Sky Maths Solution

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Date : **Maths Unit Test** *Time : 1:30 hrs*

Portion : 3.1 to 3.8 *Marks : 50*

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Sec-A

Choose the Correct Answer 5x1=5

1. A system of three linear equations in three variables is inconsistent if their planes
   (1) intersect only at a point (2) intersect in a line
   (3) coincides with each other (4) do not intersect
2. The solution of the system x+y-3z=-6 ; -7y+7z=7 ; 3z=9 is ___
   (1) X=1 ; y=2 ; z=3 (2) x=-1; y=2 ; z=3
   (3) x=-1; y=-2 ; z=3 (4) non of above
3. The system of equations x –4y = 8 , 3x –12y =24
   (1) has infinitely many solutions (2) has no solution
   (3) has a unique solution (4) may or may not have a solution
4. Which of the following should be added to make x^4 + 64 a perfect square
   (1) $4x^2$ (2) $16x^2$ (3) $8x^2$ (4) $-8x^2$
5. A system of two linear equations in two variables is inconsistent, if their graphs
   (1) coincide (2) intersect only at a point
   (3) do not intersect at any point (4) cut the x-axis

Sec –B

Answer the Following 10x2=20

6. The father's age is six times his son's age. Six years hence the age of father will be four times his son's age. Find the present ages (in years) of the son and father.

7. Solve x +2y-z = 5 ; x-y+z=-2 ; -5x-4y+z=-11

8. Solve 3x+y-3z = 1 ; -2x-y+2z = 1 ; -x-y+z=2

9. Find the LCM of $x^4 - 1$ and x^2-2x+1

10. Find the LCM and GCD for $(x^2y + xy^2)$ and (x^2+xy) verify that f (*x*) x g (*x*)= LCM xGCD

11. Find the excluded values of $\frac{x}{x^2+1}$

12. Divide $\frac{16x^2-2x-3}{3x^2-2x-1} \div \frac{8x^2+11x+3}{3x^2-11x-4}$

13. If a polynomial P(x)= $x^2 - 5x - 14$ is divided by another polynomial q(x) we get $\frac{x-7}{x+2}$. Find q(x)

14. Simplify $\frac{x^3}{x-y} + \frac{y^3}{y-x}$

15. Find the square root $4x^2 + 20x + 25$

Sec –C

Answer the Following 5x5=25

16. The sum of the digits of a three-digit number is 11. If the digits are reversed, the new number is 46 more than five times the old number. If the hundreds digit plus twice the tens digit is equal to the units digit, then find the original three digit number ?

17. Find the GCD of the polynomials $x^3 + x^2 - x + 2$ and $2x^3 - 5x^2 + 5x - 3$

18. If x = $\frac{a^2+3a-4}{3a^2-3}$ and y = $\frac{a^2+2a-8}{2a^2-2a-4}$. find the value of x^2y^{-2}

19. Simplify $\frac{1}{x^2-5x+6} + \frac{1}{x^2-3x+2} - \frac{1}{x^2-8x+15}$

20. Find the Square root of $16x^4 + 8x^2 + 1$