

**REVISION TEST 03**  
**(NUMBER SYSTEM, POLYNOMIALS & EUCLID'S GEOMETRY)**  
**CLASS: IX : MATHEMATICS**

M.M. 40 Marks

T.T. 1 hr 15 min

**SECTION – A( 1 mark)**

1. Rationalize the denominator :  $\frac{1}{7+3\sqrt{2}}$
2. Find the remainder when  $x^4 + x^3 - 2x^2 + x + 1$  is divided by  $x - 1$ .
3. Find a zero of the polynomial  $p(x) = 3x - 2$ .
4. State Playfair's theorem.

**SECTION – B ( 2 marks)**

5. Rationalize the denominator of  $\frac{3+5\sqrt{2}}{3-5\sqrt{2}}$ .
6. Find five rational numbers between  $\frac{-4}{7}$  and  $\frac{3}{7}$
7. If k is the number of mangoes distributed to poor children so that  $x - 6$  is a factor of  $4x^3 + 3x^2 - 4x - k$ . Find k. Which value depicted from this??
8. Factorize:  $12x^2 - 7x + 1$

**SECTION – C( 3 marks)**

9. Show that  $0.2353535\dots$  can be expressed in the form of  $\frac{p}{q}$ , where p and q are integers and  $q \neq 0$ .
10. Factorise :  $x^3 - 23x^2 + 142x - 120$
11. If A, B and C are three points on a line, and B lies between A and C (see below fig.), then prove that  $AB + BC = AC$ .



12. Find the value of each of the following polynomials at the indicated value of variables:
  - (i)  $p(t) = 4t^4 + 5t^3 - t^2 + 6$  at  $t = a$ .
  - (ii)  $q(y) = 3y^3 - 4y + 5$  at  $y = 2$ .

**SECTION – D ( 4 marks)**

**13.** Simplify the following expressions:

$$(i) 2^{\frac{2}{3}} \cdot 2^{\frac{1}{3}} \quad (ii) \left(\frac{1}{3^5}\right)^4 \quad (iii) \frac{7^{\frac{1}{5}}}{7^{\frac{1}{3}}} \quad (iv) 13^{\frac{1}{5}} \cdot 17^{\frac{1}{5}}$$

**14.** A School has decided to give 2 prizes for punctuality, 3 prizes for honesty and 5 prizes for obedience. Represent the real number  $\sqrt{2}, \sqrt{3}, \sqrt{5}$  on a single number line. Which value you prefer to be rewarded most and why?

**15.** How would you rewrite Euclid's fifth postulate so that it would be easier to understand? Does Euclid's fifth postulate imply the existence of parallel lines? Explain.

**16.** Factorise :

$$(i) a^3 - 8b^3 - 64c^3 - 24abc \quad (ii) 2\sqrt{2}a^3 + 8b^3 - 27c^3 + 18\sqrt{2}abc.$$

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