^{mn}

73) The domain and range of the function f(x) = -|x|

(a) R (- ∞, 0] (b) (0,∞), (- ∞,0) (c) (-∞,∞), (0, ∞) (d) R, R

74) The domain and range of the function $f(x) = \frac{|x-4|}{x-4}$

(a) R, [-1, 1] (b) R \ {4};{-1,1} (c) R \ {4};{-1,l} (d) R, (-1,1)

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74 x 1 = 74

1) (c) n
2) (b) on to
3) (d) [0,9]
4) (d) not a function
5) (a) $f^{-1}(x) = \begin{cases} x \quad if \quad x < 1 \\ \sqrt{x} \quad if \quad 1 \le x \le 16 \\ \frac{x^2}{64} \quad if \quad x > 1 \end{cases}$
6) (d) (-∞,1]
7) (b) neither an odd function nor an even function
8) (c) an even function
9) (d) {x:x is an even prime number}
10) (c) Ø
11) (c) {7,8,9}⊆A
12) (c) AΔB
13) (d) B\A
14) (c) (6,8)∈R
15) (c) {1}
16) (a) reflexive
17) (a) symmetric
18) (c) aRb ⇔ a<b
19) (b) f(x)=x+2
20) (c) 1
21) (c) only one element
22) (d) Range of R is {0,-1, 1}
23) (a) $f(x) = \begin{cases} -2x \; if \; x \in (-\infty, -2] \\ 4 \; if \; x \in (-2, 2] \\ 2x \; if \; x \in (2, \infty) \end{cases}$
24) (a) T is an equivalence relation but S is not an equivalence relation
25) (d) N
26) (b) 1130
27) (b) 4
28) (c) 6
29) (b) 17^2
30) (b) onto but not one-one
31) (b) $\frac{x+5}{3}$
32) (a) $2(2x^2-5x+2)$
33) (d) none of these
34) (b) A x A
35) (c) 512
36) (c) transitive
37) (b) symmetric
38) (d) $(-\infty, -1] \cup [\frac{1}{3}, \infty)$
39) (c) [0, 1)
40) (d) [0, ∞); [0,∞)
41) (a) 2^{12}
42) (d) 2^{12}
43) (c) R-(-1)

44) (c) $\frac{x+3}{2}$
45) (d) 128
46) (a) 2
47) (a) (3, 3)
48) (a) $-3 \leq x \leq 3$
49) (b) constant function
50) (c) [-24,24]
51) (c) is defined at x = 0
52) (c) $f(x) = \frac{x.3^x - 1}{3^x + 1}$
53) (c) [5, 6]
54) (d) [- 2,2]
55) (d) $(0, \frac{3}{2}]$
56) (c) $\left(\sqrt{\frac{11}{3}}, -\infty\right)$
57) (b) an odd function
58) (b) an odd function
59) (a) [- 2,3]
60) (b) ≥ 2
61) (a) f(x)
62) (b) 4
63) (b) $2^{2^{10}}$
64) (d) (A \ B) U B = A ∩ B
65) (d) A = {- 2, - 1, 0, 1, 2}
66) (b) B = {| x | = 1 / x ∈ Z}
67) (c) 4
68) (b) A need not be a subset of C
69) (b) AUA' = A
70) (d) 2
71) (a) A x C ⊆ B x D
72) (d) 2^{mn}
73) (a) R (- ∞, 0]
74) (b) R \ {4};{-1,1}

Ravi home tutions

11th chapter 2 - 1 mark

Date : 14-Sep-19

11th Standard

Maths

Reg.No. :

Exam Time : 01:05:00 Hrs

Total Marks : 65

65 x 1 = 65

1) If |x+2| $\leq$ 9, then x belongs to
(a) $(-\infty, -7)$ (b) [-11, 7] (c) $(-\infty, -7) \cup (11, \infty)$ (d) (-11, 7)

2) Give that x;y and b are real numbers x< y;b > 0, then
(a) xb < yb (b) xb > yb (c) xb ≤ yb (d) $\frac{x}{b} \geq \frac{y}{b}$

3) If $\frac{|x-2|}{x-2} \geq 0$, then x belongs to
(a) $[2, \infty]$ (b) $(2, \infty)$ (c) $(-\infty, 2)$ (d) $(-2, \infty)$

4) The solution 5x-1< 24 and 5x+1 > -24 is
(a) (4,5) (b) (-5,-4) (c) (-5,5) (d) (-5,4)

5) The solution set of the following inequality |x-1| $\geq$ |x-3| is
(a) [0, 2] (b) $[2, \infty)$ (c) (0, 2) (d) $(-\infty, 2)$

6) The value of $log_{\sqrt{2}}512$ is
(a) 16 (b) 18 (c) 9 (d) 12

7) The value of $log_3\frac{1}{81}$ is
(a) -2 (b) -8 (c) -4 (d) -9

8) If $log_{\sqrt{x}}$ 0.25 =4 ,then the value of x is
(a) 0.5 (b) 2.5 (c) 1.5 (d) 1.25

9) The value of $\log_a b \log_b c \log_c a$ is
(a) 2 (b) 1 (c) 3 (d) 4

10) If 3 is the logarithm of 343 then the base is
(a) 5 (b) 7 (c) 6 (d) 9

11) Find a so that the sum and product of the roots of the equation $2x^2+(a-3)x+3a-5 = 0$ are equal is
(a) 1 (b) 2 (c) 0 (d) 4

12) If a and b are the roots of the equation $x^2-kx+16=0$ and $a^2+b^2=32$ then the value of k is
(a) 10 (b) -8 (c) -8,8 (d) 6

13) The number of solution of $x^2+|x-1|=1$ is
(a) 1 (b) 0 (c) 2 (d) 3

14) The equation whose roots are numerically equal but opposite in sign to the roots $3x^2-5x-7 =0$ is
(a) $3x^2-5x-7 =0$ (b) $3x^2+5x-7 =0$ (c) $3x^2-5x+7 =0$ (d) $3x^2+x-7$

15) If 8 and 2 are the roots of $x^2+ax+c=0$ and 3,3 are the roots of $x^2+dx+b=0$;then the roots of the equation $x^2+ax+b = 0$ are
(a) 1,2 (b) -1,1 (c) 9,1 (d) -1,2

16) If a and b are the roots of the equation $x^2-kx+c = 0$ then the distance between the points (a, 0) and (b, 0)
(a) $\sqrt{4k^2 - c}$ (b) $\sqrt{k^2 - 4c}$ (c) $\sqrt{4c - k^2}$ (d) $\sqrt{k - 8c}$

17) If $\frac{kx}{(x+2)(x-1)} = \frac{2}{x+2} + \frac{1}{x-2}$,then the value of k is
(a) 1 (b) 2 (c) 3 (d) 4

18) If $\frac{1-2x}{3+2x-x^2} = \frac{A}{3-x} + \frac{B}{x+1}$,then the value of A+B is
(a) $\frac{-1}{2}$ (b) $\frac{-2}{3}$ (c) $\frac{1}{2}$ (d) $\frac{2}{3}$

19) The number of roots of $(x+3)^4+(x+5)^4=16$ is
(a) 4 (b) 2 (c) 3 (d) 0

20) The value of $\log_3 11.\log_{11} 13.\log_{13} 15\log_{15} 27.\log_{27} 81$ is

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

21) If x < 7,then

(a) -x < -7 (b) - x ≤ -7 (c) -x > -7 (d) -x ≥ -7

22) If -3x+17 < -13 then

(a) x ∈ (10,∞) (b) x ∈ [10,∞) (c) x ∈ (-∞,10] (d) x ∈ [10,10)

23) If x is a real number and |x| < 5 then

(a) x ≥ 5 (b) -5 < x < 5 (c) x ≤ -5 (d) -5 ≤ x ≤ 5

24) If |x+3| ≥10 then

(a) x ∈ (-13,7] (b) x ∈ [-13,7) (c) x ∈ (-∞,-13] ∪ [7,∞) (d) x ∈ (-∞,-13] ∪ [7,∞)

25) $\sqrt[4]{11}$ is equal to

(a) $\sqrt[8]{11^2}$ (b) $\sqrt[8]{11^4}$ (c) $\sqrt[8]{11^8}$ (d) $\sqrt[8]{11^6}$

26) The rationalising factor of $\frac{5}{\sqrt[3]{3}}$ is

(a) $\sqrt[3]{6}$ (b) $\sqrt[3]{3}$ (c) $\sqrt[3]{9}$ (d) $\sqrt[3]{27}$

27) $(\sqrt{5}-2)(\sqrt{5}+2)$ is equal to

(a) 1 (b) 3 (c) 23 (d) 21

28) The number of real solution of $|2x-x^2-3|=1$ is

(a) 0 (b) 2 (c) 3 (d) 4

29) If x is real and k = $\frac{x^2-x+1}{x^2+x+1}$ then

(a) $k\epsilon\left[\frac{1}{3},3\right]$ (b) k ≥ 3 (c) $k \le \frac{1}{3}$ (d) none of these

30) If the roots of x^2-bx+c =0 are two consecutive integer,then b^2-4c is

(a) 0 (b) 1 (c) 2 (d) none of these

31) The logarithmic form of 5^2=25 is

(a) $log_5^2 = 25$ (b) { log }_{ 2 }^{ 5 }=25 (c) { log }_{ 2 }^{ 25 }=2 (d) { log }_{ 25 }^{ 5 }=2

32) The Value of { log }_{ 3/4 }^{ (4/3) } is

(a) -2 (b) 1 (c) 2 (d) -1

33) The value of $\log_{10}{}^8+\log_{10}{}^5-\log_{10}{}^4$ =

(a) { log }_{ 10 }^{ 9 } (b) { log }_{ 10 }^{ 36 } (c) 1 (d) -1

34) $(x^2-2x+2)(x^2+2x+2)$ are the factors of the polynomial

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

35) The factors of the polynomial 6\sqrt { { 3x }^{ 2 } } -47x+5\sqrt { 3 } are

(a) (2x-5\sqrt { 3 })(3\sqrt { 3 } x-1) (b) (2x-5\sqrt { 3 })(3\sqrt { 3 } x+1) (c) (2x+5\sqrt { 3 })(3\sqrt { 3 } x+1) (d) (2x+5\sqrt { 3 })(3\sqrt { 3 } x-1)

36) Given |\frac{3}{x-4}|< 1 then:

(a) x∈(∞,3) (b) x∈(4,∞) (c) x∈(1,7) (d) x∈(1,4)U(4,7)

37) If \alpha and \beta are the roots of $2x^2$ - 3x - 4 = 0 find the value of \alpha^2+\beta^2

(a) \frac{41}{4} (b) \frac{\sqrt{14}}{2} (c) 0 (d) none of these

38) If \alpha and \beta are the roots of $2x^2+4x+5=0$ the equation where roots are 2\alpha and 2\beta is:

(a) $4x^2+ 4x + 5 = 0$ (b) $2x^2 + 4x + 50 = 0$ (c) $x^2+4x+5=0$ (d) $x^2+4x+10=0$

39) The minimum point of y = x^2 -4x - 5 is:

(a) (2,-9) (b) (-2,-9) (c) (-2,9) (d) (4,5)

40) The condition that the equation $ax^2 + bx + c = 0$ may have one root is the double the other is:

(a) $2b^2 = 9ac$ (b) $b^2= ac$ (c) $b^2 = 4ac$ (d) $9b^2 = 2ac$

41) Solve \sqrt{7+6x-x^2}=x+1

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

42) Solve $3x^2 + 5x - 2 \le 0$

(a) $(2,\frac{1}{3})$ (b) $[2,\frac{1}{3}]$ (c) $(-2,\frac{1}{3})$ (d) $(-2,\frac{-1}{3})$

43) The zero of the polynomial function $f(x)=9x^2-16$ are:

(a) (9,16) (b) (3,4) (c) $(\frac{4}{3},-\frac{4}{3})$ (d) $(\frac{3}{4},-\frac{3}{4})$

44) The value of a when x^3-2x^2+3x+a is divided by $(x - 1)$, the remainder is 1, is:

(a) -1 (b) 1 (c) 2 (d) -2

45) Find the other root of $x^2-4x+1=0$ given that $2+\sqrt{3}$ is a root:

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

46) If $\frac{x}{x^2-5x+6}=\frac{A}{x-2}+\frac{B}{x-3}$ then value of A is:

(a) 2 (b) 0 (c) 3 (d) -2

47) If $\frac{1}{\sqrt{3}\times\sqrt{2}}=\sqrt{3}+a$ then a is

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

48) $\sqrt[4]{ { \left(-2 \right) }^{ 4 } } \times { \left(-1000 \right) }^{ \frac { 1 }{ 3 } }$ is

(a) 20 (b) -20 (c) 2^{-10} (d) 100

49) Logarithm of 144 to the base $2\sqrt{3}$ is

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

50) The value of $\log_2 3 . \log_{27} 32$:

(a) $\frac{5}{2}$ (b) $\frac{2}{5}$ (c) $\frac{5}{3}$ (d) $\frac{3}{5}$

51) The value of $2 \log_{10} 3 + \log_{10} 16 - 2 \log_{10} 6\over 5$ is

(a) 1 (b) 0 (c) 2 (d) 3

52) The value of ${3^{-3}\times6^4\times 12^{-3}\over 9^{-4}\times 2^{-2}}$ is

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

53) If (x + 1) and (x - 3) are factors of $x^3 - 4x^2 + x + 6$ then other linear factor is

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

54) If $P(x) = x^3 + 3x^2 + 2x + 1$, then the remainder on dividing p(x) by (x - 1) is

(a) 7 (b) 0 (c) 6 (d) 1

55) The value of $\log_a^x + \log_{1/a}^x$ is

(a) 1 (b) 0 (c) $2 \log_a^x$ (d) $2 \log_a^x$

56) The condition for one root of the quadratic equation $ax^2 + bx + c = 0$ to be double the other

(a) $b^2 = 3ac$ (b) $b^2 = 4ac$ (c) $2b^2 = 9ac$ (d) $c^2 = ac - b^2$

57) If one root of the quadratic equation $ax^2 + bx + c = 0$ is the reciprocal of the other then

(a) a = b (b) a = c (c) ac = 1 (d) b = c

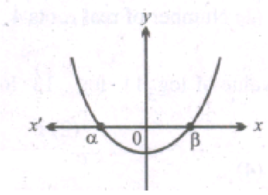
58) The number of real solutions of the equation $|x^2| - 3|x| + 2 = 0$ is

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

59) If a and b are roots of $x^2 + x + 1 = 0$ then the value of $a^2 + b^2 =$

(a) 1 (b) -1 (c) cannot be determined (d) 0

60) For the below figure of $ax^2 + bx + c = 0$



(a) a < 0, D > 0 (b) a > 0, D > 0 (c) a < 0, D < 0 (d) a > 0, D = 0

61) Let α and β are the roots of a quadratic equation $px^2 + qx + r = 0$ then

(a) $\alpha +\beta=-{p\over r}$ (b) $\alpha\beta={p\over r}$ (c) $\alpha +\beta={-q\over p}$ (d) $\alpha \beta =r$

62) Zero of the polynomial $p(x) = x^2 - 4x + 4$

(a) 1 (b) 2 (c) -2 (d) -1

63) The roots of the equation $x+{1\over x}=3{1\over 3},x\ne 0$ are

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

64) If x={1\over 2+\sqrt{3}} then the value of $x^3 - x^2 - 11x + 3$ is

(a) 0 (b) 1 (c) 2 (d) 4

65) Which whole number is not a natural number?

(a) 1 (b) 2 (c) 3 (d) 0

****

65 x 1 = 65

1) (b) [-11, 7]
2) (a) xb < yb
3) (b) (2,\infty)
4) (c) (-5,5)
5) (b) [2,\infty)
6) (b) 18
7) (c) -4
8) (a) 0.5
9) (b) 1
10) (b) 7
11) (b) 2
12) (b) -8
13) (c) 2
14) (b) $3x^2+5x-7=0$
15) (c) 9,1
16) (a) \sqrt { { 4k }^{ 2 }-c }
17) (c) 3
18) (a) \frac { -1 }{ 2 }
19) (a) 4
20) (d) 4
21) (c) -x > -7
22) (a) x ∈ (10,∞)
23) (b) -5 < x < 5
24) (d) x ∊ (-∞,-13] ᴗ [7,∞)
25) (a) \sqrt [8]{ 11^{ 2 } }
26) (c) \sqrt [3]{ 9 }
27) (a) 1
28) (b) 2
29) (a) k\epsilon \left[\frac { 1 }{ 3 } ,3 \right]
30) (b) 1
31) (c) { log }_{ 2 }^{ 25 }=2
32) (d) -1
33) (c) 1
34) (c) x^4+4
35) (a) (2x-5\sqrt { 3 })(3\sqrt { 3 } x-1)
36) (d) x∈(1,4)U(4,7)
37) (b) \frac{\sqrt{14}}{2}
38) (d) $x^2+4x+10=0$
39) (a) (2,-9)
40) (a) $2b^2 = 9ac$

41) (b) $(3, -1)$

42) (d) $(-2,\frac{-1}{3})$

43) (c) $(\frac{4}{3},-\frac{4}{3})$

44) (a) -1

45) (c) $2-\sqrt{3}$

46) (d) -2

47) (b) $-\sqrt{2}$

48) (b) -20

49) (c) 4

50) (c) $\frac{5}{3}$

51) (c) 2

52) (b) 3^6

53) (b) $x - 2$

54) (a) 7

55) (b) 0

56) (c) $2b^2 = 9ac$

57) (b) $a = c$

58) (d) 4

59) (a) 1

60) (b) $a > 0, D > 0$

61) (c) $\alpha +\beta={-q\over p}$

62) (b) 2

63) (b) ${1\over 3},3$

64) (a) 0

65) (d) 0

Ravi home tutions

11th chapter 3 - 1 mark

Date : 14-Sep-19

11th Standard

Maths

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

Exam Time : 01:12:00 Hrs

Total Marks : 72

72 x 1 = 72

1) $\frac{1}{cos80^0} - \frac{\sqrt{3}}{sin80^0} =$

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

2) If $cos28^0+sin28^0=k^3$, then $cos\ 17^0$ is equal to

(a) $\frac{k^3}{\sqrt{2}}$ (b) $-\frac{k^3}{\sqrt{2}}$ (c) $\pm\frac{k^3}{\sqrt{2}}$ (d) $-\frac{k^3}{\sqrt{3}}$

3) The maximum value of $4sin^2x+3cos^2x+sin\frac{x}{2}+cos\frac{x}{2}$ is

(a) $\frac{1}{8}$ (b) $\frac{1}{2}$ (c) $\frac{1}{\sqrt{3}}$ (d) $\frac{1}{\sqrt{2}}$

4) $\left(1+cos\frac{\pi}{8}\right)\left(1+cos\frac{3\pi}{8}\right)\left(1+cos\frac{5\pi}{8}\right)\left(1+cos\frac{7\pi}{8}\right)=$

(a) $\frac{1}{8}$ (b) $\frac{1}{2}$ (c) $\frac { 1 }{ \sqrt { 3 } }$ (d) $\frac { 1 }{ \sqrt { 2 } }$

5) If $\pi < 2\theta < \frac { 3\pi }{ 2 }$, then $\sqrt { 2+\sqrt { 2+2\quad cos4\theta } }$ equals to

(a) -2 cosθ (b) -2 sinθ (c) 2 cosθ (d) 2 sinθ

6) If $tan40^0=\lambda$, then $\frac { tan{ 140 }^{ 0 }-tan{ 130 }^{ 0 } }{ 1+tan{ 140 }^{ 0 }.tan{ 130 }^{ 0 } } =$

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

7) $cos1^0+cos2^0+cos3^0+:::+cos179^0=$

(a) 0 (b) 1 (c) -1 (d) 89

8) Let $f_k(x)=\frac { 1 }{ k } [sin^kx+cos^kx]$ where $x\in R$ and $k\geq1$. Then $f_4(x)-f_6(x)=$

(a) $\frac { 1 }{ 4 }$ (b) $\frac { 1 }{ 12 }$ (c) $\frac { 1 }{ 6 }$ (d) $\frac { 1 }{ 3 }$

9) Which of the following is not true?

(a) $sin\theta=-\frac { 3 }{ 4 }$ (b) cosθ=-1 (c) tanθ=25 (d) $sec\theta=\frac { 1 }{ 4 }$

10) cos2θ cos2ϕ+sin2(θ-ϕ)-sin2(θ+ϕ) is equal to

(a) $sin2(\theta-\phi)$ (b) $cos2(\theta+\phi)$ (c) $sin2(\theta-\phi)$ (d) $cos2(\theta-\phi)$

11) $\frac { sin(A-B) }{ cosAcosB } +\frac { sin(B-C) }{ cosBcosC } +\frac { sin(C-A) }{ cosCcosA }$ is

(a) sinA+sinB+sinC (b) 1 (c) 0 (d) cosA+cosB+cosC

12) If cospθ+cosqθ=0 and if p≠q, then θ is equal to (n is any integer)

(a) $\frac { \pi (3n+1) }{ p-q }$ (b) $\frac { \pi (2n+1) }{ p-q }$ (c) $\frac { \pi (n\pm 1) }{ p\pm q }$ (d) $\frac { \pi (n+2) }{ p+q }$

13) If tan α and tan β are the roots of tan x2+atanx+b=0; then $\frac { sin(\alpha +\beta) }{ sin\alpha sin\beta }$ is equal to

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

14) In a triangle ABC, $sin^2A+sin^2B+sin^2C=2$, then the triangle is

(a) equilateral triangle (b) isosceles triangle (c) right triangle (d) scalene triangle

15) If f(θ)=|sinθ|+|cosθ|, $\theta\in R$, then f(θ) is in the interval

(a) [0,2] (b) $[1,\sqrt { 2 }]$ (c) [1,2] (d) [0,1]

16) $\frac { cos6x+6cos4x+15cos2x+10 }{ cos5x+5cos3x+10cosx }$ equal to

(a) cos2x (b) cosx (c) cos3x (d) 2cosx

17) The triangle of maximum area with constant perimeter 12m

(a) is an equilateral triangle with side 4m (b) is an isosceles triangle with sides 2m;5m;5m (c) is a triangle with sides 3m;4m;5m (d) Does not exist

18) A wheel is spinning at 2 radians/second. How many seconds will it take to make 10 complete rotations?

(a) 10π seconds (b) 20π seconds (c) 5π seconds (d) 15π seconds

19) If sinα+cosα=b, then sin2α is equal to

(a) b^2-1, if $b\le\sqrt{2}$ (b) b^2-1, if $b>\sqrt{2}$ (c) b^2-1, if $b\ge\sqrt{2}$ (d) b^2-1, if $b\ge\sqrt{2}$

20) In aΔABC, if (i) $\sin\frac{A}{2}\sin\frac{B}{2}\sin\frac{C}{2}$ (ii) sinA sinB sinC > 0

(a) Both (i) and (ii) are true (b) Only (i) is true (c) Only (ii) is true (d) Neither (i) nor (ii) is true

21) If the angles of a triangle are in A.P., then the measure of one of the angles in radians is

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

22) The angle between the minute and hour hands of a clock at 8.30 is

(a) 80^0 (b) 75^0 (c) 60^0 (d) 105^0

23) If $\tan x=\frac{-1}{\sqrt{5}}$ and x lies in the IV quadrant, then the value of cosx is

(a) $\sqrt{\frac{5}{6}}$ (b) $\frac{2}{\sqrt{6}}$ (c) $\frac{1}{2}$ (d) $\frac{1}{\sqrt{6}}$

24) Which of the following is incorrect?

(a) $\sin x=\frac{-1}{5}$ (b) cosx=1 (c) $\sec x=\frac{1}{2}$ (d) tanx=20

25) If $\mathrm{cosec}\, x+\cot x=\frac{11}{2}$ then tanx=

(a) $\frac{21}{22}$ (b) $\frac{15}{16}$ (c) $\frac{44}{117}$ (d) $\frac{117}{44}$

26) If $\tan A=\frac{a}{a+1}$ and $B=\frac{1}{2a+1}$ then the value of A+B is

(a) 0 (b) $\frac{\pi}{2}$ (c) $\frac{\pi}{3}$ (d) $\frac{\pi}{4}$

27) The value of $\sin^2\frac{5\pi}{12}-\sin^{2}\frac{\pi}{12}$ is

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

28) $\cos p=\frac{1}{7}$ and $\cos Q=\frac{13}{14}$ where P,Q are angles, then P-Q is

(a) $\frac{\pi}{6}$ (b) $\frac{\pi}{3}$ (c) $\frac{\pi}{4}$ (d) $\frac{5\pi}{12}$

29) $\cos 35^0+\cos 85^0+\cos 155^0=$

(a) 0 (b) $\frac{1}{\sqrt{3}}$ (c) $\frac{1}{\sqrt{2}}$ (d) $\cos 275^0$

30) 2 sin 5x cos x

(a) sin 6x+cos 4x (b) sin6x+sin4x (c) cos6x+sin4x (d) cos6x+cos4x

31) cos6x-cos8x=

(a) 2 sin 7x sinx (b) sin 7x sinx (c) $\frac{1}{2}$ sin7x+sinx (d) $\sqrt{2}$ sin7x sinx

32) $\frac{\cos 3x}{2\cos 2x-1}$ is

(a) cos x (b) sin x (c) tan x (d) cot x

33) In any ΔABC, a(b cosC-c Cos B)=

(a) a^2 (b) b^2-c^2 (c) 0 (d) b^2+c^2

34) If $\cos x=\frac{-1}{2}$ $0<x<2\pi$ and , then the solutions are

(a) $x=\frac{\pi}{3},\frac{4\pi}{3}$ (b) $x=\frac{2\pi}{3},\frac{4\pi}{3}$ (c) $x=\frac{2\pi}{3},\frac{7\pi}{6}$ (d) $x=\frac{2\pi}{3},\frac{5\pi}{3}$

35) $2\tan^{-1}\left(\frac{1}{5}\right)$ is equal to

(a) $\tan\left(\frac{5}{12}\right)$ (b) $\frac{5}{12}$ (c) $\tan^{-1}\left({5 \over 12}\right)$ (d) $\tan^{-1}\frac{2}{5}$

36) If $\sin\theta + \cos\theta = 1$ then $\sin^6\theta + \cos^6\theta$ is

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

37) If the arcs of same lengths in two circles sustend central angles 30° and 40° find the ratio of their radii

(a) 3:4 (b) 4:3 (c) 7:12 (d) none of these

38) If sin(45 ° + 10°) - sin(45° -10°) =$\sqrt{2}$sin x then x is

(a) 0° (b) 5° (c) 10° (d) 15°

39) The quadratic equation whose roots are tan75° and cot75° is:

(a) $x^2+4x+1=0$ (b) $4x^2-x+1=0$ (c) $4x^2+4x-1=0$ (d) $x^2-4x+1=0$

40) If $\tan x={1\over 7}$,$\tan y={1\over 3}$ then x + y is:

(a) ${\pi\over 4}$ (b) ${\pi\over 3}$ (c) ${\pi\over 2}$ (d) ${\pi}$

41) $\sin^2\left(22{1\over 2}^o\right)$ is

(a) ${\sqrt{2-\sqrt{2}}}\over 2$ (b) ${2\sqrt{2}-1\over 4\sqrt{2}}$ (c) ${\sqrt{2-\sqrt{2}\over 2}}$ (d) none of these

42) If A + B = 45° then tan A - tan B + tan A tan B is

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

43) The value of $\sin{\pi\over 48}\cos{\pi \over 48}\cos{\pi \over 24}\cos{\pi \over 12}\cos{\pi \over 6}\cos{\pi \over 3}$ is

(a) $\sqrt{3}\over32$ (b) $\sqrt{3}\over64$ (c) ${3}\over32$ (d) ${3}\over64$

44) In a $\triangle ABC$, C = 90° then the value of $\sin A + \sin B - 2\sqrt{2}\cos{A\over2}\cos{B\over 2}$ is

(a) -1 (b) 1 (c) 0 (d) ${1\over 2}$

45) The general solution of $\operatorname{cosec}\theta = -2$ is

(a) $2n\pi +(-1)^n({\pi\over 6})$ (b) $n\pi +(-1)^n({-\pi\over 6})$ (c) $2n\pi \pm({\pi\over 6})$ (d) $-{\pi\over 6}+n\pi$

46) In a $\triangle ABC$, $\hat{A} = 60°$, $\hat{C} = 30°$, $b = 2\sqrt{3}$, c = 2 then a is

(a) 0 (b) 1 (c) 4 (d) 2

47) In $\triangle ABC$, $\hat{C} = 90°$ then a cosA + b cosB is:

(a) 2R sinB (b) 2 sinB (c) 0 (d) 2a sinB

48) (secA+tanA-1)(secA-tanA+1)-2tanA=

(a) 0 (b) 1 (c) 2 (d) 2 tan A

49) tan 70°-tan 20°=

(a) tan 50° (b) 2 tan 50° (c) tan 70° (d) 0

50) The value of cos 20°-sin 20° is

(a) positive (b) negative (c) 0 (d) 1

51) The value of tan 1° tan 2° tan 3°...tan 89° is

(a) ∞ (b) 0 (c) 1 (d) $\sqrt{3}$

52) The value of $\frac{1-\tan^2 15°}{1+\tan^2 15°}$ is

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

53) If $\tan\theta=\frac{-4}{3}$, then $\sin\theta$ is

(a) $\frac{-4}{5}$ (b) $\frac{4}{5}$ (c) $\frac{-4}{5}\quad or\quad \frac{4}{5}$ (d) None

54) The maximum value of 3 sinθ+4 cosθ is

(a) 1 (b) 3 (c) 4 (d) 5

55) The value of sin 20° sin40° sin60° sin18° is

(a) $\frac{-3}{16}$ (b) $\frac{3}{16}$ (c) $\frac{5}{16}$ (d) $\frac{-5}{16}$

56) If $\sin\theta=\sin\alpha$, then the angles θ and α are related by

(a) $\theta=n\pi\pm\alpha$ (b) $\theta=2n\pi+(-1)^n\alpha$ (c) $\alpha=n\pi\pm(-1)^n\theta$ (d) $\theta=(2n+1)\pi+\alpha$

57) If 2 sinθ+1=0 and $\sqrt{3}\tan\theta=1$, then the most general value of θ is

(a) $n\pi\pm\frac{\pi}{6}$ (b) $n\pi+(-1)^n\frac{7\pi}{6}$ (c) $2n\pi+\frac{7\pi}{6}$ (d) $2n\pi+\frac{11\pi}{6}$

58) If $\cos\theta+\sqrt{3}\sin\theta=2$ and θ∈[0,2π] then θ is

(a) $\frac{\pi}{3}$ (b) $\frac{5\pi}{3}$ (c) $\frac{2\pi}{3}$ (d) $\frac{4\pi}{3}$

59) The numerical value of $\tan^{-1}1+\tan^{-1}2+\tan^{-1}3=$

(a) π (b) $\frac{\pi}{2}$ (c) 0 (d) $\frac{\pi}{4}$

60) If cosA=cosB and sinA=sinB then

(a) A+B=0 (b) A=B (c) A+B=2nπ (d) A=B+2nπ

61) If α and β are two values of θ obtained from the equation a cosθ+b sinθ=c then the value of $\tan(\frac{\alpha+\beta}{2})$ is

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

62) If $(A+B)=\frac{\pi}{4}$, (cot A-1)(cot B-1)=

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

63) If ABCD is a cyclic quadrilateral then cosA+cosB+cosC+cosD=

(a) 1 (b) -1 (c) 0 (d) None

64) If A,B,C are in A.P and $B=\frac{\pi}{4}$ then tanA tanB tan C=

(a) 1 (b) -1 (c) 0 (d) None

65) If $\cos \alpha=\frac{3}{5}$ and $\cos \beta=\frac{5}{13}$, then

(a) cos(\alpha+\beta)=\frac{33}{65} (b) sin(\alpha+\beta)=\frac{56}{65} (c) sin^2\frac{(\alpha-\beta)}{2}=\frac{4}{65} (d) cos(\alpha-\beta)=\frac{66}{65}

66) If in a triangle ABC, ∠B=60°, then

(a) $(a-b)^2=c^2-ab$ (b) $(b-c)^2=a^2-bc$ (c) $(c-a)^2=b^2-ac$ (d) $a^2+b^2=c^2$

67) If the area Δ of a triangle ABC is given by $\Delta=a^2-(b-c)^2$ then tan(\frac{A}{2})=

(a) -1 (b) 0 (c) \frac{1}{4} (d) \frac{1}{2}

68) If in a triangle a=5, b=4 and cos(A-B)=\frac{31}{32} then the third side C is equal to

(a) 5 (b) 6 (c) 3 (d) 12

69) The value of $\tan^{-1}$ (1)+$\cos^{-1}$(\frac{-1}{2})+$\sin^{-1}$(\frac{-1}{2})

(a) \frac{\pi}{4} (b) \frac{5\pi}{4} (c) \frac{3\pi}{4} (d) \frac{\pi}{2}

70) Number of solutions of the equation tan x+sec x=2 cos x lying in the interval [0,2π] is

(a) 0 (b) 1 (c) 2 (d) 3

71) \frac{1}{360} of a complete rotation clockwise is

(a) -1° (b) -360° (c) -90° (d) 1°

72) Area of triangle ABC is

(a) \frac{1}{2}ab cos C (b) \frac{1}{2}ab sin C (c) \frac{1}{2}ab cos B (d) \frac{1}{2}bc sin B

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72 x 1 = 72

1) (d) 4
2) (a) \frac { { k }^{ 3 } }{ \sqrt { 2 } }
3) (c) \frac { 1 }{ \sqrt { 3 } }
4) (a) \frac { 1 }{ 8 }
5) (c) 2 cosθ
6) (d) \frac { 1-{ \lambda }^{ 2 } }{ 2\lambda }
7) (a) 0
8) (b) \frac { 1 }{ 12 }
9) (d) secθ=\frac { 1 }{ 4 }
10) (b) cos2(θ+\phi)
11) (c) 0
12) (b) \frac { \pi (2n+1) }{ p-q }
13) (c) \frac { a }{ b }
14) (c) right triangle
15) (c) [1,2]
16) (d) 2cosx
17) (a) is an equilateral triangle with side 4m
18) (a) 10\pi seconds
19) (a) b^2-1, if b≤\sqrt { 2 }
20) (b) Only (i) is true
21) (b) \frac { \pi }{ 3 }
22) (b) 75^0
23) (a) \sqrt { \frac { 5 }{ 6 } }
24) (c) secx=\frac { 1 }{ 2 }
25) (c) \frac { 44 }{ 117 }
26) (d) \frac { \pi }{ 4 }
27) (b) \frac { \sqrt { 3 } }{ 2 }
28) (b) \frac { \pi }{ 3 }

29) (a) 0

30) (b) sin6x+sin4x

31) (a) 2 sin 7x sinx

32) (a) cos x

33) (c) 0

34) (b) $x=\frac { 2\pi }{ 3 } ,\frac { 4\pi }{ 3 }$

35) (c) $\tan^{-1}\left({5 \over 12}\right)$

36) (a) 1

37) (b) 4:3

38) (c) 10°

39) (d) $x^2 - 4x + 1 = 0$

40) (a) ${\pi\over 4}$

41) (b) ${2\sqrt{2}-1\over 4\sqrt{2}}$

42) (c) 1

43) (d) ${3}\over64$

44) (a) -1

45) (b) $n\pi +(-1)^n({-\pi\over 6})$

46) (c) 4

47) (d) 2a sinB

48) (a) 0

49) (b) 2 tan 50°

50) (a) positive

51) (c) 1

52) (c) $\frac{\sqrt{3}}{2}$

53) (c) $\frac{-4}{5}\quad or\quad \frac{4}{5}$

54) (d) 5

55) (b) $\frac{3}{16}$

56) (c) $\alpha=n\pi\pm(-1)^n\theta$

57) (c) $2n\pi+\frac{7\pi}{6}$

58) (a) $\frac{\pi}{3}$

59) (a) π

60) (a) A+B=0

61) (b) $\frac{b}{a}$

62) (c) 2

63) (c) 0

64) (a) 1

65) (b) $sin(\alpha+\beta)=\frac{56}{65}$

66) (c) $(c-a)^2=b^2-ac$

67) (c) $\frac{1}{4}$

68) (b) 6

69) (c) $\frac{3\pi}{4}$

70) (c) 2

71) (a) -1°

72) (b) $\frac{1}{2}ab \sin C$

Ravi home tutions

11th chapter 4 - 1 mark

Date : 14-Sep-19

11th Standard

Maths

Reg.No. :

Exam Time : 01:13:00 Hrs

Total Marks : 73

73 x 1 = 73

1) The sum of the digits at the 10^{th} place of all numbers formed with the help of 2, 4, 5, 7 taken all at a time is
(a) 432 (b) 108 (c) 36 (d) 18

2) In an examination there are three multiple choice questions and each question has 5 choices. Number of ways in which a student can fail to get all answer correct is
(a) 125 (b) 124 (c) 64 (d) 63

3) The number of ways in which the following prize be given to a class of 30 boys first and second in mathematics, first and second in physics, first in chemistry and first in English is
(a) $30^4 \times 29^2$ (b) $30^3 \times 29^3$ (c) $30^2 \times 29^4$ (d) 30×29^5

4) The number of 5 digit numbers all digits of which are odd is
(a) 25 (b) 5^5 (c) 5^6 (d) 625

5) In 3 fingers, the number of ways four rings can be worn is ways.
(a) 4^3-1 (b) 3^4 (c) 68 (d) 64

6) If ${}^{(n+5)}P_{(n+1)}=\frac{11(n-1)}{2}.{}^{(n+3)}P_n$, then the value of n are
(a) 7 and 11 (b) 6 and 7 (c) 2 and 11 (d) 2 and 6

7) The product of r consecutive positive integers is divisible by
(a) r! (b) (r-1)! (c) (r+1)! (d) r^r

8) The number of five digit telephone numbers having at least one of their digits repeated is
(a) 90000 (b) 10000 (c) 30240 (d) 69760

9) If a^2-a C_2=a^2-a C_4 then the value of 'a' is
(a) 2 (b) 3 (c) 4 (d) 5

10) There are 10 points in a plane and 4 of them are collinear. The number of straight lines joining any two points is
(a) 45 (b) 40 (c) 39 (d) 38

11) The number of ways in which a host lady invite 8 people for a party of 8 out of 12 people of whom two do not want to attend the party together is
(a) $2 \times {}^{11}C_7+{}^{10}C_8$ (b) ${}^{11}C_7+{}^{10}C_8$ (c) ${}^{12}C_8-{}^{10}C_6$ (d) ${}^{10}C_6+2!$

12) The number of parallelograms that can be formed from a set of four parallel lines intersecting another set of three parallel lines.
(a) 6 (b) 9 (c) 12 (d) 18

13) Everybody in a room shakes hands with everybody else. The total number of shake hands is 66. The number of persons in the room is
(a) 11 (b) 12 (c) 10 (d) 6

14) Number of sides of a polygon having 44 diagonals is
(a) 4 (b) 4! (c) 11 (d) 22

15) If 10 lines are drawn in a plane such that no two of them are parallel and no three are concurrent, then the total number of points of intersection are
(a) 45 (b) 40 (c) 10! (d) 210

16) In a plane there are 10 points are there out of which 4 points are collinear, then the number of triangles formed is
(a) 110 (b) ${}^{10}C_3$ (c) 120 (d) 116

17) In ${}^{2n}C_3 : {}^{n}C_3$ = 11 : 1 then n is
(a) 5 (b) 6 (c) 11 (d) 7

18) ${}^{(n-1)}C_r + {}^{(n-1)}C_{(r-1)}$ is
(a) $(n+1)C_r$ (b) $(n-1)C_r$ (c) nC_r (d) nC_{r-1}

19) The number of ways of choosing 5 cards out of a deck of 52 cards which include at least one king is

(a) ${}^{52}C_5$ (b) ${}^{48}C_5$ (c) ${}^{52}C_5 + {}^{48}C_5$ (d) ${}^{52}C_5 - {}^{48}C_5$

20) The number of rectangles that a chessboard has

(a) 81 (b) 99 (c) 1296 (d) 6561

21) The number of 10 digit number that can be written by using the digits 2 and 3 is

(a) ${}^{10}C_2 + {}^{9}C_2$ (b) 2^{10} (c) $2^{10}-2$ (d) 10!

22) If P_r stands for ${}^{r}P_r$ then the sum of the series $1 + P_1 + 2P_2 + 3P_3 + ... + nP_n$ is

(a) P_{n+1} (b) $P_{n+1}-1$ (c) $P_{n-1}+1$ (d) ${}^{(n+1)}P_{(n-1)}$

23) The product of first n odd natural numbers equals

(a) ${}^{2n}C_n \times {}^{n}P_n$ (b) $\left(\frac{1}{2}\right)^n \, {}^{2n}C_n \times {}^{n}P_n$ (c) $\left(\frac{1}{4}\right)^n \times {}^{2n}C_n \times {}^{2n}P_n$ (d) ${}^{n}C_n \times {}^{n}P_n$

24) If ${}^{n}C_4, {}^{n}C_5, {}^{n}C_6$ are in AP the value of n can be

(a) 14 (b) 11 (c) 9 (d) 5

25) 1+3+5+7+ +17 is equal to

(a) 101 (b) 81 (c) 71 (d) 61

26) The number of permutations of n different things taking r at a time when 3 particular things are to be included is

(a) ${}^{n-3}P_{r-3}$ (b) ${}^{n-3}P_r$ (c) ${}^{n}P_{r-3}$ (d) $r!\,{}^{n-3}C_{r-3}$

27) The number of different signals which can be give from 6 flags of different colours taking one or more at a time is

(a) 1958 (b) 1956 (c) 16 (d) 64

28) The number of ways to average the letters of the word CHEESE are

(a) 120 (b) 240 (c) 720 (d) 6

29) Number of all four digit numbers having different digits formed of the digits 1, 2, 3, 4 and 5 and divisible by 4 is

(a) 24 (b) 30 (c) 125 (d) 100

30) The product of r consecutive positive integers is divisible by

(a) r! (b) r!+1 (c) (r+1) (d) none of these

31) If ${}^{15}C_{3r} = {}^{15}C_{r+3}$, then r is equal to

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

32) If ${}^{m}C_1 = {}^{n}C_2$, then

(a) 2m = n (b) 2m = n(n+1) (c) 2m = n(n-1) (d) 2n=m(m-1)

33) ${}^{5}c_1 + {}^{5}c_2 + {}^{5}c_3 + {}^{5}c_4 + {}^{5}c_5$ is equal to

(a) 30 (b) 31 (c) 32 (d) 33

34) Among the players 5 are bowlers. In how many ways a team of 11 may be formed with atleast 4 bowlers?

(a) 265 (b) 263 (c) 264 (d) 275

35) If ${}^{n+1}C_3 = 2.{}^{n}C_{21}$ then n =

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

36) If ${}^{(a^2-a)}C_2 = {}^{(a^2-a)}C_4$, then a =

(a) 2 (b) 3 (c) 4 (d) none of these

37) There are 10 points in a plane and 4 of them are collinear. The number of straight lines joining any two of them is

(a) 45 (b) 40 (c) 39 (d) 38

38) For all $n \in N$, $3 \times 5^{2n+1} + 2^{3n+1}$ is divisible by

(a) 19 (b) 17 (c) 23 (d) 25

39) If $10^n + 3 \times 4^{n+2} + \lambda$ is divisible by 9 for all $n \in N$, then the least positive integral value of λ is

(a) 5 (b) 3 (c) 7 (d) 1

40) If $p(n): 49^n + 16^n + \lambda$ is divisible by 64 for $n \in N$ is true, then the least negative integral value of λ is

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

41) $\underline{|n} + \underline{|n+1}$ is:

(a) $Ln(n+2)$ (b) $\underline{|n+2}$ (c) $\underline{|2n+1}$ (d) none of these

42) If ${}^{100}C_r = {}^{100}C_{3r}$ then r is:

(a) 24 (b) 25 (c) 20 (d) 50

43) The number of diagonals of a decagon:
(a) 10 (b) 20 (c) 35 (d) 40

44) If $^{n}P_{r}$ = 720, $^{n}C_{r}$ =120 then r is:
(a) 2 (b) 4 (c) 3 (d) 5

45) The number of parallelogram formed if 5 parallel lines intersect with 4 other paralle llines is:
(a) 10 (b) 45 (c) 30 (d) 60

46) How many words can be formed using all the letters of the word ANAND:
(a) 30 (b) 35 (c) 40 (d) 45

47) If $^{n}P_{r}$=k x $^{n-1}P_{r-1}$ what is k:
(a) r (b) n (c) n+1 (d) r+1

48) The number of ways of selecting of 3 poets and 4 scientists such that poets are in even places:
(a) 12 (b) 36 (c) 72 (d) 144

49) If $^{n}C_{r-1}$ = 36, $^{n}C_{r}$ = 84 and $^{n}C_{r+1}$ = 126 then r =
(a) 2 (b) 2 (c) 3 (d) 4

50) If 7 points out of 12 are in the same straight line then the number of triangles formed is
(a) 35 (b) 21 (c) 220 (d) 185

51) a polygon has 44 diagonals, then the number of its sides are
(a) 22 (b) 88 (c) 8 (d) 11

52) Everybody in a room shakes hands with everybody else. The total number of handshakes is 91. The total number of persons in the room is
(a) 11 (b) 14 (c) 13 (d) 12

53) Out of 10 red and 8 white balls, 5 red and 4 white balls can be drawn in how many number of ways
(a) $^{8}C_{5}$ X $^{10}C_{4}$ (b) $^{10}C_{5}$ X $^{8}C_{4}$ (c) $^{18}C_{9}$ (d) $^{10}C_{5}$ X $^{8}C_{4}$

54) There are 10 lamps in a hall. Each one of them can be switched on independently. The number of ways in which the hall can be illuminated is
(a) 10^{2} (b) 1023 (c) 2^{10} (d) 10!

55) $^{n}C_{r}$ + $^{2n}C_{r-1}$ + $^{n}C_{r-2}$ =
(a) $^{n+1}C_{r}$ (b) $^{(n+1)}C_{r+1}$ (c) $^{(n+2)}C_{r}$ (d) $^{n+2}C_{r+1}$

56) The number of ways of disturbing 7 identical balls in 3 distinct boxes, so that no box is empty is
(a) 7 (b) 6 (c) 35 (d) 15

57) A candidate is required to answer 7 question out of 12 questions, which are divided into two groups each containing 6 questions. He is not permitted to attempt more than 5 questions from either group. Find the number of different ways of doing questions.
(a) 779 (b) 781 (c) 780 (d) 782

58) The number of integers greater than 6000 that can be formed, using the digits 3, 5, 6, 7 and 8 without repetition
(a) 216 (b) 192 (c) 120 (d) 72

59) The number of ways in which we can arrange 4 letters of the word "MATHEMATICS" is given by
(a) 136 (b) 2454 (c) 1680 (d) 192

60) The number of squares which can form on a chess a board is
(a) 64 (b) 160 (c) 224 (d) 204

61) If $^{n}C_{4}$, $^{n}C_{5}$ and $^{n}C_{5}$ are in A.P., the value of n =
(a) 14 (b) 11 (c) 7 (d) 8

62) Each of five questions is a multiple-choice test has 4 possible answers. The number of different sets of possible answers is
(a) 4^{5}-4 (b) 5^{4}-5 (c) 1024 (d) 1023

63) The number of positive integral solution of $x \times y \times z = 30$ is
(a) 3 (b) 1 (c) 9 (d) 27

64) There are 15 points in a plane of which exactly 8 are collinear. The number of straight lines obtained by joining these points is

(a) 105 (b) 28 (c) 77 (d) 78

65) The number of rectangles than can be formed on a chess board is

(a) $^9C_2$ (b) $^9C_2$ X $^9C_2$ (c) 204 (d) 224

66) The number of ways in which we can post 5 letters in 10 letter boxes is

(a) 50 (b) 5^{10} (c) 10^5 (d) 1

67) How many arrangements can be made out of letters of words "ENGINEERING"

(a) 11! (b) $\frac{11!}{(3!)^2(2!)^2}$ (c) $\frac{11!}{3!2!}$ (d) $\frac{11!}{3!}$

68) The number of 4 digit numbers, that can be formed by the digits 3, 4, 5, 6, 7, 8, 0 and no digit is being repeated is

(a) 720 (b) 840 (c) 280 (d) 560

69) The number of diagonals that can be drawn by joining the vertices of an octagon is

(a) 28 (b) 48 (c) 20 (d) 24

70) If ^nP_t = 720 nCr, then the value of r =

(a) 6 (b) 5 (c) 4 (d) 7

71) The number of different 4 letters words with or without meaning that can be formed from the letters of the word "SURYA" is

(a) 120 (b) 360 (c) 230 (d) 5

72) There is a letter lock with 3 rings each marked with 5 letters and do not know the keyword. The total number of attempts can be made to know the keyword is

(a) 3^5 (b) 5^3 (c) 124 (d) 5

73) If $^nC_{10}$ = $^nC_6$, then $^nC_2$ =

(a) 16 (b) 4 (c) 120 (d) 240

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73 x 1 = 73

1) (b) 108
2) (b) 124
3) (a) $30^4 \times 29^2$
4) (b) 5^5
5) (b) 3^4
6) (b) 6 and 7
7) (a) r!
8) (a) 90000
9) (b) 3
10) (b) 40
11) (c) $^{12}C_8$-$^{10}C_6$
12) (d) 18
13) (b) 12
14) (c) 11
15) (a) 45
16) (d) 116
17) (b) 6
18) (c) nC_r
19) (d) $^{52}C_5$ - $^{48}C_5$
20) (c) 1296
21) (b) 2^{10}

22) (b) P_{n+1}-1

23) (b) $\left(\frac{1}{2}\right)^n {}^{2n}C_n \times {}^nP_n$

24) (a) 14

25) (b) 81

26) (d) r! n-3C_{r-3}

27) (b) 1956

28) (a) 120

29) (a) 24

30) (a) r!

31) (c) 3

32) (c) 2m = n(n-1)

33) (b) 31

34) (c) 264

35) (c) 5

36) (b) 3

37) (b) 40

38) (b) 17

39) (a) 5

40) (c) -1

41) (a) L$n(n+2)$

42) (b) 25

43) (c) 35

44) (c) 3

45) (d) 60

46) (a) 30

47) (b) n

48) (d) 144

49) (c) 3

50) (d) 185

51) (d) 11

52) (b) 14

53) (b) ${}^{10}C_5$ X ${}^8C_4$

54) (b) 1023

55) (c) ${}^{(n+2)}C_r$

56) (d) 15

57) (c) 780

58) (b) 192

59) (b) 2454

60) (d) 204

61) (a) 14

62) (c) 1024

63) (d) 27

64) (d) 78

65) (b) ${}^9C_2$ X ${}^9C_2$

66) (c) 10^5

67) (b) $\frac{11!}{(3!)^2(2!)^2}$

68) (a) 720

69) (c) 20

70) (a) 6

71) (a) 120

72) (b) 5^3

73) (c) 120

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11th chapter 5 - 1 mark

Date : 14-Sep-19

11th Standard

Maths

Reg.No. :

Exam Time : 01:05:00 Hrs

Total Marks : 65

65 x 1 = 65

1) If a, 8, b are in AP, a, 4, b are in GP, and if a, x, b are in HP then x is
   (a) 2 (b) 1 (c) 4 (d) 16

2) The sequence $\frac{1}{\sqrt{3}}, \frac{1}{\sqrt{3}+\sqrt{2}} \frac{1}{\sqrt{3}+2\sqrt{2}}$...from an
   (a) AP (b) GP (c) HP (d) AGP

3) The HM of two positive numbers whose AM and GM are 16,8 respectively is
   (a) 10 (b) 6 (c) 5 (d) 4

4) If Sn denotes the sum of n terms of an AP whose common difference is d, the value of S_n-2S_{n-1}+S_{n-2} is
   (a) 0 (b) 2d (c) 4d (d) d^2

5) The remainder when 38^{15} is divided by 13 is
   (a) 12 (b) 1 (c) 11 (d) 5

6) The nth term of the sequence 1, 2, 4, 7, 11,... is
   (a) n^3+3n^2+2n (b) n3-$3n^2$+3n (c) $\frac{n(n+1)(n+2)}{3}$ (d) $\frac{n^2-n+2}{2}$

7) The sum up to n terms of the series $\frac{1}{\sqrt{1}+\sqrt{3}}+\frac{1}{\sqrt{1}+\sqrt{5}}+\frac{1}{\sqrt{5}+\sqrt{7}}+$ ....is
   (a) $\sqrt{2n+1}$ (b) $\frac{\sqrt{2n+1}}{2}$ (c) $\sqrt{2n+1}-1$ (d) $\frac{\sqrt{2n+1}-1}{2}$

8) The n^{th} term of the sequence $\frac{1}{2}, \frac{3}{4}, \frac{7}{8}, \frac{15}{6}$.+.....is
   (a) 2^n-n-1 (b) 1-2^n (c) 2^{-n}+n-1 (d) 2^{n-1}

9) The sum up to n terms of the series $\sqrt{2}+\sqrt{8}+\sqrt{18}+\sqrt{32}+$ .....is
   (a) $\frac{n(n+1)}{2}$ (b) 2n(n+) (c) $\frac{n(n+1)}{\sqrt{2}}$ (d) 1

10) The value of the series $\frac{1}{2}+\frac{7}{4}+\frac{13}{8}+\frac{19}{6}+$ .....is
   (a) 14 (b) 7 (c) 4 (d) 6

11) The sum of an infinite GP is 18. If the first term is 6, the common ratio is
   (a) $\frac{1}{3}$ (b) $\frac{2}{3}$ (c) $\frac{1}{6}$ (d) $\frac{3}{4}$

12) The coefficient of x^5 in the series e^{-2x} is
   (a) $\frac{2}{3}$ (b) $\frac{2}{3}$ (c) $\frac{-4}{15}$ (d) $\frac{4}{15}$

13) The value of $\frac{1}{2!}+\frac{1}{4!}+\frac{1}{6!}+\ldots. is$
   (a) $\frac{e^2+1}{2e}$ (b) $\frac{(e+1)^2}{2e}$ (c) $\frac{(e-1)^2}{2e}$ (d) $\frac{e^2+1}{2e}$

14) The value of $1-\frac{1}{2}\left(\frac{2}{3}\right)+\frac{1}{3}\left(\frac{2}{3}\right)^2-\frac{1}{4}\left(\frac{2}{3}\right)^2+\ldots. is$
   (a) $log\left(\frac{5}{3}\right)$ (b) $\frac{3}{2}log\left(\frac{5}{3}\right)$ (c) $\frac{5}{3}log\left(\frac{5}{3}\right)$ (d) $\frac{2}{3}log\left(\frac{2}{3}\right)$

15) If $\frac{T_2}{T_3}$is the expansion of $(a+b)^n$ and $\frac{T_3}{T_4}$ is the expansion of $(a+b)^{n+3}$ are equal, then n=
   (a) 3 (b) 4 (c) 5 (d) 6

16) The Co-efficient of x^{-17} in { \left({ x }^{ 4 }-\frac { 1 }{ { x }^{ 3 } } \right) }^{ 15 }is
   (a) 1365 (b) -1365 (c) 3003 (d) -3003

17) If the sum of n terms of an A. P. be $3n^2$ - n and its common difference is 6, then its first term is
   (a) 2 (b) 3 (c) 1 (d) 4

18) The term without x in ${ \left(2x-\frac { 1 }{ 2{ x }^{ 2 } } \right) }^{ 12 }$ is

(a) 495 (b) -495 (c) -7920 (d) 7920

19) The first and last term of an A.P.are 1 and 11.If the sum of its terms is 36, then the number of terms will be

(a) 5 (b) 6 (c) 7 (d) 8

20) If the first, second and last term of an A. P. are a, b and 2a respectively, then its sum is

(a) $\frac { ab }{ 2(b-a) }$ (b) $\frac { ab }{ b-a }$ (c) $\frac { 3ab }{ 2(b-a) }$ (d) none of these

21) If in an infinite G. P., first term is equal to 10 times the sum of all successive terms, then its common ratio is

(a) $\frac { 1 }{ 10 }$ (b) $\frac { 1 }{ 11 }$ (c) $\frac { 1 }{ 9 }$ (d) $\frac { 1 }{ 20 }$

22) The nth term of a G. Pis 128 and the sum of its n terms is 225. If its common ratio is 2, then its first term is

(a) 1 (b) 3 (c) 8 (d) none of these

23) The value of ${ 9 }^{ \frac { 1 }{ 3 } } ,{ 9 }^{ \frac { 1 }{ 9 } }{ 9 }^{ \frac { 1 }{ 27 } } ,\infty$ is

(a) 1 (b) 3 (c) 9 (d) none of these

24) The sum of the series $\frac { 1 }{ { log }_{ 2 }^{ 4 } } +\frac { 1 }{ { log }_{ 4 }^{ 4 } } +\frac { 1 }{ { log }_{ 8 }^{ 4 } } +.....+\frac { 1 }{ { log }_{ { 2 }^{ n } }^{ 4 } }$ is

(a) $\frac { n(n+1) }{ 2 }$ (b) $\frac { n(n+1)(2n+1) }{ 2 }$ (c) $\frac { n(n+1) }{ 4 }$ (d) none of these

25) If $\Sigma n=210$ then $\Sigma { n }^{ 2 }=$

(a) 2870 (b) 2160 (c) 2970 (d) none of these

26) Sum of n terms of the series $\sqrt { 2 } +\sqrt { 8 } +\sqrt { 18 } +\sqrt { 32 }$ ..is

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

27) The series $1+4x+8x^2+\frac { 32 }{ 3 } { x }^{ 3 }+.....+\infty \quad$ is

(a) e^x (b) e^{4x} (c) e^{2x} (d) e^{8x}

28) The series for $log \left(\frac { 1+x }{ 1-x } \right)$ is

(a) $x+\frac { { x }^{ 3 } }{ 3 } +\frac { { x }^{ 5 } }{ 5 } +...+\infty$ (b) $2\left[x+\frac { { x }^{ 3 } }{ 3 } +\frac { { x }^{ 5 } }{ 5 } +...+\infty \right]$ (c) $\frac { { x }^{ 2 } }{ 2 } +\frac { { x }^{ 4 } }{ 4 } +\frac { { x }^{ 6 } }{ 6 } +...+\infty$ (d) $2\left[\frac { { x }^{ 2 } }{ 2 } +\frac { { x }^{ 4 } }{ 4 } +\frac { { x }^{ 6 } }{ 6 } +...+\infty \right]$

29) The Co-efficient of x^3 in $\sqrt { \frac { 1-x }{ 1+x } } ,\left| x \right| < 1\quad$ is

(a) $\frac { 1 }{ 2 }$ (b) $\frac { 3 }{ 8 }$ (c) $\frac { -3 }{ 8 }$ (d) $\frac {- 1 }{ 2 }$

30) The value of 2 + 4 + 6 + + 2n is

(a) $\frac { n\left(n-1 \right) }{ 2 }$ (b) $\frac { n\left(n+1 \right) }{ 2 }$ (c) $\frac { 2n\left(2n-1 \right) }{ 2 }$ (d) n(n + 1)

31) The coefficient of x^6 in $(2 + 2x)^{10}$ is

(a) ${}^{10}C_6$ (b) 26 (c) ${}^{10}C_6 2^6$ (d) ${}^{10}C_6 2^{10}$

32) The coefficient of x^8y^{12} in the expansion of $(2x + 3y)^{20}$ is

(a) 0 (b) 28312 (c) $2^8 3^{12} + 2^{12} 3^8$ (d) ${}^{20}C_8\, 2^8\, 3^{12}$

33) If ${}^nC_{10} > {}^nC_r$ for all possible F, then a value of n is

(a) 10 (b) 21 (c) 19 (d) 20

34) If a is the arithmetic mean and g is the geometric mean of two numbers, then

(a) $a \le g$ (b) $a \ge g$ (c) a = g (d) a > g

35) If $(1 + x^2)^2 (1 + x)^n = a_0 + a_1x + a_2x^2 + ... + x^{n+4}$ and if a_0, a_1, a_2 are in AP, then n is

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

36) With usual notation $C_0 + C_2 + C_4 + ...$ is:

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

37) In the expansion of $(2x + 3)^5$ the coefficient of x^2 is:

(a) 720 (b) 1080 (c) 810 (d) 5

38) In the expansion of $(1 +x)^{22}$ which term is the middle term:

(a) T_{11} and T_{12} (b) T_{11} (c) T_{12} (d) T_{13}

39) AM, GM, HM denote the Arithmetic mean, Geometric mean and Harmonic mean respectively the relationship between this is:

(a) AM < GM < HM (b) AM ≤ GM ≤ HM (c) AM > GM > HM (d) AM≥GM≥HM

40) In the series $\frac{1}{1+\sqrt 2}+\frac{1}{\sqrt 2+\sqrt 3}+\frac{1}{\sqrt 3+\sqrt 4}+...$ some of first 24 number is:

(a) 4 (b) $\sqrt 24$ (c) $\frac{1}{\sqrt 24}$ (d) $\frac{1}{\sqrt 25-\sqrt 24}$

41) $1 - 2x + 3x^2 - 4x^3 + ..., |x|< 1$ is:

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

42) $\frac{1}{1!}+\frac{1}{3!}+\frac{1}{5!}+...$is:

(a) $\frac{e^{-1}}{2}$ (b) $\frac{e+e^{-1}}{2}$ (c) $\frac{e-e^{-1}}{2}$ (d) none of these

43) $\sqrt \frac{1-2x}{1+2x}$ is approximately equal to:

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

44) Expansion of $\log(\sqrt \frac{1+x}{1-x})$ is:

(a) $x+\frac{x^3}{3}+\frac{x^5}{5}+...$ (b) $1.\frac{x^2}{2}+\frac{x^4}{4}+...$ (c) $1-x+\frac{x^2}{2}+\frac{x^3}{5}+...$ (d) $x-\frac{x^2}{3}+\frac{x^3}{3}+...$

45) Thye value of $1-\frac{1}{2}(\frac{3}{4})+\frac{1}{3}(\frac{3}{4})^2-\frac{1}{4}(\frac{3}{4})^3+...$is:

(a) $\frac{3}{4}\log(\frac{7}{4})$ (b) $\frac{4}{3}\log(\frac{7}{4})$ (c) $\frac{1}{3}\log(\frac{7}{4})$ (d) $\frac{4}{3}\log(\frac{4}{7})$

46) The coefficient of a^5 in the expansion of $(3a + 5b)^5$ is

(a) 1 (b) 243 (c) 6750 (d) 9375

47) The coefficient of x^{32} in the expansion of $(x^4-\frac{1}{x^3})^{15}$

(a) $15C_4$ (b) $15C_3$ (c) $15C_5$ (d) $15C_6$

48) The middle term in the expansion of is $(x- \frac{2}{x})^{12}$ is

(a) $12C_6$ (b) $12C_6 2^6$ (c) $12C_7$ (d) $12C_6 2^7$

49) The sum of the series $C_0^2- C_1^2 + C_2^2 .....+ (- 1)^n C^2_n$ where n is an even integer is

(a) $2nC_n$ (b) $(-1)^n 2nC_n$ (c) $(-1)^n 2nC_{n-1}$ (d) $(-1)^{n/2} nC_{n/2}$

50) The ratio of the coefficient of x^{15} to the term independent of x in $[x^2+(\frac{2}{x})]^{15}$ is

(a) 1:16 (b) 1:8 (c) 1:32 (d) 1:64

51) $3 \log 2 + \frac{1}{4}-\frac{1}{2}(\frac{1}{4})^2+\frac{1}{3}(\frac{1}{4})^2+ . . . =$

(a) log8 (b) log10 (c) log2 (d) log4

52) $\left(1+\frac{1}{\lfloor2}+\frac{1}{\lfloor4}+\frac{1}{\lfloor6}+...\right)^2-\left(1+\frac{1}{\lfloor3}+\frac{1}{\lfloor5}+\frac{1}{\lfloor7}+...\right)^2=$

(a) 1 (b) 2 (c) e (d) 2e

53) $\frac{2}{1!}+\frac{4}{3!}+\frac{6}{5!}+. . .\infty =$

(a) e (b) 2e (c) $\frac{1}{e}$ (d) e^2

54) The larget coefficients in the expansion of $(1 + X)^{24}$ is

(a) $24C_{24}$ (b) $24C_{13}$ (c) $24C_{12}$ (d) $24C_{11}$

55) Sum of the binomial coefficients is

(a) 2n (b) n^2 (c) 2^n (d) n+17

56) The last term in the expansion of $(2 +\sqrt { 3 })^8$

(a) 81 (b) 27 (c) $\sqrt { 3 }$ (d) 3

57) The sum of the coefficients in the expansion of $(1 - x)^{10}$ is

(a) 0 (b) 1 (c) 10^2 (d) 1024

58) The value of $nC_0 - nC_1 + nC_2 - nC_3 ... + (-1)^n nC_n$ is

(a) 2^{n+1} (b) n (c) 2^n (d) 0

59) The value of n for which $\frac{a^{n+1}+b^{n+1}}{a^n+b^n}$ is the arithmetic mean of a and b is

(a) 1 (b) 2 (c) 4 (d) 0

60) $\frac{1}{q+r},\frac{1}{r+p},\frac{1}{p+q}$ are in A.P., then

(a) p,q,r are inA.P (b) p^2,q^2,r^2 are inA.P (c) $\frac{1}{p},\frac{1}{q},\frac{1}{r}$ (d) p,q,r are in H.P.

61) If a,b, c are in A.P, as well as in G.P then

(a) $a = b \neq c$ (b) $a \neq b = c$ (c) $a \neq b \neq c$ (d) $a = b = c$

62) The sum of 40 terms of an A.P whose first term is 2 and common difference 4 will be

(a) 3200 (b) 1600 (c) 200 (d) 2800

63) $2^{1/4}\,4^{1/8}\,8^{1/16}\,16^{1/32}\ldots =$

(a) 1 (b) 2 (c) $\frac{3}{2}$ (d) $\frac{5}{2}$

64) If x, 2x + 2, 3x + 3 . . . are in G.P, then the 4^{th} term is

(a) 27 (b) -27 (c) 13.5 (d) -13.5

65) If an A.P the sum of terms equidistant from the beginning and end is equal to

(a) first term (b) second term (c) sum of first and last term (d) last term

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65 x 1 = 65

1) (a) 2
2) (c) HP
3) (d) 4
4) (a) 0
5) (b) 1
6) (d) $\frac { { n }^{ 2 }-n+2 }{ 2 }$
7) (d) $\frac { \sqrt { 2n+1 } -1 }{ 2 }$
8) (b) $1-2^n$
9) (c) $\frac { n(n+1) }{ \sqrt { 2 } }$
10) (b) 7
11) (b) $\frac { 2 }{ 3 }$
12) (c) $\frac { -4 }{ 15 }$
13) (c) $\frac { { (e-1) }^{ 2 } }{ 2e }$
14) (b) $\frac { 3 }{ 2 } \log\left(\frac { 5 }{ 3 } \right)$
15) (a) 3
16) (b) -1365
17) (a) 2
18) (d) 7920
19) (b) 6
20) (c) $\frac { 3ab }{ 2(b-a) }$
21) (b) $\frac { 1 }{ 11 }$
22) (a) 1
23) (b) 3
24) (c) $\frac { n(n+1) }{ 4 }$
25) (a) 2870
26) (c) $\frac { n(n+1) }{ \sqrt { 2 } }$
27) (b) e^{4x}
28) (b) $2\left[x+\frac { { x }^{ 3 } }{ 3 } +\frac { { x }^{ 5 } }{ 5 } +...+\infty \right]$
29) (d) $\frac {- 1 }{ 2 }$
30) (d) n(n + 1)
31) (d) $^{10}C_6 2^{10}$
32) (d) $^{20}C_8\, 2^8\, 3^{12}$
33) (b) 21
34) (b) $a \ge g$
35) (b) 2
36) (a) 2^{n-1}
37) (b) 1080
38) (c) T_{12}
39) (d) AM≥GM≥HM

40) (a) 4

41) (b) $(1+x)^{-2}$

42) (c) $\frac{e-e^{-1}}{2}$

43) (d) $1-2x+x^2$

44) (a) $x+\frac{x^3}{3}+\frac{x^5}{5}+...$

45) (b) $\frac{4}{3}\log(\frac{7}{4})$

46) (b) 243

47) (a) $15C_4$

48) (b) $12C_6 2^6$

49) (d) $(-1)^{n/2}nC_{n/2}$

50) (c) 1:32

51) (b) log10

52) (a) 1

53) (a) e

54) (c) $24C_{12}$

55) (c) 2^n

56) (a) 81

57) (a) 0

58) (d) 0

59) (d) 0

60) (b) p^2,q^2,r^2 are inA.P

61) (d) a = b = c

62) (b) 1600

63) (b) 2

64) (a) 27

65) (c) sum of first and last term

Ravi home tutions

11th chapter 6 - 1 mark

Date : 14-Sep-19

11th Standard

Maths

Reg.No. : | | | | | |

Exam Time : 01:35:00 Hrs

Total Marks : 95

95 x 1 = 95

1) The equation of the locus of the point whose distance from y-axis is half the distance from origin is
(a) $x^2+3y=0$ (b) $x^2-3y^2=0$ (c) $3x^2+y^2=0$ (d) $3x^2-y^2=0$

2) Which of the following equation is the locus of $(at^2; 2at)$
(a) (b) $\frac{x^2}{a^2}+\frac{y^2}{b^2}=1$ (c) $x^2+y^2=a^2$ (d) $y^2=4ax$

3) Which of the following point lie on the locus of $3x^2+3y^2-8x-12y+17 = 0$
(a) (0,0) (b) (-2,3) (c) (1,2) (d) (0,-1)

4) If the point (8,-5) lies on the locus $\frac{x^2}{16}-\frac{y^2}{25}=k$, then the value of k is
(a) 0 (b) 1 (c) 2 (d) 3

5) Straight line joining the points (2, 3) and (-1, 4) passes through the point (α,β) if
(a) $\alpha+2=7$ (b) $3\alpha+\beta=9$ (c) $\alpha+3\beta=11$ (d) $3\alpha+\beta=11$

6) The slope of the line which makes an angle 45 with the line 3x- y = -5 are
(a) 1,-1 (b) $\frac{1}{2},-2$ (c) $1,\frac{1}{2}$ (d) $2,-\frac{1}{2}$

7) Equation of the straight line that forms an isosceles triangle with coordinate axes in the I-quadrant with perimeter $4 + 2\sqrt{2}$ is
(a) x+y+2=0 (b) x+y-2=0 (c) $x+y-\sqrt{2}=0$ (d) $x+y+\sqrt{2}=0$

8) The coordinates of the four vertices of a quadrilateral are (-2,4), (-1,2), (1,2) and (2,4) taken in order. The equation of the line passing through the vertex (-1,2) and dividing the quadrilateral in the equal areas is
(a) x+1=0 (b) x+y=1 (c) x+y+3=0 (d) x-y+3=0

9) The intercepts of the perpendicular bisector of the line segment joining (1, 2) and (3,4) with coordinate axes are
(a) 5,-5 (b) 5,5 (c) 5,3 (d) 5,-4

10) The equation of the line with slope 2 and the length of the perpendicular from the origin equal to $\sqrt5$ is
(a) $x+2y=\sqrt5$ (b) $2x+y=\sqrt5$ (c) 2x+y=5 (d) x+2y-5=0

11) A line perpendicular to the line 5x - y = 0 forms a triangle with the coordinate axes. If the area of the triangle is 5 sq. units, then its equation is
(a) $x+5y\pm5\sqrt2=0$ (b) $x-5y\pm5\sqrt2=0$ (c) $5x+y\pm5\sqrt2=0$ (d) $5x-y\pm5\sqrt2=0$

12) Equation of the straight line perpendicular to the line x - y + 5 = 0, through the point of intersection the y-axis and the given line
(a) x-y-5=0 (b) x+y-5=0 (c) x+y+5=0 (d) x+y+10=0

13) If the equation of the base opposite to the vertex (2,3) of an equilateral triangle is x +y = 2, then the length of a side is
(a) $\sqrt{\frac{3}{2}}$ (b) 6 (c) $\sqrt{6}$ (d) $3\sqrt{2}$

14) The line (p + 2q)x + (p - 3q)y = p - q for different values of p and q passes through the point
(a) $\left(\frac{3}{5},\frac{5}{2}\right)$ (b) $\left(\frac{2}{5},\frac{2}{5}\right)$ (c) $\left(\frac{3}{5},\frac{3}{5}\right)$ (d) $\left(\frac{2}{5},\frac{3}{5}\right)$

15) The point on the line 2x- 3y = 5 is equidistance from (1,2) and (3,4) is
(a) (7,3) (b) (4,1) (c) (1,-1) (d) (-2,3)

16) The image of the point (2, 3) in the line y = -x is
(a) (-3, -2) (b) (-3,2) (c) (-2, -3) (d) (3,2)

17) The length of $\bot$ from the origin to the line $\frac{x}{3}-\frac{y}{4}=1$ is
(a) $\frac{11}{5}$ (b) $\frac{5}{12}$ (c) $\frac{12}{5}$ (d) $\frac{-5}{12}$

18) The y-intercept of the straight line passing through (1,3) and perpendicular to 2xr- 3y + 1 = 0 is
(a) $\frac{3}{2}$ (b) $\frac{9}{2}$ (c) $\frac{2}{3}$ (d) $\frac{2}{9}$

19) If the two straight lines $x + (2k - 7)y + 3 = 0$ and $3kx + 9y - 5 = 0$ are perpendicular then the value of k is

(a) $k=3$ (b) $k=\frac13$ (c) $k=\frac23$ (d) $k=\frac32$

20) If a vertex of a square is at the origin and its one side lies along the line $4x + 3y - 20 = 0$, then the area of the square is

(a) 20 sq. units (b) 16 sq. units (c) 25 sq. units (d) 4 sq.units

21) If the lines represented by the equations $6x^2+41xy-7y^2=0$ make angles and with x-axis then $\alpha\tan\beta=$

(a) $-\frac{6}{7}$ (b) $+\frac{6}{7}$ (c) $-\frac{7}{6}$ (d) $+\frac{7}{6}$

22) The area of the triangle formed by the lines $x^2 - 4y^2 = 0$ and $x = a$ is

(a) $2a^2$ (b) $\frac{\sqrt3}{2}a^2$ (c) $\frac12a^2$ (d) $\frac{2}{\sqrt3}a^2$

23) If one of the lines given by $6x^2 - xy + 4cy^2 = 0$ is $3x + 4y = 0$, then c equals to

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

24) θ is acute angle between the lines $x^2-xy-6y^2 = 0$, then $\frac{2\cos\theta+3\sin\theta}{4\sin\theta+5\cos\theta}$ is

(a) 1 (b) $-\frac{1}{9}$ (c) $\frac{5}{9}$ (d) $\frac{1}{9}$

25) The equation of one the line represented by the equation $x^2+2xy\cot\theta-y^2 = 0$ is

(a) $x-y\cot\theta=0$ (b) $x+y\tan\theta=0$ (c) $x\cos\theta+y(\sin\theta+1)=0$ (d) $x\sin\theta+y(\cos\theta+1)=0$

26) The locus of a point which moves such that it maintains equal distance from the fixed point is a

(a) straight line (b) line bisector (c) circle (d) angle bisector

27) The locus of a point which moves such that it maintains equal distances from two fixed points is a

(a) straight line (b) line bisector (c) pair of straight lines (d) angle bisector

28) The value of x so that 2 is the slope of the line through (2, 5) and (x, 3) is

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

29) If the points (a, 0) (0, b) and (x,y) are collinear, then

(a) $\frac{x}{a}-\frac{y}{b}=1$ (b) $\frac{x}{a}+\frac{y}{b}=1$ (c) $\frac{x}{a}+\frac{y}{b}=-1$ (d) $\frac{x}{a}+\frac{y}{b}=0$

30) Slope of X-axis or a line parallel to X-axis is

(a) 0 (b) positive (c) negative (d) infinity

31) The equation of the line passing through (1, 5) and perpendicular to the line $3x - 5y + 7 = 0$ is

(a) $5x+3y-20=0$ (b) $3x-5y+7=0$ (c) $3x-5y+6=0$ (d) $5x+3y+7=0$

32) The figure formed by the lines $ax \pm by \pm c = 0$ is a

(a) rectangle (b) square (c) rhombus (d) none of these

33) Distance between the lines $5x + 3y - 7 = 0$ and $15x + 9y + 14 = 0$ is

(a) $\frac{35}{\sqrt{34}}$ (b) $\frac{1}{3\sqrt{34}}$ (c) $\frac{35}{2\sqrt{34}}$ (d) $\frac{35}{3\sqrt{34}}$

34) The angle between the lines $2x - y + 3 = 0$ and $x + 2y + 3 = 0$ is

(a) 90° (b) 60° (c) 45° (d) 30°

35) The value of $\lambda$for which the lines $3x + 4y = 5$, $5x + 4y = 4$ and $\lambda x + 4y = 6$ meet at a point is

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

36) If the lines $x + q = 0$, $y - 2 = 0$ and $3x + 2y + 5 = 0$ are concurrent, then the value of q will be

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

37) A point equi-distant from the line $4x + 3y + 10 = 0$, $5x - 12y + 26 = 0$ and $7x + 24y - 50 = 0$ is

(a) (1, -1) (b) (1, 1) (c) (0,0) (d) (0, 1)

38) The distance between the line $12x - 5y + 9 = 0$ and the point (2, 1) is

(a) $\pm\frac{28}{13}$ (b) $\frac{28}{13}$ (c) $-\frac{28}{13}$ (d) none of these

39) If $7x^2 - 8xy + A = 0$ represents a pair of perpendicular lines, the A is

(a) 7 (b) -7 (c) -8 (d) 8

40) When $h^2 = ab$, the angle between the pair of straight lines $ax^2 + 2hxy + by^2 = 0$ is

(a) $\frac\pi4$ (b) $\frac\pi3$ (c) $\frac\pi6$ (d) 0^o

41) The locus of a moving point $P(a\cos^3\theta, a\sin^3\theta)$ is

(a) ${ x }^{ \frac { 2 }{ 3 } }+{ y }^{ \frac { 2 }{ 3 } }={ a }^{ \frac { 2 }{ 3 } }$ (b) $x^2+y^2=a^2$ (c) $x + y = a$ (d) ${ x }^{ \frac { 3 }{ 2 } }+{ y }^{ \frac { 3 }{ 2 } }={ a }^{ \frac { 3 }{ 2 } }$

42) AB = 12 cm. AB slides with A on x-axis, B on y-axis respectively. Then the radius of the circle which is the locus of ΔAOB, where O is origin is:

(a) 36 (b) 4 (c) 16 (d) 9

43) The equating straight line with y-intercept -2 and inclination with x-axis is 135° is:

(a) x+y-2=0 (b) y-x+2=0 (c) y+x+2=0 (d) none

44) The length of the perpendicular from origin to line is $\sqrt{3}x-y+24=0$ is:

(a) $2\sqrt{3}$ (b) 8 (c) 24 (d) 12

45) If(1, 3) (2,1) (9, 4) are collinear then a is:

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

46) The lines x + 2y - 3 = 0 and 3x - y + 7 = 0 are:

(a) parallel (b) neither parallel nor perpendicular (c) perpendicular (d) parallel as wellas perpendicular

47) Find the nearest point on the line 3x + y = 10 from the origin is:

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

48) The slope of the line joining A and B where A is (-1, 2) and B is the point of intersection of the lines 2x + 3y = 5 and 3x + 4y = 7 is:

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

49) Find the angle between the lines $3x^2$,- 10xy - $3y^2$ = 0

(a) 90° (b) 45° (c) 60° (d) 30°

50) Find the point of intersection of the lines $2x^2$+ xy -y^2- 5x + 3y + 2 = 0:

(a) (-1, -1) (b) (1, 1) (c) (1, 0) (d) (0, 1)

51) If the straight line y=mx+c passes through the point (1,2) and (-2,4) then the value of m and c are

(a) $\frac{8}{3},\frac{-2}{3}$ (b) $\frac{-2}{3},\frac{8}{3}$ (c) $\frac{2}{3},\frac{-8}{3}$ (d) $\frac{-2}{3},\frac{-8}{3}$

52) The inclination to the x-axis and intercept on y-axis of the line $\sqrt {2y}=x+2\sqrt 2$

(a) $30^0,\sqrt 2$ (b) 30^0,2 (c) $45^0,2\sqrt 2$ (d) 45^0,2

53) The equation of the bisectors of the angle between the co-ordinate axes are

(a) x+y=0 (b) x-y=0 (c) $x\pm y=0$ (d) x=0

54) The equation of a line which makes an angle of 135° with positive direction of x-axis and passes through the point (1,1) is

(a) x+y=2 (b) x-y=0 (c) $2\sqrt {2x}-\sqrt {2y}=0$ (d) x-3y=0

55) The equation of the straight line bisecting the line segment joining the points (2,4) and (4,2) and making an angle of 45^0 with positive direction of x-axis is

(a) x+y=6 (b) x-y=0 (c) x-y=6 (d) x+y=0

56) The equation of median from verten B of the triangle $\triangle ABC$ the co-ordinates of whose vertices are A(-1,6)B(-3,-9)C(5,-8)

(a) 29x+4y+5=0 (b) 8x-5y-21=0 (c) 13x+14y+47=0 (d) x+y-7=0

57) The equation of the straight line which passes through the point (2,4) and have intercept on the axes equal in magnitude but opposite in sign is

(a) x-y=2 (b) x-y+2=0 (c) x-y+1=0 (d) x-y-1=0

58) The equation of the straight line upon which the length of perpendicular from the origin is p and this normal makes an angle θ with the positive direction of x-axis is

(a) $x \sin\theta+y\cot\theta=p$ (b) $x\sin\theta+y\cos\theta=p$ (c) $x\sin\theta+y\tan\theta\cos\theta=p$ (d) $x\cos\theta+y\sin\theta=p$

59) The length of perpendicular from the origin to a line is 12 and the line makes an angle of 120° with the positive direction of y-axis. then the equation of line is

(a) $x+y\sqrt 3=24$ (b) $x+y=12\sqrt 2$ (c) x+y=24 (d) $x+y=12\sqrt 3$

60) The lines $x \cos \alpha+y\sin\alpha=p$ and $x\cos\beta+y\sin\beta=q$ will be perpendicular if

(a) $\alpha =\beta$ (b) $\alpha-\beta=\frac{\pi}{2}$ (c) $|\alpha-\beta|=\frac{\pi}{2}$ (d) $\alpha-\beta=0$

61) The distance of the point (2,3) from the line 2x-3y+9=0 measured along the line 2x-2y+5=0 is

(a) $\sqrt 2$ (b) $2\sqrt 2$ (c) $4\sqrt 2$ (d) 4

62) Which one of the following statements in false?

(a) A point (α,β) will lie on origin side of the line $ax+by+c=0$ if $a\alpha+b\beta+c$ and c have the same sign
(b) A point (α,β) will lie on non-origin side of the line $ax+by+c=0$ if $a\alpha+b\beta+c$ and c have opposite sign
(c) If $\alpha=\frac{\pi}{2}, p=0$, then the equation $x\cos\alpha+y\sin\alpha=p$ represents x-axis
(d) If $\alpha=0, p=0$, then the equation $x\cos\alpha+y\sin\alpha=$presents x-axis

63) The lines $ax+y+1=0, x+by+1=0$ and $x+y+c=0 (a\neq b\neq c\neq 1)$ are concurrent, then the value of $\frac{1}{1-a}+\frac{1}{1-b}+\frac{1}{1-c}=$

(a) -1 (b) 1 (c) 0 (d) abc

64) The co-ordinates of the foot of the perpendicular drawn from the point (2,3) to the line $3x-y+4=0$ is

(a) $(\frac{1}{10},\frac{37}{10})$ (b) $(\frac{-1}{10},-\frac{37}{10})$ (c) $(\frac{-1}{10},\frac{37}{10})$ (d) $(\frac{37}{10},\frac{-1}{10})$

65) Which one of the following statements is false?

(a) The image of a point $(\alpha\beta)$ about x-axis $(\alpha,-\beta)$
(b) The image of the line $ax+by+c=0$ about x-axis is $ax-by+c=0$
(c) The image of a point (α,β) about y-axis $(-\alpha,\beta)$
(d) The image of the line $ax+by+c=0$ about y-axis is $ax-by+c=0$

66) The image of the point (1,2) with respect to the line y=x is

(a) (-1,-2) (b) (2,1) (c) (2,-1) (d) (2,1)

67) The condition that the slope of one of the lines represented by $ax^2+2hxy+by^2=0$ is n times the slope of the other is

(a) $4nh^2=ab(1+n)^2$ (b) $8h^2=9ab$ (c) $4n=ab(1+n)^2$ (d) $4nh^2=ab$

68) The equation $3x^2+2hxy+3y^2=0$ represents a pair of straight lines passing through the origin. The two lines are

(a) real and distinct if $h^2 > 3$ (b) real and distinct if $h^2 > 0$ (c) real and distinct $h^2 > 6$ (d) real and distinct if $h^2-9=0$

69) Pair of lines perpendicular to the lines represented by $ax^2+2hxy+by^2=0$ and through origin is

(a) $ax^2+2hxy+by^2=0$ (b) $bx^2+2hxy+ay^2=0$ (c) $bx^2-2hxy+ay^2=0$ (d) $bx^2-2hxy+ay^2=0$

70) The angle between the lines $(x^2+y^2)\sin^2\alpha=(x\cos\alpha-y\beta)^2$

(a) α (b) 2α (c) $\alpha+\beta$ (d) None

71) If $h^2=ab$, then the lines represented by $ax^2+2hx+by^2=0$ are

(a) parallel (b) perpendicular (c) coincident (d) None

72) The equation of the bisectors of the angle between the lines represented by $3x^2-5xy+4y^2=0$ is

(a) $3x^2-5xy-3y^2=0$ (b) $3x^2+5xy+4y^2=0$ (c) $5x^2-2xy-5y^2=0$ (d) $5x^2-2xy+5y^2=0$

73) If co-ordinate axes are the angle bisectors of the pair of lines $ax^2+2hxy+by^2=0$ then

(a) a=b (b) h=0 (c) a+b=0 (d) $a^2+b^2=0$

74) The value λ for which the equation $12x^2-10xy+2y^2+11x-5y+\lambda=0$ represent a pair of straight lines is

(a) $\lambda=1$ (b) $\lambda=2$ (c) $\lambda=3$ (d) $\lambda=0$

75) The points (k+1,1),(2k+1,3) and (2k+2,2k) are collinear if

(a) k=-1 (b) $k=\frac{1}{2}$ (c) k=3 (d) k=2

76) The image of the point (3,8) in the line x+3y=7 is

(a) (1,4) (b) (-1,-4) (c) (-4,-1) (d) (1,-4)

77) If the points (2k,k)(k,2k) and (k,k)enclose a triangle of area 18 sq units, then the centroid of the triangle is

(a) (8,8) (b) (4,4) (c) (3,3) (d) (2,2)

78) The points (a,0),(0,b) and (1,1) will be collinear if

(a) a+b=1 (b) a+b=2 (c) $\frac{1}{a}+\frac{1}{b}=1$ (d) a+b=0

79) The angle between the lines 2x-y+5=0 and 3x+y+4=0 is

(a) 45^0 (b) 30^0 (c) 60^0 (d) 90^0

80) The gradient of one of the lines of $ax^2+2hxy+by^2=0$ is twice that of the other, then

(a) $h^2=ab$ (b) h=a+b (c) $8h^2=9ab$ (d) $9h^2=8ab$

81) The equation $x^2+kxy+y^2-5x-7y+6=0$ represents a pair of straight lines then k=

(a) $\frac{5}{3}$ (b) $\frac{10}{3}$ (c) $\frac{3}{2}$ (d) $\frac{3}{10}$

82) The equation of the straight line joining the origin to the point of intersection of y-x+7=0 and y+2x-2=0 is

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

83) Separate equation of lines for a pair of lines whose equation is $x^2+xy-12y^2=0$ are

(a) $x+4y=0$ and $x+3y=0$ (b) $2x-3y=0$ and $x-4y=0$ (c) $x-6y=0$ and $x-3y=0$ (d) $x+4y=0$ and $x-3y=0$

84) The angle between the lines $x^2+4xy+y^2=0$ is

(a) 60^0 (b) 15^0 (c) 30^0 (d) 45^0

85) The distance between the parallel lines $3x-4y+9=0$ and $6x-8y-15=0$ is

(a) \frac{-33}{10} (b) \frac{10}{33} (c) \frac{33}{10} (d) \frac{33}{20}

86) If one of the lines of $my^2+(1-m^2)xy-mx^2=0$ is a bisector of the angle between the lines $xy=0$ then m is

(a) \frac{-1}{2} (b) -2 (c) 1 (d) 2

87) If one of the lines by $6x^2-xy+4cy^2=0$ is $3x+4y=0$, then c=

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

88) The point (2,1) and (-3,5) are on

(a) Same side of the line 3x-2y+1=0 (b) Opposite sides of the line 3x-2y+1=0 (c) On the line 3x-2y+1=0 (d) On the line x+y=3

89) The co-ordinates of a point on x+y+3=0 whose distance from x+2y+2=0 is \sqrt 5, is

(a) (9,6) (b) (-9,6) (c) (6,-9) (d) (-9,-6)

90) If p is the length of perpendicular from origin to the line \frac{x}{a}+\frac{y}{b}=1then

(a) \frac{1}{p^2}=\frac{1}{a^2}+\frac{1}{b^2} (b) \frac{1}{p^2}=\frac{1}{a^2}-\frac{1}{b^2} (c) \frac{1}{p^2}=-\frac{1}{a^2}+\frac{1}{b^2} (d) \frac{1}{p^2}=-\frac{1}{a^2}-\frac{1}{b^2}

91) If O is the origin and Q is a variable point on $y^2=x$, then the locus of the mid-point of OQ is

(a) $y^2=2x$ (b) $2y^2=x$ (c) $4y^2=x$ (d) $y=2x^2$

92) The locus of a point which is equidistant from (-1,1) and (4,2) is

(a) 5x+3y+9=0 (b) 5x+3y-9=0 (c) 3x-5y=0 (d) 3x+5y-9=0

93) The locus of a point which is equidistant from (1,0) and (-1,0) is

(a) x-axis (b) y-axis (c) y=x (d) y=-x

94) If the co-ordinates of a variable point p be (t+\frac{1}{t},t-\frac{1}{t})where t is the parameter then the locus of p

(a) xy=1 (b) $x^2+y^2=4$ (c) $x^2-y^2=4$ (d) $x^2-y^2=8$

95) The locus of a point which is collinear with the points (a,0) and (0,b) is

(a) x+y=1 (b) \frac{x}{a}+\frac{y}{b}=1 (c) x+y=ab (d) \frac{x}{a}-\frac{y}{b}=1

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1) (d) $3x^2-y^2=0$
2) (d) $y^2=4ax$
3) (c) (1,2)
4) (d) 3
5) (c) \alpha+3\beta=11
6) (b) \frac{1}{2},-2
7) (b) x+y-2=0
8) (b) x+y=1
9) (b) 5,5
10) (c) 2x+y=5
11) (a) x+5y\pm5\sqrt2=0
12) (c) x+y+5=0
13) (c) \sqrt{6}
14) (d) \left(\frac{2}{5},\frac{3}{5}\right)
15) (b) (4,1)
16) (a) (-3, -2)

17) (c) $\frac{12}{5}$
18) (b) $\frac{9}{2}$
19) (a) $k=3$
20) (b) 16 sq. units
21) (a) $-\frac{6}{7}$
22) (c) $\frac12a^2$
23) (a) -3
24) (c) $\frac{5}{9}$
25) (b) $x+y\tan\theta =0$
26) (c) circle
27) (b) line bisector
28) (b) 1
29) (b) $\frac{x}{a}+\frac{y}{b}=1$
30) (a) 0
31) (a) $5x+3y-20=0$
32) (c) rhombus
33) (c) $\frac{35}{2\sqrt{34}}$
34) (a) 90°
35) (b) 1
36) (c) 3
37) (c) (0,0)
38) (b) $\frac{28}{13}$
39) (b) -7
40) (a) $\frac\pi4$
41) (a) ${ x }^{ \frac { 2 }{ 3 } }+{ y }^{ \frac { 2 }{ 3 } }={ a }^{ \frac { 2 }{ 3 } }$
42) (a) 36
43) (c) $y+x+2=0$
44) (d) 12
45) (a) $\frac{1}{2}$
46) (b) neither parallel nor perpendicular
47) (c) (3, 1)
48) (d) $-\frac{1}{2}$
49) (a) 90°
50) (b) (1, 1)
51) (b) $\frac{-2}{3},\frac{8}{3}$
52) (d) 45^0,2
53) (c) $x\pm y=0$
54) (a) $x+y=2$
55) (b) $x-y=0$
56) (b) $8x-5y-21=0$
57) (b) $x-y+2=0$
58) (d) $x\cos\theta+y\sin\theta=p$
59) (a) $x+y\sqrt 3=24$
60) (c) $|\alpha-\beta|=\frac{\pi}{2}$
61) (c) $4\sqrt 2$
62) (d) If $\alpha =0,p=0$, then the equation $x\cos\alpha+y\sin\alpha=$presents x-axis
63) (a) -1
64) (c) $(\frac{-1}{10},\frac{37}{10})$

65) (d) The image of the line ax+by+c=0 about y-axis is ax-by+c=0

66) (d) (2,1)

67) (a) $4nh^2=ab(1+n)^2$

68) (b) real and distinct if $h^2>0$

69) (c) $bx^2-2hxy+ay^2=0$

70) (b) 2α

71) (c) coincident

72) (c) $5x^2-2xy-5y^2=0$

73) (b) h=0

74) (b) $\lambda=2$

75) (d) k=2

76) (b) (-1,-4)

77) (a) (8,8)

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

79) (a) 45^0

80) (c) $8h^2=9ab$

81) (b) $\frac{10}{3}$

82) (d) 4x+3y=0

83) (d) x+4y=0 and x-3y=0

84) (a) 60^0

85) (c) $\frac{33}{10}$

86) (c) 1

87) (d) -3

88) (b) Opposite sides of the line 3x-2y+1=0

89) (b) (-9,6)

90) (a) $\frac{1}{p^2}=\frac{1}{a^2}+\frac{1}{b^2}$

91) (b) $2y^2=x$

92) (b) 5x+3y-9=0

93) (b) y-axis

94) (c) $x^2-y^2=4$

95) (b) $\frac{x}{a}+\frac{y}{b}=1$