**SAMPLE PAPER-2013**

**CLASS-X**

**Subject : Maths**

**Practice test**

**Real Number**

**TIME: 3 hours M.M – 100**

**General Instruction**

1. All question are compulsory.
2. The question paper consists of 34 questions divide into four sections A, B, C and D section A comprises 10 questions of 1 marks each. Section B comprises 8 questions of 2 marks each. Section C comprises 10 questions of 3 marks each. Section D comprises 6 questions of 4 marks each.
3. Question no 1 to 10 in Section A are M.C.Q where you are select one correct option out of the given four.
4. There is no overall choice. How ever, internal choice has been provided in one question of 2 marks, 3 question of three marks and 2 question of 4 marks.
5. Use of calculator is not permitted.

**SECTION [A]**

1. Euclid’s Division Lemma states that for any two positive integers a and b there exist unique integers q and r such that a = bq + r, where r must satisfy.
2. *l < r < b*  (ii) 0 ≤ r < b
3. 0 ≤ r < b (iii) 0 < r ≤ b
4. The decimal expansion of  will terminate after how many places of decimal?

(i) 1 (ii) 2 (iii) 3 (iv) will not terminate

1. One of the given numbers is rational. The number is
2.  (ii) 
3.  (iv) 
4. If d = LCM (36, 198) the value of d is :
5. 396 (ii) 198
6. 36 (iv) 1
7. A rational number can be expressed as a terminating decimal, if the denominator has factors :

(i) 2,3 or 5 (ii) 2 or 3

(iii) 3 or 5 (iv) 2 or 5

1. The decimal expansion of  will terminate after :

(i) one decimal place (ii) two decimal place

(iii) three decimal place (iv) More than 3 decimal place

1. Using the Euclid division lemma for any two positive integers a and b with a > b we can find :

(i) H.C.F (ii) L.C.M

(iii) Decimal Expansion (iv) Probability

1. The product of the H.C.F and L.C.M of the smallest prime number and smallest composite number is :

(i) 2 (ii) 4

(iii) 6 (iv) 8

1. Which of the following numbers has terminating decimal expansion :

(i)  (ii) 

(iii)  (iv) 

1. For the decimal number 0.6 the rational number is :

(i)  (ii) 

(iii)  (iv) 

**SECTION [B]**

1. Is  a composite number? Justify your answer.
2. In the adjoining factor tree, find m and n :

m

2

2

n

2

3

3

1. Using the Euclid division algorithm find the H.C.F of 135 and 225.
2. Can the number 6n end with the digit 5? Give reason.
3. Show that every positive even integer is of the form 2q and every positive odd integer is of the form 2q + 1 where q is some integer.
4. Given that H.C.F (336 , 54) = 6, find L.C.M(336 , 54)
5. The LCM and HCF of two numbers are 90 and 9 respectively. If one of the number is 18, find the other number.
6. Find the L.C.M of 510 and 92 by prime factorisation method.

**SECTION [C]**

1. Show that every positive odd integer is of the form 4q + 1 or 4q + 3. Where q is some integer.
2. Prove that  is irrational.
3. Prove that  is irrational.
4. Show that  is irrational.
5. Prove that  is an irrational number.
6. Find the H.C.F and L.C.M of 816 and 170 by fundamental theorem of Arithmetic
7. Show that 9n can not end with 2 for any integer n.
8. Use Euclid's Division algorithm to show that the square of any positive integer is either of the form 3m or 3m + 1 for some integer m.
9. Using the Euclid division algorithm find the H.C.F of 56, 96 and 404.
10. Show that one and only one out of n , n + 2 and n + 4 is divisible by 3.

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**SECTION [D]**

1. Use Euclid's Division algorithm to show that the cube of any positive integer is either of the form 9q , 9q + 1 or 9q + 8
2. A sweet-seller has 580 kajubarfis and 260 badambarfis. He wants to stack them in such a way that each stack has the same number, and they take up the least area on the tray. Find the number of barfis that can be placed in each stack for this purpose.
3. There is a circular path around a park. Rekha takes 20 minutes to walk one round of park, while Monish takes 12 minutes for the same. If they both start from the same point and at the same time, and go in the same direction, after how manyminutes will they meet again at the starting point?
4. Express  as a rational number of the form .
5. Show that every positive odd integer is of the form 6q + 1 or 6q + 3 or 6q + 5 . Where q is some integer.
6. An army contingent of 580 members is to march behind an army band of 50 members in a parade. The two groups are to march in the same number of columns. Find the maximum number of columns in which they can march.

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**Saxena Institute**

