

## Physics Holidays Homework Class IX

1. In the school fair, there was a game in which one need to find the heaviest ball without holding them in hand. Three balls were given and few disposable glasses were kept. Tarun saw his friend struggling to win the game but he was unable to find the heaviest ball. Tarun helped him by dipping the three balls one by one in the glasses full of water upto the brim and finally they won the game.
  - (a) Why did Tarun told his friend to dip the balls one by one in completely filled glass of water?
  - (b) Name and State the principle used here.
2. What is free fall? A stone is released from the top of a tower of 19.6 m. Calculate its velocity just before touching the ground.
3.
  - (i) Define weight. What is its unit?
  - (ii) What is the unit of acceleration due to gravity?
  - (iii) Whether weight is scalar quantity or vector quantity?
  - (iv) Differentiate between mass and weight.
4. We know  $\text{Pressure} = \text{thrust} / \text{area}$ .
  - (i) What is the SI unit of thrust?
  - (ii) We have two different areas A and B, where  $A > B$ . Then what is the relation between pressure on A ( $P_A$ ) and pressure on B ( $P_B$ )?
  - (iii) What is the unit of pressure?
  - (iv) It is easier to walk on soft sand if we have flat shoes rather than shoes with sharp heel. Explain
5. A ball thrown up vertically returns to the thrower after 6 s. Find
  - (a) The velocity with which it was thrown up,
  - (b) The maximum height it reaches, and
  - (c) Its position after 4s.
6. The gravitational force between two objects is F. If masses of both the objects are halved without altering the distance between them, then what would be the new gravitational force ?
7. What is the difference between g and G ?
8. State the condition of floatation.
9. Draw a poster in your notebook to show different types of energy
10. Draw a diagram to show the cases of positive work, negative work and zero work

HOLIDAY HOMEWORK \*ART & CRAFT\*

1. One Landscape with water / acrylic colour on ivory sheet.

(Size minimum A4)

2. One creative Painting with acrylic colour on ivory sheet.

( Size minimum A4)

3. One craft work with waste material like old newspaper, clothes, plastic bottles and bags, waste wood and any other types of waste materials.

4. One painting on warli art with acrylic colour on ivory sheet. (Size minimum A4)

\*\*\*BEST OF LUCK AND ENJOY THE HOLIDAY \*\*\*

## COMPUTER HOME WORK CLASS 9<sup>th</sup>

Read the following chapters, solve the objective types and fill in the blanks questions that

Follow as exercise in chapters and remembering these chapters

1. Communication skills
2. Stress managements
3. Introduction to AI

## कक्षा - IX हृदी

1. नमिन् उपसर्गों के दो दो शब्द बनाइए  
प्रति, परि, सम्, अधि, बद्, अनु, बे, प्र, अव।
2. नमिन् प्रत्ययों से दो दो शब्द बनाइए  
आवट, आहट, ता, अक्कड़, त्व, इक, आकू ।
3. कबीर के दस दोहे लिखिए ।
4. हृदी के दो कवियों की जीवनी लिखिए तथा उनके चरित्र भी बनाइए।
5. समास की परभाषा लिखिए तथा उदाहरण सहित भेद भी लिखिए।
6. हॉस्टल में रह रहे अपने कनिष्ठ भ्राता महेश को कुसंगत से बचने हेतु  
सम्यक मार्गदर्शन देने हेतु पत्र लिखिए ।
7. नमिन् में से किसी एक पर 100 शब्दों में अनुच्छेद लिखिए।  
बढ़ती बेरोजगारी, भविष्य का भारत, राजभाषा हृदी जन जन की भाषा।
8. सत्संगत पर एक लघुकथा लिखिए।

KENDRIYA VIDYALAYA JALALABAD

Autumn Break Home Work

(Subject - BIOLOGY)

Class –9th

1) Draw and practice the following diagrams:

A) Plant and animal cell B) Nucleus C) chloroplast D) Mitochondria E) neuron F) Type of muscle fibre: i) Striated ii) smooth iii) Cardiac

2) Write difference between:

I) Prokaryotic cell and eukaryotic cell

II) Cell wall and cell membrane

III) Nucleus and nucleolus

IV) Plant cell and animal cell

V) Smooth and rough endoplasmic reticulum

VI) Chloroplast and mitochondria

VII) Parenchyma, collenchyma and sclerenchyma.

VIII) Striated, smooth and Cardiac muscle fibre

3) What is blood? Why is it known as connective tissue? Write the function of blood.

# NUMBER SYSTEM

## IMPORTANT CONCEPTS:

- The numbers of the form  $p/q$ , where 'p' and 'q' are integers and  $q \neq 0$ , are called rational numbers.
- A rational number  $p/q$  is said to be in simplest form, if 'p' and 'q' are integers having no common factor other than 1 and  $q \neq 0$ .
- Every rational number can be expressed as decimal. If the decimal expression of  $p/q$  terminates, then it is called a terminating decimal.
- A decimal in which a digit or a group of digits repeats periodically, is called a recurring decimal.
- The decimal expression of a rational number is either terminating or non-terminating recurring.
- The decimal expression of an irrational number is 'non-terminating and non-recurring'.
- All rational and all irrational numbers form the collection of all real numbers.
- The process of converting the irrational denominator of a number by multiplying its numerator and denominator by a suitable number, is called rationalization.

## SOME ILLUSTRATIONS/EXAMPLES:

### MCQs

1.  $3\sqrt{6} + 4\sqrt{6}$  is equal to:  
a)  $6\sqrt{6}$       b)  $7\sqrt{6}$       c)  $4\sqrt{12}$       d)  $7\sqrt{12}$

**Answer: b**

$$3\sqrt{6} + 4\sqrt{6} = (3 + 4)\sqrt{6} = 7\sqrt{6}$$

2.  $\sqrt{6} \times \sqrt{27}$  is equal to:  
a)  $9\sqrt{2}$       b)  $3\sqrt{3}$       c)  $2\sqrt{2}$       d)  $9\sqrt{3}$

**Answer: a**

$$\begin{aligned}\sqrt{6} \times \sqrt{27} &= \sqrt{2 \times 3 \times 3 \times 3 \times 3} \\ &= (3 \times 3)\sqrt{2} \\ &= 9\sqrt{2}\end{aligned}$$

3. Which of the following is equal to  $x^3$ ?  
a)  $x^6 - x^3$       b)  $x^6 \cdot x^3$       c)  $x^6/x^3$       d)  $(x^6)^3$

**Answer: c**       $x^6/x^3 = x^{6-3} = x^3$

4. Which of the following is an irrational number?  
a) 0.14      b) 0.1416      c)  $0.\overline{1416}$  d) 0.4014001400014...

**Answer: d**

0.4014001400014... is an irrational number as it is non-terminating and non-repeating.

5.  $2\sqrt{3} + \sqrt{3} =$   
a) 6      b)  $2\sqrt{6}$       c)  $3\sqrt{3}$       d)  $4\sqrt{6}$

**Answer: c**       $2\sqrt{3} + \sqrt{3} = (2+1)\sqrt{3} = 3\sqrt{3}$ .

### SHORT ANSWER TYPE QUESTIONS

1. Add  $2\sqrt{2} + 5\sqrt{3}$  and  $\sqrt{2} - 3\sqrt{3}$ .

**Solution:**

$$\begin{aligned}(2\sqrt{2} + 5\sqrt{3}) + (\sqrt{2} - 3\sqrt{3}) \\ &= 2\sqrt{2} + 5\sqrt{3} + \sqrt{2} - 3\sqrt{3} \\ &= (2 + 1)\sqrt{2} + (5 - 3)\sqrt{3} \\ &= 3\sqrt{2} + 2\sqrt{3}\end{aligned}$$

2. Simplify:  $(\sqrt{3} + \sqrt{7})(\sqrt{3} - \sqrt{7})$ .

**Solution:**

$$\begin{aligned}(\sqrt{3} + \sqrt{7})(\sqrt{3} - \sqrt{7}) \\ \text{Using the identity } (a + b)(a - b) = a^2 - b^2, \\ (\sqrt{3} + \sqrt{7})(\sqrt{3} - \sqrt{7}) = (\sqrt{3})^2 - (\sqrt{7})^2 \\ = 3 - 7\end{aligned}$$

$= -4$

3. Rationalize the denominator of  $1/[7+3\sqrt{3}]$ .

**Solution:**

$= 1/(7 + 3\sqrt{3})$

By rationalizing the denominator,

$= [1/(7 + 3\sqrt{3})] [(7 - 3\sqrt{3})/(7 - 3\sqrt{3})]$

$= (7 - 3\sqrt{3})/[(7)^2 - (3\sqrt{3})^2]$

$= (7 - 3\sqrt{3})/(49 - 27)$

$= (7 - 3\sqrt{3})/22$

## PRACTICE QUESTIONS

### MCQs

- The decimal expansion of an irrational number may be:
  - Terminating
  - Recurring
  - Either terminating or non- recurring
  - non-terminating and non-recurring
- What would be the denominator after rationalizing  $7/(5\sqrt{3} - 5\sqrt{2})$ ?
  - 19
  - 20
  - 25
  - None of these
- In between two rational number there is/are:
  - Exactly one rational number
  - Infinitely many rational number
  - Many irrational numbers
  - Only irrational numbers

The value of  $\sqrt[4]{(16)^{-2}}$  is:

- $\frac{1}{4}$
  - $\frac{1}{2}$
  - 4
  - $\frac{1}{16}$
- $\sqrt{12} \times \sqrt{15}$  is equal to:
    - $5\sqrt{6}$
    - $6\sqrt{5}$
    - $10\sqrt{5}$
    - $\sqrt{25}$
  - Which of the following is irrational?
    - 0.14
    - 0.1416
    - $0.\overline{1416}$
    - 0.4014001400014...
  - Which of the following is irrational?
    - $\sqrt{\frac{4}{9}}$
    - $\frac{\sqrt{12}}{\sqrt{3}}$
    - $\sqrt{5}$
    - $\sqrt{81}$
  - The product of a rational and an irrational numbers is:
    - Always an integer
    - Always a rational number
    - Always an irrational number
    - Sometimes rational and sometimes irrational
  - $\sqrt{6} \times \sqrt{27}$  is equal to:
    - $9\sqrt{2}$
    - $3\sqrt{3}$
    - $2\sqrt{2}$
    - $9\sqrt{3}$

### ASSERTION- REASONING QUESTION

- Assertion:**  $\sqrt{5}$  is an irrational number.

**Reason:** A number is called irrational, if it cannot be written in the form  $p/q$ , where  $p$  and  $q$  are integers and  $q \neq 0$

- Both Assertion and Reason are correct and Reason is the correct explanation for Assertion
- Both Assertion and Reason are correct and Reason is not the correct explanation for Assertion.
- assertion is true but the reason is false.
- both assertion and reason are false.

### SHORT ANSWER TYPE QUESTIONS

- Simplify:  $(\sqrt{5} + \sqrt{2})^2$
- Find the value of  $\sqrt{(3)^{-2}}$ .
- Identify a rational number among the following numbers :  
 $2 + \sqrt{2}$ ,  $2\sqrt{2}$ , 0 and  $\pi$
- Evaluate :  $(\sqrt{5} + \sqrt{2})^2 + (\sqrt{8} - \sqrt{5})^2$
- If  $x = 15\sqrt{-2}$ , find the value of  $x^3 - 3^2 - 5x + 3$
- Find a rational number between 1 and 2.
- Write a rational number equivalent to  $5/9$  such that its numerator is 25.

8. Find two rational numbers between 0.1 and 0.3
9. Simplify:  $(4+\sqrt{3})(4-\sqrt{3})$
10. Simplify:  $(\sqrt{3}+\sqrt{2})^2$

**ANSWERS:**

**MCQs**

Q1. d	Q2.d,	Q3b,	Q4.a,	Q5. b,	Q6. a,	Q7. c,
Q8. C,	Q9. a,	Q10. A				

**SHORT ANSWER QUESTIONS:**

Q1: $7 + 2\sqrt{10}$	Q2: $1/3$	Q3: 0 is a rational number	Q4: $20 - 2\sqrt{10}$ ,	Q5. 4,
Q6. $3/2$ ,	Q7. $25/45$ ,	Q8. $5/30$ and $7/30$ ,	Q9. 13,	
Q10. $5+2\sqrt{6}$				



### TEST-1 (MM.20)

1. Find five rational numbers between 1 and 2.
2. Find five rational numbers between  $\frac{3}{5}$  and  $\frac{4}{5}$ .
3. Locate  $\sqrt{3}$  on the number line.
4. Find the decimal expansions of  $\frac{10}{3}$ ,  $\frac{7}{8}$  and  $\frac{1}{7}$ .
5. Find three different irrational numbers between the rational numbers  $\frac{5}{7}$  and  $\frac{9}{11}$ .
6. Visualize 3.765 on the number line, using successive magnification.
7. Represent  $\sqrt{(9.3)}$  on the number line.
8. Simplify:  
(i)  $7^{2/3} \cdot 7^{1/5}$   
(ii)  $10^{1/2}/10^{1/4}$
9. Express  $3\frac{1}{8}$  in the form of decimal.
10. Rationalize the denominator of  $\frac{1}{\sqrt{3}-\sqrt{2}}$

### TEST-2 (MM.30)

1. Express in the form  $p/q$   
Express 0.4323232... in the form  $p/q$ , where  $p$  and  $q$  are integers and  $q \neq 0$ .
2. **Find 6 rational numbers between  $\frac{6}{5}$  and  $\frac{7}{5}$ .**
3. Rationalize the denominator:  
a)  $\frac{1}{9+\sqrt{5}+\sqrt{6}}$       b)  $\frac{2}{\sqrt{3}-1}$       c)  $\frac{7}{\sqrt{12}-\sqrt{5}}$
4. Express as Fractions  
Express 1.363636... in the form  $p/q$ , where  $p$  and  $q$  are integers and  $q \neq 0$ .
5. Simplify the following:  
a)  $(8+\sqrt{5})(8-\sqrt{5})$   
b)  $(10+\sqrt{3})(6+\sqrt{2})$   
c)  $(\sqrt{3}+\sqrt{11})^2 + (\sqrt{3}-\sqrt{11})^2$
6. What can the maximum number of digits be in the recurring block of digits in the decimal expansion of  $\frac{1}{17}$ ?
7. Classify the following numbers as rational or irrational:  
a)  $2-\sqrt{5}$   
b)  $(3+\sqrt{23})-\sqrt{23}$   
c)  $1/(\sqrt{2})$
8. Simply by rationalizing denominator:  $\frac{7+3\sqrt{5}}{7-3\sqrt{5}}$
9. Simplify:  
 $\left\{ \left[ 625^{\frac{-1}{2}} \right]^{\frac{-1}{4}} \right\}^2$
10. Express  $2.41\overline{78}$  in the form  $a/b$ .

# POLYNOMIALS

## (I) Main Concepts and Results:

Meaning of a Polynomial Degree of a polynomial

Coefficients

Monomials, Binomials etc.

Constant, Linear, Quadratic Polynomials etc.

Value of a polynomial for a given value of the variable Zeroes of a polynomial

Remainder theorem Factor theorem

Factorization of a quadratic polynomial by splitting the middle term Factorization of algebraic expressions by using the Factor theorem Algebraic identities –

$$(x + y)^2 = x^2 + 2xy + y^2$$

$$(x - y)^2 = x^2 - 2xy + y^2$$

$$x^2 - y^2 = (x + y)(x - y)$$

$$(x + a)(x + b) = x^2 + (a + b)x + ab$$

$$(x + y + z)^2 = x^2 + y^2 + z^2 + 2xy + 2yz + 2zx$$

$$(x + y)^3 = x^3 + 3x^2y + 3xy^2 + y^3 = x^3 + y^3 + 3xy(x + y)$$

$$(x - y)^3 = x^3 - 3x^2y + 3xy^2 - y^3 = x^3 - y^3 - 3xy(x - y)$$

$$x^3 + y^3 = (x + y)(x^2 - xy + y^2)$$

$$x^3 - y^3 = (x - y)(x^2 + xy + y^2)$$

$$x^3 + y^3 + z^3 - 3xyz = (x + y + z)(x^2 + y^2 + z^2 - xy - yz - zx)$$

EXAMPLES:

1) MCQ'S-

(i) Which one of the following is a polynomial?

(A)  $\frac{x^2}{2} = \frac{2}{x^2}$  (B)  $\sqrt{2x} - 1$  (C)  $x^2 + \frac{3x^{\frac{3}{2}}}{\sqrt{x}}$  (D)  $\frac{x-1}{x+1}$

Answer: (C)

(ii) On factorizing  $x^2 + 8x + 15$ , we get :

(A)  $(x + 3)(x - 5)$  (B)  $(x - 3)(x + 5)$  (C)  $(x + 3)(x + 5)$  (D)  $(x - 3)(x - 5)$

Answer: (C)

(iii) On dividing  $x^2 - 2x - 15$  by  $(x - 5)$ , the quotient is  $(x + 3)$  and the following statements is true?

remainder is 0. Which of

- (A)  $x^2 - 2x - 15$  is a multiple of  $(x - 5)$   
 (B)  $x^2 - 2x - 15$  is a factor of  $(x - 5)$   
 (C)  $(x + 3)$  is a factor of  $(x - 5)$   
 (D)  $(x + 3)$  is a multiple of  $(x - 5)$

Answer: (A)

(iv) The value of the polynomial  $2x^2 + 3x - 4$  at  $x = 0$  is:

- (A) 2    (B) 3    (C) -4    (D) 4

Answer: (C)

(v) The value of the polynomial  $5x - 4x^2 + 3$ , when  $x = -1$  is-

- (A) -6    (B) 6    (C) 2    (D) -2

Answer: (A)

## 2) SHORT ANSWER QUESTIONS:

(i) Give an example of a monomial and a binomial having degrees of 82 and 99, respectively.

Solution: An example of a monomial having a degree of 82 =  $x^{82}$  An example of a binomial having a degree of 99 =  $x^{99} + x$ .

(ii) Find the value of the polynomial  $5x - 4x^2 + 3$  at  $x = 2$  and  $x = -1$ .

**Solution:** Let the polynomial be  $f(x) = 5x - 4x^2 + 3$

Now, for  $x = 2$ ,

$$f(2) = 5(2) - 4(2)^2 + 3$$

$$\Rightarrow f(2) = 10 - 16 + 3 = -3$$

Or, the value of the polynomial  $5x - 4x^2 + 3$  at  $x = 2$  is -3.

Similarly, for  $x = -1$ ,

$$f(-1) = 5(-1) - 4(-1)^2 + 3$$

$$\Rightarrow f(-1) = -5 - 4 + 3 = -6$$

The value of the polynomial  $5x - 4x^2 + 3$  at  $x = -1$  is -6.

(iii) Compute the value of  $9x^2 + 4y^2$  if  $xy = 6$  and  $3x + 2y = 12$ .

Solution: Consider the equation  $3x + 2y = 12$

Now, square both sides:

$$(3x + 2y)^2 = 12^2$$

$$\Rightarrow 9x^2 + 12xy + 4y^2 = 144$$

$$\Rightarrow 9x^2 + 4y^2 = 144 - 12xy$$

From the questions,  $xy = 6$  So,

$$9x^2 + 4y^2 = 144 - 72$$

Thus, the value of  $9x^2 + 4y^2 = 72$ .

### 3) PRACTICE QUESTIONS:

#### (A) MCQ'S QUESTIONS:

Q1.  $\sqrt{2}$  is a polynomial of degree is -

- (A) 2      (B) 0      (C) 1      (D)  $\frac{1}{2}$

Q2. Degree of the polynomial  $4x^4 + 0x^3 + 0x^5 + 5x + 7$  is -

- (A) 4      (B) 5      (C) 3      (D) 7

Q3. Degree of the zero polynomial is-

- (A) 0      (B) 1      (C) Any natural number      (D) Not defined

Q4. If  $p(x) = x^2 - 2\sqrt{2}x + 1$ , then  $p(2\sqrt{2})$  is equal to

- (A) 0      (B) 1      (C)  $4\sqrt{2}$       (D)  $8\sqrt{2} + 1$

Q5. The value of the polynomial  $5x - 4x^2 + 3$ , when  $x = -1$  is-

- (A) -6      (B) 6      (C) 2      (D) -2

Q6. If  $p(x) = x + 3$ , then  $p(x) + p(-x)$  is equal to-

- (A) 3      (B)  $2x$       (C) 0      (D) 6

Q7. Zero of the polynomial  $p(x) = 2x + 5$  is -

- (A)  $-2/5$       (B)  $-5/2$       (C)  $2/5$       (D)  $5/2$

Q8. The value of  $249^2 - 248^2$  is-

- (A) 12      (B) 477      (C) 487      (D) 497

Q9. . If  $49x^2 - b = \{7x + \frac{1}{2}\} \{7x - \frac{1}{2}\}$ , then the value of  $b$  is-

- (A) 0      (B)  $1/\sqrt{2}$       (C)  $1/4$       (D)  $\frac{1}{2}$

#### ASSERTION & REASON BASED QUESTION:

Q10. **Assertion:** The value of  $593 \times 607$  is 359,951.

**Reason:**  $(a + b)(a - b) = a^2 - b^2$

**Directions:** Choose the correct answer out of the following choices :

- (A) Assertion and Reason both are correct statements and Reason is the correct explanation of Assertion.  
(B) Assertion and Reason both are correct statements but Reason is not the correct explanation of Assertion.  
(C) Assertion is correct statement but Reason is wrong statement.  
(D) Assertion is wrong statement but Reason is correct statement.

(B) SHORT ANSWER QUESTIONS:

Q11. Calculate the perimeter of a rectangle whose area is  $25x^2 - 35x + 12$ .

Q12. Find the value of  $x^3 + y^3 + z^3 - 3xyz$  if  $x^2 + y^2 + z^2 = 83$  &  $x + y + z = 15$ .

Q13. If  $a + b = 15$ ,  $ab = 14$  then find  $a^2 + b^2$ .

Q14. Check whether  $(7 + 3x)$  is a factor of  $(3x^3 + 7x)$ .

Q15. Factorise  $x^2 + 1/x^2 + 2 - 2x - 2/x$ .

Q16. Factorise  $x^2 - 1 - 2a - a^2$ .

Q17. Expand  $(a - 2b + 3c)^2$

Q18. Expand  $(3a - 4b)^3$

Q19. Classify the following polynomials as polynomials Monomial, Binomial, Trinomial, Polynomial etc.

(i)  $x^2 + x + 1$  (ii)  $y^3 - 5y$  (iii)  $xy$  (iv)  $x^2 - 2xy + y^2 + 1$

Q20. Factorise:  $x^3 - 64$

(C) ANSWER OF PRACTICE QUESTIONS:

(i) MCQ QUESTIONS:-

1) (B), 2) (A), 3) (D), 4) (B), 5) (A), 6) (D), 7) (B), 8) (D) 9), (C) 10) (A)

(ii) SHORT QUESTIONS:

11)  $P = (2x - 14)$ , 12) 180, 13) 197, 14) NO, 15)  $(x + \frac{1}{x})(x + \frac{1}{x} - 2)$ ,

16)  $(x-1-a)(x+1+a)$ , 17)  $(a^2 + 4b^2 + 9c^2 - 4ab - 12bc + 6ca)$

18)  $27a^3 - 64b^3 - 108a^2c + 144ac^2$ ,

19) (i) Trinomial (ii) Binomial (iii) Monomial (iv) Polynomial

20)  $(x - 4)(x^2 + 4x + 16)$

CLASS TEST – 1 -  
TOPIC- POLYNOMIALS  
CLASS-IX

TIME- 45 MIN.

M.M. 20

SECTION – A –

( 1 mark for each correct option)

Choose the correct option from the following questions:-

Q1. . On dividing  $x^2 - 2x - 15$  by  $(x - 5)$ , the quotient is  $(x + 3)$  and remainder is 0. Which of the following statements is true?

- (a)  $x^2 - 2x - 15$  is a multiple of  $(x - 5)$       (b)  $x^2 - 2x - 15$  is a factor of  $(x - 5)$   
(c)  $(x + 3)$  is a factor of  $(x - 5)$       (d)  $(x + 3)$  is a multiple of  $(x - 5)$

Q2. The value of the polynomial  $3x + 2x^2 - 4$  at  $x = 0$  is :

- (a) 2      (b) 3      (c) -4      (d) 4

Q3. If  $p(x) = x + 3$ , then  $p(x) + p(-x)$  is equal to :

- (a) 3    (b)  $2x$     (c) 0    (d) 6

Q4. If  $x^2 + kx + 6 = (x + 2)(x + 3)$  for all  $x$ , then the value of  $k$  is:

- (a) 1    (b) -1    (c) 5    (d) 3

SECTION – B –

(2 marks for each correct answer)

Q5. Factorise:  $9x^2 + 4y^2 + 16z^2 + 12xy - 16yz - 24xz$

Q6. Factorise:  $4x^2 + 20x + 25$

Q7. Verify if 2 and 0 are zeroes of the polynomial  $x^2 - 2x$ .

Q8. Evaluate:  $99^3$

Q9. Expand:  $(3a+5b)^3$ .

SECTION – C –

(3 marks for each correct answer)

Q10. If  $(x - 4)$  is a factor of the polynomial  $2x^2 + Ax + 12$  and  $(x - 5)$  is a factor of the polynomial  $x^3 - 7x^2 + 11x + B$ , then what is the value of  $(A - 2B)$ ?

Q11. If  $(x+3)$  and  $(x-3)$  are factors of  $ax^2+5x+b$  then show that  $a=b$ .

CLASS TEST – 2 -  
TOPIC- POLYNOMIALS  
CLASS-IX

TIME - 90 MIN.

M.M. 30

SECTION – A –

( 1 mark for each correct option)

Choose the correct option from the following questions:-

Q1. The value of  $(5)^3 + (7)^3 + (-12)^3$  is:

- (a) 1260 (b) -1260 (c) 420 (d) 0

Q2. If  $a + b = 7$ ,  $ab = 6$  then the value of  $a^3 + b^3$  will be:

- (a) 117 (b) 217 (c) 469 (d) 61

Q3. Product of  $(2a + 7)(2a - 7)$  is:

- (a)  $2a^2 - 7$  (b)  $2a^2 - 49$  (c)  $2a^2 + 49$  (d)  $4a^2 - 49$

Q4. Factors of  $\sqrt{2}x^2 - x - 10\sqrt{2}$  are:

- (a)  $(\sqrt{2}x - 5)(x + 2\sqrt{2})$  (b)  $(\sqrt{2}x + 5)(x + 2\sqrt{2})$   
(c)  $(\sqrt{2}x + 5)(x - 2\sqrt{2})$  (d)  $(\sqrt{2}x - 5)(x - 2\sqrt{2})$

Q5. Factors of  $343a^3 - 125b^3$  are:

- (a)  $(7a + 5b)(49a^2 + 35ab + 25b^2)$   
(b)  $(7a - 5b)(49a^2 - 35ab - 25b^2)$   
(c)  $(7a - 5b)(7a^2 + 35ab + 5b^2)$   
(d)  $(7a - 5b)(49a^2 + 35ab + 25b^2)$

#### SECTION – B –

(2 marks for each correct answer)

Q6. If  $a + b = 15$ ,  $ab = 14$  then find  $a^2 + b^2$

Q7. Expand  $(a - 2b + 3c)^2$

Q8. Expand  $(3a - 4c)^3$

Q9. Find the product of  $(x^2 + 3y + 7)(x - 2)$ .

Q10. Find the value of  $p(-2\sqrt{3})$  if  $p(y) = (\sqrt{3}y^2 - 3y + 5\sqrt{3})$ .

#### SECTION – C –

(3 marks for each correct answer)

Q11. If  $a + b + c = 9$  and  $ab + bc + ca = 26$ , find  $a^2 + b^2 + c^2$ .

Q12. If  $x + y = 12$  and  $xy = 27$ , find the value of  $x^3 + y^3$ .

Q13. If  $(x - 2)$  is a factor of  $(x) = x^4 - 2x^3 + 3x^2 - ax + 3a - 7$   
Then find the value of  $a$ .

Q14. Find  $k$  if  $x^3 + 6x^2 + 11x + 6 = k(x + 1)$

Q15. Factorise:  $x^3 - 216y^3 - 18x^2y + 108xy^2$ .

### ANSWERS FOR TEST PAPERS:

#### TEST 1 :

##### (i) MCQ QUESTIONS:-

- 1) (a) 2) (c) 3) (c) 4) (c)

##### (ii) SHORT ANSWER QUESTIONS-

5)  $(3x + 2y - 4z)^2$ , 6)  $(2x + 5)^2$ , 7) YES, 2 & 0 are zeroes of given polynomial

8) 970299 9)  $27a^3 + 125b^3 + 135a^2b + 225ab^2$ , 10)  $A = 11, B = 5$  then  $A - 2B = 1$

## TEST 2 :

### (i) MCQ QUESTIONS:-

1) (b) 2) (b) 3) (d) 4) (a) 5) (d)

### (ii) SHORT ANSWER QUESTIONS-

6) 197, 7)  $a^2 + 4b^2 + 9c^2 - 4ab - 12bc + 6ac$ , 8)  $9a^3 - 64c^3 - 108a^2c + 144ac^2$

9)  $x^3 + 3xy + 7x - 2x^2 - 6y - 14$ , 10)  $23\sqrt{3}$ , 11) 29, 12) 756, 13)  $a = -5$ ,

14)  $K = (x + 3)(x + 2)$ , 15)  $x^3 - 216y^3 - 18x^2y + 108xy^2$



# CO-ORDINATE GEOMETRY

## (I) Main Concepts and Results:

1. Identify the need of coordinate geometry.
2. Identify Cartesian system.
3. Understand the four quadrants and the nature of signs of points.
4. Identify the quadrant in which a given point lies.
5. Identify the terms - axes and origin.
6. Understand the meaning of coordinates.
7. Acquire skill in plotting points in the Cartesian plane.
8. Find the coordinates of a point plotted in Cartesian plane.
9. Identify the equations of the axes.
10. Understand the nature of coordinates of points on the two axes.

### EXAMPLES:

#### 1) MCQ'S-

**1)** The name of the horizontal line in the Cartesian plane which determines the position of a point is called:

- a. Origin      b. X-axis      c. Y-axis      d. Quadrants

Answer: **b**

**2)** The name of the vertical line in the Cartesian plane which determines the position of a point is called:

- a. Origin      b. X-axis      c. Y-axis      d. Quadrants

Answer: **c**

**3)** The section formed by horizontal and vertical lines determining the position of the point in a Cartesian plane is called:

- a. Origin      b. X-axis      c. Y-axis      d. Quadrants

Answer: **d**

**4)** The point of intersection of horizontal and vertical lines determining the position of a point in a Cartesian plane is called:

- a. Origin      b. X-axis      c. Y-axis      d. Quadrants

Answer: **a**

**5)** If the coordinates of a point are (0, -4), then it lies in:

- a. X-axis      b. Y-axis      c. At origin      d. Between x-axis and y-axis

Answer: **b**

**2) SHORT ANSWER QUESTIONS:**

Q6. Which of the following points lie on y-axis?

A(1,1), B(1,0), C(0,1), D(0,0), E(0,-1), F(-1,0), G(0,5), H(-7,0), I(3,3).

Answer: C(0,1), D(0,0), E(0,-1), G(0,5)

Q7. Without plotting the points indicate the quadrant in which they lie, if:

1) Ordinate is -5 and abscissa is 3.

2) abscissa is -5 and ordinate is -3.

Answer: IV & III quadrant.

Q8. Take a rectangle ABCD with A(-6,4), B(-5,2), C(-3,3), D(-,4). Find it's mirror image with respect to x-axis.

Answer: A(-6,-4), B(-6,-2), C(-2,-2), D(-2,-4)

**3) PRACTICE QUESTIONS:**

**(A) MCQ'S QUESTIONS:**

**1)** If the coordinates of a point are (3, 0), then it lies in:

- a. X-axis      b. Y-axis      c. At origin      d. Between x-axis and y-axis

**2)** If the coordinates of a point are (-3, 4), then it lies in:

- a. First quadrant      b. Second quadrant      c. Third quadrant      d. Fourth quadrant

**3)** Points (1, 2), (-2, -3), (2, -3);

- a. First quadrant      b. Do not lie in the same quadrant      c. Third quadrant      d. Fourth quadrant

**4)** If x coordinate of a point is zero, then the point lies on:

- a. First quadrant      b. Second quadrant      c. X-axis      d. Y-axis

**ASSERTION & REASON BASED QUESTION:**

Q5. **Assertion:** The abscissa of a point (5, 2) is 5.

**Reason:** The  $\square$  distance of a point from y-axis is called its abscissa.

*Directions:* Choose the correct answer out of the following choices :

(A) Assertion and Reason both are correct statements and Reason is the correct explanation of Assertion.

(B) Assertion and Reason both are correct statements but Reason is not the correct explanation of Assertion.

- (C) Assertion is correct statement but Reason is wrong statement.  
 (D) Assertion is wrong statement but Reason is correct statement.

(B) SHORT ANSWER QUESTIONS:

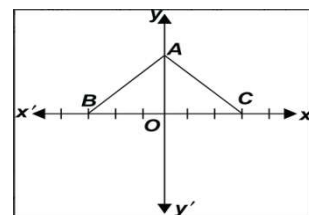
Q6. Find the coordinates of the point

- a) Whose ordinate is -4 and lies on y-axis.  
 b) Whose abscissa is 5 and lies on x-axis.

Q7. A point lies on x-axis at a distance of 9 units from y-axis. What are its coordinates? What will be the coordinates of a point, if it lies on y-axis at a distance of -9 units from x-axis?

Q8. What will be reflections of D(-2, -3) in x-axis and y-axis?

Q9. In the given figure, ABC is an equilateral triangle. The coordinates of vertices B and C are (3,0) & (-3,0) respectively. Find the coordinates of its vertex A. Also, find its area.



Q10. Plot the points (-1, -1), (2, 3) and (8, 11) and show that they are collinear.

(C) ANSWER OF PRACTICE QUESTIONS:

(A) MCQ QUESTIONS:-

- 1) (a), 2) (b), 3) (b) 4) (d), 5) (A),

(B) SHORT QUESTIONS:

- 6) a) (0,-4), b) (5,0)

7) When the point lies on x axis at a distance of 9 units from y axis then the coordinate of this point is (9,0).  
 When the point lies on y axis at a distance of -9 units from x axis then the coordinate of this point is (0,-9).

- 8) On x-axis (-2,3), On y-axis (2,-3)

- 9)  $BC = 3+3 = 6$  units

Length of altitude  $OA = \frac{\sqrt{3}}{2} \times BC = \frac{\sqrt{3}}{2} \times 6 = 3\sqrt{3}$  Therefore, coordinate of A are (0,  $3\sqrt{3}$ ).

CLASS TEST – 1 -  
 TOPIC- CO-ORDINATE GEOMETRY  
 CLASS-IX

TIME- 45 MIN.

M.M. 20

SECTION – A – ( 1 mark for each correct option)

Choose the correct option from the following questions:-

Q1. The point (-10, 0) lies in



Q12. **Assertion:** Point (4, -2) lies in IV quadrant.

**Reason:** The  $\square$  distance of a point from y-axis is called its abscissa.

**ANSWERS OF TEST 1:-**

(A) MCQ QUESTIONS:-

1) (c), 2) (c), 3) (d) 4) (b)

(B) SHORT QUESTIONS:

5) I and IV quadrants , Explanation: In a coordinate plane, x can take positive values in the first and fourth quadrants. For example, (2, 2) and (2, -4) lie on the first and fourth quadrants, respectively.

6) I,IV,III,II, on Y-Axis & X-Axis ,

7) 0 , Explanation: The abscissa of all the points on the y-axis is 0. We know that the coordinates of any point on the y-axis is (0, y). Here, the ordinate can take any value and the abscissa is zero.

8) Y-Axis , 9) (0, -5) , 10)  $x=1, y=1$

Q11. (a) Assertion and Reason both are correct statements and Reason is the correct explanation of Assertion.

Q12. (b) Assertion and Reason both are correct statements but Reason is not the correct explanation of Assertion.

# LINEAR EQUATION IN TWO VARIABLE

## Main Concepts and Results:

- Any equation which can be written in the form  $ax + by + c = 0$ , where  $a$ ,  $b$  and  $c$  are real numbers  $a \neq 0$ ,  $b \neq 0$  is called a **linear equation in two variables**.
- An **ordered pair**  $(x, y)$  is the solution of linear equation in two variables if this point satisfies the linear equation  $ax + by + c = 0$ .
- Examples** of line are equation in two variables  $-2x + 4y = 1$ ,  $x + 10y = 5$ , etc.
- A **linear equation** has a **unique solution** when there exists only one point which satisfies the linear equation.
- For example: Solution of  $2x + 6 = 2$  is
- $2x + 6 = 2$   
 $2x = 2 - 6$

$$2x = -4$$

$$x = -4 \div 2$$

$$x = -2$$

In  $2x + 6 = 2$  has only one variable  $x$  therefore  $x$  has unique solution. Also, geometrically it will be a point on rectangular axes whose ordinate will be 0.

- A system of linear equation has unique solution when the system of lines intersects each other at only one point.
- A **linear equation in two variables** have **infinitely many solutions** means there are more than one ordered pair which satisfy the equation.
- Equation of x-axis** is  $y = 0$  because in x-axis, y coordinates are always zero and the coordinate form of any point on x-axis will be  $(x, 0)$ .
- Equation of y-axis** is  $x = 0$  because at y-axis x-coordinates are always zero and the coordinate form of any point on y-axis will be  $(0, y)$

## ILLUSTRATIONS:

### MCQ TYPES OF QUESTIONS:

1. Which points given below satisfy the equation  $2x + 3y = 12$ ?

- A. (-6, 8)    B. (6, -8)    C. (3, 2)    D. (-4, 5)

Ans. A

2. Which of the following is a linear equation in one variable?

- A.  $2x + 3y = 0$     B.  $x^2 = 5x + 3$     C.  $5x = y^2 + 3$     D.  $2x + 5 = 11$

Ans. D

3. The cost of book (x) exceeds twice the cost of pen (y) by 10 rupees. This statement can be expressed as linear equation as:

- A.  $x - 2y - 10 = 0$     B.  $2x - y - 10 = 0$     C.  $2x + y - 10 = 0$     D.  $x - 2y + 10 = 0$

Ans. A

4. The linear equation  $2x - 5y = 7$  has

- (A) unique solution (B) Two solutions (C) Infinitely many solutions (D) No solution

Ans. C

5. Assertion: (2,1) is a solution of  $2x + 3y = 7$

Reason: If Ordered pair (p, q) lies on the line then it is one of the solutions of line  $ax + by + c = 0$ .

A) Both Assertion and Reason are correct and reason is correct explanation for the assertion.

B) Both Assertion and Reason are false but reason is not correct explanation for assertion.

C) Assertion is correct but reason is false.

D) Both Assertion and reason are false.

Ans. A

### SHORT ANSWER TYPE QUESTIONS:

1. Find the points where the graph of the equation  $3x + 4y = 12$  cuts the x-axis and the y-axis.

Ans. The graph of the linear equation  $3x + 4y = 12$  cuts the x-axis at the point where  $y = 0$ . On putting  $y = 0$  in the linear equation, we have  $3x = 12$ , which gives  $x = 4$ . Thus, the required point is (4, 0).

2. Determine the point on the graph of the equation  $2x + 5y = 20$  whose x-coordinate is  $\frac{5}{2}$  times its ordinate.

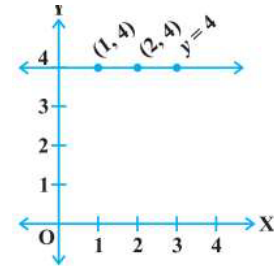
Ans. As the x-coordinate of the point is  $\frac{5}{2}$  times its ordinate, therefore,  $x = \frac{5}{2}y$ . Now putting value of x in  $2x + 5y = 20$ , we get,  $y = 2$ . Therefore,  $x = 5$ . Thus, the required point is (5, 2).

3. At what point does the graph of the linear equation  $x + y = 5$  meet a line which is parallel to the y-axis, at a distance 2 units from the origin and in the positive direction of x-axis.

Ans. The coordinates of the points lying on the line parallel to the y-axis, at a distance 2 units from the origin and in the positive direction of the x-axis are of the form (2, a). Putting  $x = 2$ ,  $y = a$  in the equation  $x + y = 5$ , we get  $a = 3$ . Thus, the required point is (2, 3).

4. Draw the graph of the equation represented by the straight line which is parallel to the x-axis and is 4 units above it.

Ans.



5. Let y varies directly as x. If  $y = 12$  when  $x = 4$ , then write a linear equation. What is the value of y when  $x = 5$ .

Ans. This shows that  $y = 3x$

Hence, at  $x = 5$  we get  $y = 15$ .

### **QUESTIONS FOR PRACTICE:**

#### **MCQ TYPES OF QUESTIONS:**

- The positive solutions of the equation  $ax + by + c = 0$  always lie in the quadrant (A) 1st (B) 2nd quadrant (C) 3rd quadrant (D) 4th quadrant
- $x = 5$ ,  $y = 2$  is a solution of the linear equation (A)  $x + 2y = 7$  (B)  $5x + 2y = 7$  (C)  $x + y = 7$  (D)  $5x + y = 7$
- How many linear equations in x and y can be satisfied by  $x = 1$  and  $y = 2$ ? (A) Only one (B) Two (C) Infinitely many (D) Three
- Any point on the line  $y = x$  is of the form (A) (a, a) (B) (0, a) (C) (a, 0) (D) (a, -a)
- Assertion: The graph of  $y = b$  is always parallel to x-axis.  
Reason: The graph of  $y = 6$  is a line that passes through the origin.  
A) Both Assertion and Reason are correct and reason is correct explanation for the assertion.  
B) Both Assertion and Reason are false but reason is not correct explanation for assertion.  
C) Assertion is correct but reason is false.  
D) Both Assertion and reason are false.

### **SHORT ANSWER TYPE QUESTIONS:**

1. How many solution(s) of the equation  $2x + 1 = x - 3$  are there on the:

- (i) Number line (ii) Cartesian plane



2. Show that the points A (1, 2), B (− 1, − 16) and C (0, − 7) lie on the graph of the linear equation  $y = 9x - 7$ .

3. For what value of c, the linear equation  $2x + cy = 8$  has equal values of x and y for its solution.

4. The following observed values of x and y are thought to satisfy a linear equation. Write the linear equation:

x	6	−6
y	−2	6

Draw the graph using the values of x, y as given in the above table. At what points the graph of the linear equation

(i) cuts the x-axis      (ii) cuts the y-axis

5. If the point (3, 4) lies on the graph of  $3y = ax + 7$ , then find the value of a.

### ANSWERS:

### MCQ QUESTIONS

1. A      2. C      3. C      4. A      5. C

### SHORT ANSWER TYPE QUESTIONS

1. One, infinite      2. yes, all points are solutions.      3.  $c = \frac{8-x}{x}$
4. The graph cuts the x-axis at (3, 0) and the y-axis at (0, 2).
5.  $\frac{5}{3}$

### PRACTICE TEST-1

MARKS: 20

Q NO.

### QUESTIONS

#### SECTION - A

1. The equation of x-axis is 1
2. (a)  $a = 0$  (b)  $y = 0$  (c)  $x = 0$  (d)  $y = k$   
The ordered pair (m, n) satisfies the equation  $ax + by + c = 0$  if 1
- (a)  $am + bn = 0$  (b)  $c = 0$  (c)  $am + bn + c = 0$  (d)  $am + bn - c = 0$
3. Which of the following is not a linear equation in two variables? 1
- (a)  $ax + by = c$  (b)  $ax^2 + by = c$  (c)  $2x + 3y = 5$  (d)  $3x + 2y = 6$

4. A linear equation in two variables has \_\_\_ solutions. 1  
 (a)no (b)only one (c)only two (d)infinitely many
5.  $x=5$  ,  $y=2$  is a solution of the linear equation 1  
 (a) $x+2y=7$  (b) $5x+2y=7$  (c) $x+y=7$  (d) $5x+y=7$
6. The graph of the linear equation  $2x+3y=6$  is a line which meets the x-axis at the point 1  
 (a)(2,0) (b)(0,3) (c)(3,0) (d)(0,2)
7. The point of the form (a , a) always lies on: 1  
 (a) x-axis (b) y-axis (c) on the line  $y = x$  (d) on the line  $x + y = 0$
8. The solution of the equation  $x - 2y = 4$  is: 1  
 (a)(0,2) (b)(4,0) (c)(1,1) (d)(2,0)
9. If (2 , 0) is a solution of the linear equation  $2x + 3y = k$ , then the value of k is 1  
 (a)4 (b)6 (c)5 (d)2
10. The equation  $x = 7$ , in two variables, can be written as 1  
 (a) $x+0y=7$  (b)  $0x+y=7$  (c)  $0x+0y=7$  (d) $x+y=7$

#### SECTION-B

11. Find the solution of the linear equation  $x+2y=8$  which represents a point on (i)x-axis (ii)y-axis 2
12. Solve the equation  $2x+1 = x-3$ , and represent the solution(s) on 2  
 (i) The number line,  
 (ii) The Cartesian plane.
13. Let y varies directly as x. If  $y = 12$  when  $x=4$ , then write a linear equation. What is the value of y when  $x=5$ ? 2
14. Determine the point on the graph of the equation  $2x + 5y = 20$  whose x-coordinate is  $\frac{5}{2}$  times its ordinate. 2
15. What is the distance of (2 , 4) from x-axis and y-axis. 2

ANSWERS:

1.b 2. C 3.b 4.d 5. C 6.c 7.c 8.b 9.a 10. a

11. (i) (8,0) (ii) (0,4)

12.  $x = -4$

13.  $y = 3x$ ,  $y = 15$

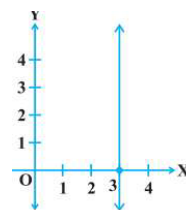
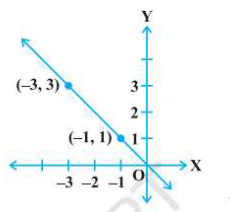
14.(5,2)

## **PRACTICE TEST-2**

**MARKS: 30**

Q N O	QUESTION	
	SECTION - A	
1	Which of the following represent a line parallel to x-axis? (A) $x + y = 3$ (B) $2X + 3 = 7$ (C) $2Y - 3 = Y - 7$ (D) $x + 3 = 0$	1
2	The point of the form $(a, -a)$ always lies on the line (A) $x = a$ (B) $y = -a$ (C) $y = x$ (D) $x + y = 0$	1
3	If we multiply or divide both sides of a linear equation with a non-zero number, then the solution of the linear equation: (A) Changes (B) Remains the same (C) Changes in case of multiplication only (D) Changes in case of division only	1
4	The equation $2x + 5y = 7$ has a unique solution, if $x, y$ is: (A) Natural numbers (B) Positive real numbers (C) Real numbers (D) Rational numbers	1
5	The linear equation $3x - y = x - 1$ has: (A) A unique solution (B) Two solutions (C) Infinitely many solutions (D) No solution	1
6	A linear equation in two variables is of the form $ax + by + c = 0$ , where (A) $a \neq 0, b \neq 0$ (B) $a = 0, b \neq 0$ (C) $a \neq 0, b = 0$ (D) $a = 0, c = 0$	1
7	Any point on the y-axis is of the form (A) $(x, 0)$ (B) $(x, y)$ (C) $(0, y)$ (D) $(y, y)$	1
8	The solution of a linear equation in two variables is (A) a number which satisfies the given equation (B) an ordered pair which satisfies the given equation (C) an ordered pair, whose respective values when substituted for $x$ and $y$ in the given equation, satisfies it (D) none of these	1
9	The graph of $ax + by + c = 0$ is (A) a straight line parallel to x-axis (B) a straight line parallel to y-axis (C) a general straight line (D) a line in the 2 <sup>nd</sup> and 3 <sup>rd</sup> quadrant	1
10	The ordered pair $(m, n)$ satisfies the equation $ax + by + c = 0$ if (A) $am + bn = 0$ (B) $c = 0$ (C) $am + bn + c = 0$ (D) $am + bn - c = 0$	1

- 1 The linear graph  $2x + 3y = 12$  cuts y axis at 1
- 1 (A) (3, 0) (B) (4, y) (C) (2, 2) (D) (3,2)
- 1 The graph of the linear equation in two variables  $y = mx$  is 1
- 2 (A) a line parallel to x-axis
- (B) a line parallel to y-axis
- (C) a line passing through the origin
- (D) not a straight line
- 1 How many linear equations in x and y can be satisfied by 1
- 3  $x = -1$  and  $y = 3$ ?
- (A) Only one (B) two
- (B) (C) three (D) infinitely many
- 1 Point (3,1) lies on the line: 1
- 4 (A)  $x + 2y = 5$  (B)  $x + 2y = -6$  (C)  $x + 2y = 6$  (D)  $x + 2y = 16$
- 1 The graph of the linear equation  $x + 2y = 7$  passes through 1
- 5 the point
- (a) (0, 7) (b) (4, 3) (c) (6,1) (d) (7,0)
- 1 The graph below is of which linear equation: 1
- 6 (A)  $x + y = 0$
- (B)  $x - y = 0$
- (C)  $2x + y = 3$
- (D)  $2x - 3y = 4$
- 1 The following is the graph of which 1
- 7 linear equation:
- (A)  $x - 3 = 0$
- (B)  $x = y$
- (C)  $2x + y = 0$
- (D)  $x + 2y = 0$
- 1 The graphs of linear equations  $y = x$  and  $y = -x$  on the same 1
- 8 cartesian plane. What do you observe?
- (A) Both lines intersect at origin.
- (B) Both lines are parallel to x-axis.
- (C) Both lines are parallel to y-axis.
- (D) None of these.
- 1 Assertion: (2,4) is a solution of  $2x + 3y = 16$  1
- 9 Reason: If Ordered pair (p, q) lies on the line then it is one of the solutions of line  $ax + by + c = 0$ .
- A) Both Assertion and Reason are correct and reason is correct explanation for the assertion.
- B) Both Assertion and Reason are false but reason is not correct explanation for assertion.
- C) Assertion is correct but reason is false.



- D) Both Assertion and reason are false.
- 2 The value of k if (3,1) lies on  $4x - ky = -2$  1
- 0
- . a)10 (b)14 (c)15 (d)12

#### SECTION - B

- 2 Form a linear equation whose solutions are represented by 2
- 1 the points having the sum of the coordinates as 10 units.
- .
- 2 Determine the point on the equation  $2x + 5y = 20$  whose 2
- 2 x-coordinate is  $\frac{5}{2}$  times its ordinate.
- .
- 2 How many solution(s) of the equation 2
- 3  $3x + 1 = 2x - 3$  are there on the:
- . (i) Number line (ii) Cartesian plane
- 2 Find four different solutions of the equation  $x + 2y = 6$ . 2
- 4
- .
- 2 The cost of a notebook is twice the cost of a pen. Write a linear 2
- 5 equation in two variables to represent this statement.
- .

#### ANSWERS:

1.C 2. B 3.C 4.A 5.C 6.A 7.C 8.C 9.C 10.C 11.D 12.C 13.C 14.A 15.D  
 16.A 17.A 18.A 19.A 20.B 21.  $x + y = 10$  22.  $\frac{5}{2}$  23. (i) one (ii) infinite 24. (2,2),  
 (0,3), (6,0), (4,1)

25. let cost of one pen be x and one notebook be y

$$y = 2x$$

$$y - 2x = 0$$

## SST HHW

### Class-9

1. Mark all the major rivers features of India on a Physical map of India and color them beautifully
2. Prepare 10 questions on the temples in Andhra Pradesh.
3. Mark the places given in your syllabus on a physical map of India and paste the map in your notebook.
4. Make 20 MCQ from every chapter that has been completed after Half-yearly
5. Learn the chapters done in your notebook for exams
6. Write difficult words found in social science book in your notebook