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**SAMPLE PAPER 04 : PERIODIC TEST – 1 (2018 – 19)**  
**CLASS – X**  
**MATHEMATICS**

**T.T. 1:30**

**M.M. 40**

**General Instructions:**

1. All questions are compulsory.
2. Question paper is divided into four sections: Section A contains 4 questions each carry 1 mark, Section B contains 4 questions each carry 2 marks, Section C contains 4 questions each carry 3 marks and Section D contains 4 questions each carry 4 marks.

**SECTION – A(1 marks each)**

1. If product of two numbers is 3691 and their LCM is 3691, find their HCF.
2. Write the polynomial, the product and sum of whose zeroes are  $-\frac{9}{2}$  and  $-\frac{3}{2}$  respectively.
3. For what value of k, the system of equations  $kx - 3y + 6 = 0$ ,  $4x - 6y + 15 = 0$  represents parallel lines?
4. For what value of p, are  $2p + 1$ , 13,  $5p - 3$  three consecutive terms of an AP?

**SECTION – B(2 marks each)**

5. Using Euclid's division algorithm, find whether the pair of numbers 847, 2160 are coprimes or not.
6. If the sum of the zeroes of the quadratic polynomial  $ky^2 + 2y - 3k$  is equal to twice their product, find the value of k.
7. Find the values of k such that the quadratic equation  $x^2 - 2kx + (7k - 12) = 0$  has equal roots.
8. Find the sum of the first 25 terms of an AP whose nth term is given by  $a_n = 7 - 3n$ .

**SECTION – C(3 marks each)**

9. Prove that  $\sqrt{3}$  is an irrational.
10. A number consists of two digits. Where the number is divided by the sum of its digits, the quotient is 7. If 27 is subtracted from the number, the digits interchange their places, find the number.
11. Solve the following equation for x:  $\frac{1}{x+1} + \frac{2}{x+2} = \frac{5}{x+4}$ ;  $x \neq -1, -2, -4$
12. Find the number of three-digit natural numbers which are divisible by 11.

**SECTION – D(4 marks each)**

13. In a seminar the number of participants in Mathematics, Physics and Biology are 336, 240 and 96. Find the minimum number of rooms required if in each room same number of participants is to be seated and all of them being in the same subject.
14. If the polynomial  $x^4 - 6x^3 + 16x^2 - 25x + 10$  is divided by  $(x^2 - 2x + k)$  the remainder comes out to be  $x + a$ , find  $k$  and  $a$ .
15. Solve the following system of linear equations graphically:  
 $3x + y - 12 = 0$ ;       $x - 3y + 6 = 0$ .  
Shade the region bounded by the lines and x-axis. Also, find the area of shaded region.
16. The sum of the areas of two squares is  $640 \text{ m}^2$ . If the difference in their perimeters be 64 m find the sides of the two squares.
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