

**TEST NO. 6**

**Syllabus: (Ch# 5 to 9, 14 to 17)(2<sup>nd</sup> Half book)**

**MATHEMATICS (SCIENCE) -2020- (9<sup>TH</sup> CLASS)**  
**TIME ALLOWED: 15 Min**

**PAPER: II (OBJECTIVE TYPE)**  
**Marks: 15**

**Note:** Four possible answers A, B, C and D to each question are given. The choice which you think is correct fill that circle in front of that question with marker or Pen ink in the answer-book. Cutting or filling two or more circle will result in zero mark in that question.

- 1.1. What will be added to complete the square of  $9a^2 - 12 ab$ ?  
(A)  $4b^2$  (B)  $16 a^2$  (C)  $-16b^2$  (D)  $-4b^2$
2. H.C.C of  $(x-2)$  and  $(x^2 + x-6)$  is.  
(A)  $x^2 + x-6$  (B)  $x + 3$  (C)  $x-2$  (D)  $x+2$
3. H.C.F of  $(x^2 -5x +6)$  and  $(x^2 -x-6)$  is.  
(A)  $x+2$  (B)  $x-3$  (C)  $x^2 -4$  (D)  $x-2$
4. L.C.M of  $a^2 + b^2$  and  $a^4 - b^4$  is.  
(A)  $a^2 + b^2$  (B)  $a^2 - b^2$  (C)  $a-b$  (D)  $a^4 - b^4$
5. What should be added to complete the square of  $x^4 + 64$ .  
(A)  $8x^2$  (B)  $-8x^2$  (C)  $16x^2$  (D)  $4x^2$
6. The S.S. of  $|x - 4| = -4$  is.  
(A)  $-8$  (B)  $-16$  (C)  $8$  (D) Blank
7. Which of the following is the solution of the inequality?  $3 - 4x \leq 11$ .  
(A)  $-8$  (B)  $-2$  (C)  $-14/4$  (D) None
8. If  $y = 2x + 1$  and for  $x = 2$  then  $y$  is equal to.  
(A)  $2$  (B)  $3$  (C)  $4$  (D)  $5$
9. A triangle having two sides congruent is called.  
(A) Scalene (B) Right angled (C) Isosceles (D) Equilateral
10. Distance between points  $(0,0)$  and  $(1,1)$  is.  
(A)  $0$  (B)  $\sqrt{2}$  (C)  $1$  (D)  $2$
11. Mid point of the points  $(2,2)$  and  $(0,0)$  is.  
(A)  $(1,1)$  (B)  $(1,0)$  (C)  $(0,1)$  (D)  $(-1,-1)$
12. Mid point of the points  $(2,-2)$  and  $(-2,2)$  is.  
(A)  $(2,2)$  (B)  $(-2,2)$  (C)  $(0,0)$  (D)  $(1,1)$
13. A triangle having all sides equal is called.  
(A) Isosceles (B) Equilateral (C) a and b (D) None of these
14. Factors of  $3x^2 - x - 2$  are.....  
(A)  $(x-1), (3x - 2)$  (B)  $(x+1)(3x+2)$  (C)  $(x-1), (3x-2)$  (D)  $(x-1), (3x+2)$
15. H.C.F of  $p^3q = pq^3$  and  $p^5q^3 - p^2q^5$  is.  
(A)  $pq (p^3 - q^3)$  (B)  $p^2q^2 (p-q)$  (C)  $pq (p-q)$  (D)  $pq (p^2 - q^2)$

**A B C D**

**A B C D**

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**A B C D**

1	(A) (B) (C) (D)	4	(A) (B) (C) (D)	7	(A) (B) (C) (D)	10	(A) (B) (C) (D)	13	(A) (B) (C) (D)
2	(A) (B) (C) (D)	5	(A) (B) (C) (D)	8	(A) (B) (C) (D)	11	(A) (B) (C) (D)	14	(A) (B) (C) (D)
3	(A) (B) (C) (D)	6	(A) (B) (C) (D)	9	(A) (B) (C) (D)	12	(A) (B) (C) (D)	15	(A) (B) (C) (D)

نوٹ: معروضی سوال نامے کو توجہ سے پڑھیں اور ہر MCQ کی درست آپشن A, B, C, D کو بچھن کی سی ایسی یا مار کر سے اس طرح پتہ کریں کہ سی ایسی دائرے سے باہر نہ نکلے۔ ایک سے زیادہ دائروں کو پتہ کرنے یا کٹ کر پتہ کرنے کی صورت میں مذکورہ جواب غلط تصور ہوگا۔

**Syllabus: (Ch# 5 to 9, 14 to 17)(2<sup>nd</sup> Half book)**

**MATHEMATICS (SCIENCE)**

**2020- (9<sup>TH</sup> CLASS)**

**Paper: (Essay Type)**

**Time Allowed: 2:10 hours**

**Maximum Marks: 60**

**(PART – I)**

**2. Write short answer to any SIX (6) questions:**

**12**

- (i) Factorize:  $(x + y)^2 - 14(x + y)z + 49z^2$
- (ii) Factorize:  $x^3 + 3xy^2 - 2x^2y - 6y^3$
- (iii) Factorize:  $81x^4 + 36x^2y^2 + 16y^4$
- (iv) Factorize:  $(x + 4)(x - 5)(x + 6)(x - 7) - 504$
- (v) Factorize:  $x^3 - 18x^2 + 108x - 216$
- (vi) Factorize:  $\left(5x - \frac{1}{x}\right)^2 + 4\left(5x - \frac{1}{x}\right) + 4$
- (vii) If  $(x + 2)$  is a factor of  $3x^2 - 4kx - 4k^2$  then find the values of 'k'.
- (viii) What is factor theorem?
- (ix) The sum of two numbers is 120 and their H.C.F is 12. Find the numbers.

**3. Write short answer to any SIX (6) questions:**

**12**

- (i) Write procedure for solving linear equations in one variable.
- (ii) Define Radical equation.
- (iii) Define Absolute value.
- (iv) Solve:  $-\frac{2}{3x+6} = \frac{1}{6} - \frac{1}{2x+4}$
- (v) Solve:  $-\frac{1}{2}x - \frac{2}{3} \leq x + \frac{1}{3}$ , where  $x \in R$
- (vi) In a quadrilateral ABCD, the diagonals  $\overline{AC}$  and  $\overline{BD}$  are perpendicular to each other. Prove that  $m\overline{AB}^2 + m\overline{CD}^2 = m\overline{AD}^2 + m\overline{BC}^2$
- (vii) A ladder 17m long rests against vertical wall. The foot of the ladder is 8m away from the base of the wall. How high up the wall will the ladder reach?

(viii) Solve:  $x - 2(5 - 2x) \geq 6x - 3\frac{1}{2}$

(ix) Solve:  $-3 \leq \frac{x-4}{-5} < 4$

**4. Write short answer to any SIX (6) questions:**

**12**

- (i) Find H.C.F by division method.  $x^3 + 3x^2 - 16x + 12$ ,  $x^3 + x^2 - 10x + 8$
- (ii) For what value of 'm' is the polynomial  $p(x) = 4x^3 - 7x^2 + 6x - 3m$  exactly divisible by  $x + 2$
- (iii) Use distance formula to verify that the points  $A(0, 7)$ ,  $B(3, -5)$ ,  $C(-2, 15)$  are Collinear
- (iv) Solve:  $-\frac{|x+5|}{|2-x|} = 6$
- (v) Construct a  $\triangle ABC$  in which  $m\overline{AB} = 2.5\text{cm}$ ,  $m\angle A = 30^\circ$ ,  $m\angle B = 105^\circ$
- (vi) Construct a  $\triangle ABC$  in which  $m\overline{BC} = 5\text{cm}$ ,  $m\overline{AC} = 3.5\text{cm}$ ,  $m\angle B = 60^\circ$
- (vii) Define 'Square'.
- (viii) Define Parallelogram.

(ix) Solve and check: -  $\sqrt[3]{2x-4} - 2 = 0$

(PART - II)

Note: Attempt any THREE questions, but Question 9 is compulsory.

5. (a) Construct  $\Delta PQR$  and draw their altitudes:  $m\overline{PQ} = 6\text{cm}$ ,  $m\overline{QR} = 4.5\text{cm}$ ,  $m\overline{PR} = 5.5\text{cm}$  (4)
- (b) Construct  $\Delta XYZ$  and draw their medians:  $m\overline{YZ} = 4.1\text{cm}$ ,  $m\angle Y = 60^\circ$ ,  $m\angle X = 75^\circ$  (4)
6. (a) Use division method to find square root.  $\frac{x^2}{y^2} - 10\frac{x}{y} + 27 - 10\frac{y}{x} + \frac{y^2}{x^2}$ , ( $x \neq 0, y \neq 0$ ) (4)
- (b) The expression  $lx^3 + mx^2 - 4$  leaves remainder of -3 and 12 when divided by  $(x - 1)$  and  $(x + 2)$  respectively. Calculate values of l and m. (4)
7. (a) Show that the points  $A(-6, -5)$ ,  $B(5, -5)$ ,  $C(5, -8)$  and  $D(-6, -8)$  are vertices of rectangle. Find the length of its diagonals. Are they equal? (4)
- (b) Construct a square equal in area to a rectangle whose adjacent sides are 4.5cm and 2.2cm respectively. Measure the sides of the square and find its area and compare with the area of the rectangle. And verify by measurement that the perimeter of the square is less than that of the rectangle. (4)
8. (a) Factorize cubic polynomial by factor theorem  $x^3 - 2x^2 - 5x + 6$ . (4)
- (b) Simplify  $\frac{x^4 - 8x}{2x^2 + 5x - 3} \times \frac{2x - 1}{x^2 + 2x + 4} \times \frac{x + 3}{x^2 - 2x}$ . (4)
9. Prove that Triangles on the same base and of the same (i.e. equal) altitudes are equal. (8)



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