ST. JOSEPH STUDY CENTRE

I. Answer the following questions: [3 x 2 = 6]

1. If $P_1^{x_1}$ x $P_2^{x_2}$ x $P_3^{x_3}$ x $P_4^{x_4}$ = 113400 where P_1, P_2, P_3, P_4 are primes in ascending order and x_1, x_2, x_3, x_4 are integers, find the value of P_1, P_2, P_3, P_4 and x_1, x_2, x_3, x_4 .

2. Today is Tuesday. My uncle will come after 45 days. In which day my uncle will be coming?

3. Fine a_8 and a_{15} whose n^{th} terms is $a_n = \begin{cases} \frac{n^2-1}{n+3} & ; n \text{ is even, } n \in N \\ \frac{n^2}{2n+1} & ; n \text{ is odd, } n \in N \end{cases}$

II. Answer the following questions: [3 x 3 = 9]

1. If d is the Highest Common Factor of 32 and 60, find x and y satisfying d = 32x + 60y.

2. Find the greatest number consisting of 6 digits which is exactly divisible by 24, 15, 36?

3. Find the indicated terms of the sequences whose n^{th} terms are given by

   i) $a_n = \frac{5n}{n+2}$; a_6 and a_{13} ii) $a_n = - (n^2 - 4)$; a_4 and a_{11}

III Answer the following questions: [2 x 5 = 10]

1. When the positive integers a, b and c are divided by 13, the respective remainders are 9, 7 and 10. Show that a + b + c is divisible by 13

2. Find the HCF of 252525 and 363636.

---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: 1st September, 2nd September, 3rd September   Timings: 9 AM – 12.30 PM / 5 PM- 7 PM