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**SAMPLE PAPER 04 : PERIODIC TEST – 1 (2019 – 20)**  
**CLASS – IX**  
**MATHEMATICS**

**T.T. 1:30**

**M.M. 40**

**General Instructions:**

- All questions are compulsory.
- Question paper is divided into four sections: Section A contains 10 Objective type questions each carry 1 mark, Section B contains 3 questions each carry 2 marks, Section C contains 4 questions each carry 3 marks and Section D contains 3 questions each carry 4 marks.

**SECTION – A (1 mark each)**

- Simplify:  $\sqrt{72} + \sqrt{800} - \sqrt{18}$   
(a)  $2\sqrt{2}$                       (b)  $3\sqrt{2}$                       (c)  $23\sqrt{2}$                       (d) 0
- Simplify:  $16^{-\frac{1}{4}} \times \sqrt[4]{16}$   
(a) 1                              (b) 0                              (c) 8                              (d) none of these
- Write the coefficients of  $x^3$  in  $5x^3 - 6x^2 + 7x - 9$   
(a) -6                              (b) 5                              (c) 7                              (d) none of these
- Write the coefficient of  $y$  in the expansion of  $(5 - y)^2$ .  
(a) 10                              (b) -10                              (c) -1                              (d) none of these
- Find the value of the polynomial  $p(y) = y^2 - 5y + 6$  at  $y = -2$   
(a) 10                              (b) 20                              (c) 8                              (d) none of these
- Find the perpendicular distance of the point  $P(5, 7)$  from the  $y$ -axis.  
(a) 12                              (b) 5                              (c) 7                              (d) none of these
- Write the coordinate of a point whose abscissa is  $-7$  and ordinate is  $2$ .  
(a)  $(-7, 2)$                       (b)  $(7, 2)$                       (c)  $(7, -2)$                       (d) none of these
- Find  $a$ , if linear equation  $3x - ay = 6$  has one solution as  $(4, 3)$ .  
(a) 3                              (b) 6                              (c) 2                              (d) none of these
- How many solution(s) of the linear equation  $2x - 5y = 7$  has?  
(a) one solution                      (b) two solutions  
(c) infinitely many solutions                      (d) none of these
- At what point the graph of the linear equation  $2x - y = 7$  cuts the  $y$ -axis.  
(a)  $(7, 0)$                       (b)  $(0, 7)$                       (c)  $(0, -7)$                       (d)  $(-7, 0)$

**SECTION – B (2 marks each)**

- Find two solutions for the equation  $4x + 3y = 24$ . How many solutions of this equation are possible?

12. Simplify  $\frac{6-4\sqrt{3}}{6+4\sqrt{3}}$  by rationalising the denominator.

13. In which quadrant, will the point lie, if
- (i) the ordinate is 2 and the abscissa is  $-3$
  - (ii) the abscissa is  $-4$  and the ordinate is  $-2$
  - (iii) the ordinate is  $-3$  and the abscissa is 4
  - (iv) the ordinate is 3 and the abscissa is  $-2$

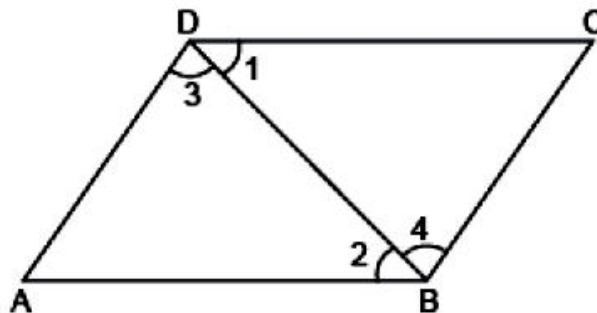
**SECTION – C(3 marks each)**

14. If  $p = \frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}+\sqrt{2}}$  and  $q = \frac{\sqrt{3}+\sqrt{2}}{\sqrt{3}-\sqrt{2}}$ , then find  $p^2 + q^2$ .

15. Express  $1.2353535\dots$  in the form  $\frac{p}{q}$ , where  $p$  and  $q$  are integers and  $q \neq 0$ .

16. If  $2x + 3y = 12$  and  $xy = 6$ , find the value of  $8x^3 + 27y^3$ .

17. In the given figure, it is given that  $\angle 1 = \angle 4$  and  $\angle 3 = \angle 2$ . By which Euclid's axiom, it can be shown that if  $\angle 2 = \angle 4$ , then  $\angle 1 = \angle 3$ .



**SECTION – D (4 marks each)**

18. Find the value of  $a$  and  $b$  so that polynomial  $p(x) = x^3 - 3x^2 - ax + b$  has  $(x + 1)$  and  $(x - 5)$  as factors.

19. (i) Plot the points  $A(-5, -2)$ ,  $B(1, -2)$ ,  $C(6, 4)$  and  $D(0, 4)$ .  
(ii) Join the points to get  $AB$ ,  $BC$ ,  $CD$  and  $DA$ . Name the figure so obtained.  
(iii) Find the coordinates of a point where the line  $AB$  intersects the  $y$ -axis.

20. In a class, number of girls is  $x$  and that of boys is  $y$ . Also, the number of girls is 10 more than the number of boys. Write the given data in the form of a linear equation in two variables. Also, represent it graphically. Find graphically the number of girls, if the number of boys is 20.