RAVI MATHS TUITION CENTER CH - 82. PH - 8 0 5 6 2 0 6 2 0 8

11TH ALGEBRA 5 MARKS TEST 5

Date : 11-Jun-19

11th Standard

Maths

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

Time : 01:30:00 Hrs

Total Marks : 50

10 x 5 = 50

1) $\left|x-\frac{1}{4}\right|<\left|\frac{1}{2}x-\frac{3}{4}\right|$

2) Find the values of k so that the equation x^2 =2x(1+3k)+7(3+2k)=0 has real and equal roots.

3) If α and β are the roots of the equation $3x^2$-4x+1 =0,form the equation whose roots are $\frac{\alpha^2}{\beta}$ and $\frac{\beta^2}{\alpha}$

4) Solve for x^4-$7x^3$+$8x^2$+8x-8=0 .Given 3-$\sqrt{5}$ is a root

5) Solve $\frac{x-2}{x+4}\geq\frac{5}{x+3}$

6) Resolve into partial fractions $\frac{x+4}{(x^2-4)(x+1)}$

7) Resolve into partial fractions $\frac{x^2-2x-9}{(x+1)(x^2+x+6)}$

8) Determine the region in the Plane determined by the inequalities 3x+4y≤60,x+3y≤30,x≥0,y≥0

9) Solve $(1-x)^{1/4}+(15+x)^{1/4}=2$

10) Solve $(x+1)^{\frac{1}{3}}=\sqrt{x-3}$

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4) Solve for x^4-$7x^3$+$8x^2$+8x-8=0 .Given 3-$\sqrt{5}$ is a root

5) Solve $\frac{x-2}{x+4}\geq\frac{5}{x+3}$

6) Resolve into partial fractions $\frac{x+4}{(x^2-4)(x+1)}$

7) Resolve into partial fractions $\frac{x^2-2x-9}{(x+1)(x^2+x+6)}$

8) Determine the region in the Plane determined by the inequalities 3x+4y≤60,x+3y≤30,x≥0,y≥0

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RAVI MATHS TUITION CENTER CH - 82. PH - 8 0 5 6 2 0 6 2 0 8

11TH ALGEBRA 5 MARKS TEST 4

Date : 11-Jun-19

11th Standard

Maths

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

Time : 01:30:00 Hrs

Total Marks : 50

10 x 5 = 50

1) If $a^2+b^2 = 7ab$.Show that $\log\left(\frac{a+b}{3}\right) = \frac{1}{2}$ (log a +log b)

2) Solve : $log_2 x - 3log_{\frac{1}{2}} x = 6$

3) Find all pairs of consecutive odd natural numbers both of which are larger than 10 and their sum is less than 40.

4) Resolve the following rational expressions into partial fractions.

$$\frac{x}{(x^2+1)(x-1)(x+2)}$$

5) if α and β are the roots of the quadratic equation $x^2 + \sqrt{2x} + 3 = 0$, form a quadratic polynomial with zeros $\frac{1}{\alpha}, \frac{1}{\beta}$

6) Resolve the following rational expressions into partial fractions.

$$\frac{x}{(x-1)^3}$$

7) Resolve the following rational expressions into partial fractions.

$$\frac{x^2+x+1}{x^2-5x+6}$$

8) Resolve the following rational expressions into partial fractions.

$$\frac{6x^2-x+1}{x^3+x^2+x+1}$$

9) Solve $\frac{x+1}{x+3} < 3$

10) **Solve:**

(i) $\frac{3(x-2)}{5} \leq \frac{5(2-x)}{3}$

(ii) $\frac{5-x}{3} < \frac{x}{2} - 4.$

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RAVI MATHS TUITION CENTER CH - 82. PH - 8 0 5 6 2 0 6 2 0 8

11TH ALGEBRA 2 & 3 MARKS TEST 2

Date : 11-Jun-19

11th Standard

Maths

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

Time : 01:30:00 Hrs

Total Marks : 50

10 x 2 = 20

1) Solve for x $\left|3-\frac{3}{4}x\right| \leq \frac{1}{4}$

2) Solve $-3|x|+5 \leq -2$ and graph the solution set in a number line.

3) Solve: $\frac{1}{5}|10x-2|<1$

4) Represent the following inequalities in the interval notation:
$-2x>0$ or $3x-4<11$

5) Compute $log_9^{27}-log_{27}^{9}$

6) Prove $log\frac{a^2}{bc}+log\frac{b^2}{ca}+log\frac{c^2}{ab}=0$

7) Prove $log_{a^2}a \times log_{b^2}b \times log_{c^2}c=\frac{1}{8}$

8) Determine the region in the Plane determined by the inequalities. $x \leq 3y, x \geq y$

9) Solve $\log_{5-x}(x^2-6x+65)=2$

10) Solve $(2x+1)^2-(3x+2)^2=0$

10 x 3 = 30

11) Solve $\log_8 x+\log_4 x+\log_2 x=11$

12) Solve $\log_4 2^{8x}=2\log_2 8$

13) Prove that $log2+16log\frac{16}{15}+12log\frac{25}{24}+7log\frac{81}{80}=1$

14) If $\frac{log\,x}{y-z}=\frac{log\,y}{z-x}=\frac{log\,z}{x-y}$, then prove that xyz= 1

15) Find all values of x for which $\frac{x^3(x-1)}{x-2}>0$.

16) Solve: $\frac{x^2-4}{x^2-2x-15} \leq 0$

17) Resolve the following rational expressions into partial fractions.
$\frac{3x+1}{(x-2)(x+1)}$

18) Determine the region in the plane determined by the inequalities.
$2x+y \geq 8, \quad x+2y \geq 8, \quad x+y \leq 6$

19) Solve $3x^2+5x-2 \leq 0$.

20) Solve $\sqrt{x+14}<x+2$.

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RAVI MATHS TUITION CENTER CH - 82. PH - 8 0 5 6 2 0 6 2 0 8

ALGEBRA 2 & 3 MARKS TEST 1

Date : 11-Jun-19

11th Standard

Maths

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

Time : 01:30:00 Hrs

Total Marks : 50

10 x 2 = 20

1) Simplify $(125)^{\frac{2}{3}}$

2) Simplify $\frac{(27)^{\frac{-2}{3}}}{(27)^{\frac{-1}{3}}}$

3) Evaluate $\left(\left[(256)^{\frac{-1}{4}}\right]^{\frac{-1}{4}}\right)^3$

4) Simplify and hence the value of n: $\frac{3^{2n}9^2 3^{-n}}{3^{3n}} = 27$

5) Find two irrational numbers such that their sum is a rational number. Can you find two irrational numbers whose product is a rational number?

6) Find a positive number small than $\frac{1}{2^{1000}}$. Justify

7) Solve the inequation 5x-1 < 15 when x is a natural number

8) A solution is to be kept between 68°F and 77°F. What is the range in temperature in degree Celsius (c) or Fahrenheit (F),conversion formula is given by $F = \frac{9}{5}$ C + 32?

9) Solve the equation $\frac{x+2}{x+3} = \frac{x+4}{2x+3}$

10) Solve :$x^2+2|x|-8 = 0$

10 x 3 = 30

11) If $\left(x^{+\frac{1}{2}} + x^{-\frac{1}{2}}\right)^2 = \frac{9}{2}$,then find the value of $\left(x^{\frac{1}{2}} - x^{-\frac{1}{2}}\right)$ for x > 1

12) Solve the linear in equation $4-x \leq 3x+12$.

13) Solve the equation $x^{2/3} + x^{1/3} - 2 = 0$.

14) Solve the quadratic equation $5^{2x}-5^{x+3}+125=5^x$.

15) Simplify $\frac{1}{3-\sqrt{8}} - \frac{1}{\sqrt{8}-\sqrt{7}} + \frac{1}{\sqrt{7}-\sqrt{6}} - \frac{1}{\sqrt{6}-\sqrt{5}} + \frac{1}{\sqrt{5}-2}$

16) Solve $\frac{1}{|2x-1|} < 6$ and express the solution using the interval notation.

17) Solve $2|x+1| - 6 \leq 7$ and graph the solution set in a number line.

18) If $x=\sqrt{2}+\sqrt{3}$ find $\frac{x^2+1}{x^2-1}$

19) Solve $\sqrt[8]{\frac{x}{x+3}} - \sqrt{\frac{x+3}{x}} = 2.$

20) A factory kept increasing its out-put by the same percentage every year. Find the percentage, if it is known that the output has doubled in the last two years.

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RAVI MATHS TUITION CENTER CH - 82. PH - 8 0 5 6 2 0 6 2 0 8

11TH ALGEBRA 1 MARKS TEST 6

Date : 11-Jun-19

11th Standard

Maths

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

Time : 01:15:00 Hrs

Total Marks : 65

65 x 1 = 65

1) If $|x+2| \leq 9$,then x belongs to

(a) (-°,-7) (b) [-11,7] (c) $(-°,-7) \cup [11,\infty)$ (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,°] (b) (2,°) (c) (-°,2) (d) (-2,°)

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| ≥ |x-2| is

(a) [0,2] (b) [2,°] (c) (0,2) (d) (-°,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) $-x \leq -7$ (c) -x > -7 (d) $-x \geq -7$

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

(a) $x \in (10,°)$ (b) $x \in [10,°)$ (c) $x \in (-°,10]$ (d) $x \in [10,10)$

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

(a) $x \geq 5$ (b) $-5 < x < 5$ (c) $x \leq -5$ (d) $-5 \leq x \leq 5$

24) If $|x+3| \geq 10$ then

(a) $x \in (-13,7]$ (b) $x \in [-13,7)$ (c) $x \in (-°,-13] \cup [7,°)$ (d) $x \in (-°,-13] \cup [7,°)$

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) $k \in \left[\frac{1}{3}, 3\right]$ (b) $k \geq 3$ (c) $k \leq \frac{1}{3}$ (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 α and β 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 α and β are the roots of $2x^2+4x+5=0$ the equation where roots are 2α and 2β 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 $3x^2 + 5x - 2 \leq 0$

(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) $\sqrt[4]{(-2)^4} \times (-1000)^{\frac{1}{3}}$ 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 $2\log_{10} 3 + \log_{10} 16 - 2\log_{10} \frac{6}{5}$ is

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

52) The value of $\frac{3^{-3}\times 6^4 \times 12^{-3}}{9^{-4}\times 2^{-2}}$ 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

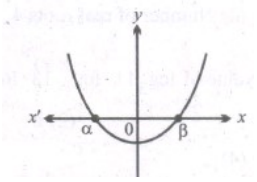
58) The number of real solutions of the equation $|x^2| - 3|x| + 2 = 0$ is

(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) $\alpha + \beta = -\frac{p}{r}$ (b) $\alpha\beta = \frac{p}{r}$ (c) $\alpha + \beta = \frac{-q}{p}$ (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 $x + \frac{1}{x} = 3\frac{1}{3}, x \neq 0$ are

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

64) If $x = \frac{1}{2+\sqrt{3}}$ 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

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