ST. JOSEPH STUDY CENTRE

10th STD: Unit Test - 5 **MATHS** **Time: 1 Hr / Total Marks: 25**

I. Answer any 5 of the following questions: [5 x 2 = 10]

1. Solve the following system of linear equations in three variables $x + y + z = 5$; $2x - y + z = 9$; $x - 2y + 3z = 16$
2. Find the LCM of the given expressions. $16m$, $12m^2n^2$, $8n^2$.
3. Find the LCM of each pair of the following polynomials $x^4 - 27a^3x$, $(x - 3a)^2$ whose GCD is $(x - 3a)$.
4. Find the excluded values, if any of the following expressions. $\frac{x^2 + 6x + 8}{x^2 + x - 2}$.
5. Simplify $\frac{2a^2+5a+3}{2a^2+7a+6} \div \frac{a^2+6a+5}{-5a^2-35a-50}$.
6. If $A = \frac{2x+1}{2x-1}$, $B = \frac{2x-1}{2x+1}$ find $\frac{1}{A-B} - \frac{2B}{A^2-B^2}$.

II. Answer any 3 of the following questions: [3 x 5 = 15]

7. There are 12 pieces of five, ten and twenty rupee currencies whose total value is ₹105. When first 2 sorts are interchanged in their numbers its value will be increased by ₹20. Find the number of currencies in each sort.
8. Find the LCM of the given expressions. $(2x^2 - 3xy)^2$, $(4x - 6y)^3$, $8x^3 - 27y^3$.
9. Find the GCD of each pair of the following polynomials $(x^3 + y^3)$, $(x^4 + x^2y^2 + y^4)$ whose LCM is $(x^3 + y^3)(x^2 + xy + y^2)$.
10. Iniya bought 50 kg of fruits consisting of apples and bananas. She paid twice as much per kg for the apple as she did for the banana. If Iniya bought ₹ 1800 worth of apples and ₹ 600 worth bananas, then how many kgs of each fruit did she buy?

----------ALL THE BEST----------

- Test should be written under the supervision of your parents and get the answer paper signed from them.
- No corrections should be made after the test timings. We expect your honesty.
- Test Papers have to be submitted after the completion of all the 4 tests.
- Submission Date of Test Papers: 27th Aug - 30th Aug 2021. Timings: 9.30 AM - 1.00 PM /5.00 PM - 8.00 PM