DAV PUBLIC SCHOOL, JHARSUGUDA

QUESTION BANK (MATHEMATICS),CLASS-VII

CHAPTER-1 RATIONAL NUMBERS

SECTION - A(1Marks)

1.What do you mean by a rational number ?

2.Find the absolute value of $\frac{-8}{7}$.

3.Find the standard form of $\frac{-21}{42}$.

4.Every integer is an whole number.(True/False)

5.Which of the following is not a rational number ?

a) $\frac{5}{4}$ b) $\frac{-2}{4}$ c) $\frac{1}{0}$ d) -5

6. Which is the negative rational number?

a) 0 b)-3/- 4 c)1/2 d) -4/9

7. Which is the equivalent fraction of $\frac{2}{3}$?

a) $\frac{12}{20}$ b) $\frac{6}{10}$ c) $\frac{16}{24}$ d)None of these.

8. The absolute value of $\frac{3}{2}$ is

a) $\frac{3}{2}$ b) $\frac{-3}{2}$ c) $\frac{3}{-2}$ d) -3

9. Find x If $\frac{8}{7} = \frac{X}{-35}$

a) 40 b) -40 c) -35 d) 56

10. Write the standard form of $\frac{-25}{65}$

a) $\frac{-25}{65}$ b) $\frac{5}{13}$ c) $\frac{-5}{13}$ d) none of these

11.Which of the following is an equivalent rational number of $\frac{-72}{180}$

a) $\frac{-36}{80}$ b) $\frac{-8}{25}$ c) $\frac{-9}{25}$ d) $\frac{-24}{90}$

12. When $\frac{4}{-7}$ is written as a rational number with denominator 28 , then the numerator is …

a)20 b) - 16 c) -28 d) 24

13. Which of the following integer is neither positive nor negative ?

a)1000 b)100 c)10 d) 0

14. A rational number $\frac{p}{q}$ is said to be in standard form if q is positive and H.C.F of $p\ and\ q$ is

a) 1 b)10 c) -10 d) -5

15. A rational number $\frac{p}{q}$ is said to be in standard form if

a) q is positive b) HCF of p and q is 1 c) both (i) and (ii) d) none of these

16. Between two consecutive integers how many rational numbers are found

a) one b) two c) infinitely many d) none of these

17. $\frac{p}{s} = \frac{x}{y}$ if

a) p = y b) s = x c) p × y = s × x d) none of these

18. When $\frac{3}{5}$ is written as a rational number with denominator 45 then the numerator is

a)15 b)25 c)27 d)33

19.Every rational number is

a)an integer b) a fraction c) a natural number d) None of these

20.On a number line the length of the line segment joining 3 and -3 is ----units

(a) 6 (b) 3 (c) -3 (d) 0

21. On a number line which of the following number lies to the right of 5 ?

(a) 0 (b) $\frac{-1}{2}$ (c) $\frac{15}{7}$ (d) $\frac{11}{2}$

22. Express $\frac{3}{5}$ as rational number with numerator -21.

23. Find the value of x if: $\frac{23}{x} = \frac{2}{-8}$.

24. What is the multiplicative identity element in the set of whole number?

25. What is the standard form of $\frac{44}{-77}$?

26.Reciprocal of $\frac{-3}{4}$ is _____.

27. If x less than zero, then the absolute value of x is _____

28. which is a fraction? $-\frac{1}{2} or\ \frac{1}{2}$

SECTION – B (2Marks)

1.Which one is greater ? $\frac{-2}{5}$ or $\frac{-1}{3}$

2.Write down the rational numbers in the form $\frac{p}{q}$ whose numerators and denominators are (-5)×4 and (-5)+4 respectively.

3.Find three rational numbers between 1 and 2.

4.Find three equivalent rational numbers of $\frac{2}{5}$.

5.Fill in the blanks $\frac{-7}{9} = \frac{14}{\_\_} = \frac{\_\_}{27}$.

6. Represent the rational number on the number line: $5\frac{1}{3}$

7. Compare $\frac{4}{9}$ and $\frac{3}{7}$.

8. Find x such that the two rational numbers, $\frac{8}{7}$ and $\frac{x}{-35}$ become equivalent.

9. The sum of two rational numbers is -5. If one of the number is $\frac{2}{3}$, find the other

10. Represent $\frac{3}{5}$ and $\frac{-13}{3}$ on number line

11. Insert two rational numbers between 3/4 and – 9/8

12. Find a rational number between $\frac{1}{4}$ and $\frac{-3}{4}$.

13. Represent $\frac{-29}{4}$ on number line.

14. Fill in the blanks: $\frac{104}{\_\_} = \frac{-4}{9} = \frac{-100}{\_\_}$

15. Write the rational numbers in standard form

(i) $\frac{15}{-40}$ (ii) $\frac{-27}{-243}$

16.Express $\frac{-21}{49}$ as a rational no. with denominator 7.

17. Find x such that the rational numbers in $\frac{15}{x}$ and $\frac{-3}{8}$ are equivalent

18. Arrange the following rational numbers in descending order: $\frac{4}{9}, \frac{-5}{6}, \frac{-7}{-12}, \frac{11}{-24}$

19. Compare the rational numbers: (i) $\frac{-4}{7}, \frac{5}{-9}$ (ii) $\frac{6}{7}, \frac{-54}{-63}$

20. Write the following rational numbers in standard form: $\frac{64}{-20}, \frac{-27}{-15}$

21. On a number line, what is the length of the line- segment joining, (i) $\frac{1}{2}$ and $\frac{-1}{2}$ (ii) 5 and -3

SECTION – C(3Marks)

1.Represent $\frac{1}{5}; \frac{-3}{5}; \frac{7}{5}$ on the same number line.

2.Find 'x' if $\frac{2}{7} = \frac{4}{x}$.

3.On a number line what is the length between $\frac{-1}{5}$ and $-2\frac{1}{5}$.

4.Compare the pair of rational numbers $|\frac{-8}{7}|$ and $|\frac{8}{5}|$.

5.Which one is greatest out of $\frac{2}{5}; \frac{-5}{5}; \frac{7}{5}$.

6. Arrange the following in ascending order:

$\frac{4}{7}, \frac{5}{9}, \frac{2}{5}, \frac{1}{3}$

7. Arrange the following rational number in descending order.
   (i) – 3/10, –7/5 , 9/–15 , 18/30
   (ii) –3/4 , –5/–12 , –7/16 , 3/2
8. (a) Find the missing number:- $\frac{105}{---} = \frac{---}{-99} = \frac{-5}{-11}$
   (b) Compare :- $\frac{-5}{7}$ and $\frac{9}{-13}$
9. Find any three rational numbers between $\frac{-2}{3}$ and $\frac{1}{2}$.
10. Represent the following on the number line.
   a) $\frac{2}{3}$ $b)\ -\frac{25}{6}$
11. Express : $\frac{-4}{7}$ as a rational number with ; (i)numerators 12 (ii) denominator 42
12. Find the reciprocal of $\frac{-2}{3} \times \frac{5}{7} + \frac{2}{9} \div \frac{1}{3} \times \frac{6}{7}$
13. Arrange the rational numbers in descending order $\frac{-6}{5}$; $\frac{2}{-3}$; $\frac{7}{10}$; $\frac{8}{15}$
14. Arrange the rational numbers in ascending order $\frac{-16}{15}$; $\frac{-12}{-30}$; $\frac{7}{10}$; $\frac{6}{15}$.

SECTION – D(4Marks)

1. Find five rational numbers between $\frac{-1}{3}$ and $\frac{1}{2}$.
2. For x=$\frac{3}{4}$ and y = $\frac{-9}{8}$, insert a rational number between $(x - y)^{-1}$ and $(x^{-1} - y^{-1})$
3. Express $\frac{-24}{50}$ as a rational number with
   i) Numerator 12 ii)Denominator 100 iii)Numerator -72 iv) Denominator -75
4. Check whether the following are equivalent rational numbers or not.
   i) $\frac{4}{9}$ and $\frac{16}{27}$ ii) $\frac{-3}{5}$ and $\frac{18}{-30}$
5. (i) Compare the rational numbers $\frac{-4}{-9}$ and $\frac{5}{-6}$
   (ii) On number line what is the length of line segment joining 1/2 and – ½ ?
   (iii) Express $\frac{-4}{7}$ as a rational number with a) denominator – 28 b)numerator -36
6. a) Express $\frac{90}{216}$ as a rational number with numerator 5
   b) Find x such that the rational numbers $\frac{X}{6}$ and –13 become equivalent.
7. (i) Express $\frac{-5}{18}$ as a rational number with
   a) Denominator (-54)
   b) Numerator 20
   (ii) Find X such that $\frac{-4}{9} = \frac{X}{-81}$
8. Arrange the following in ascending order: $\frac{-7}{10}$, $\frac{8}{-15}$, $-\frac{19}{30}$, $\frac{-2}{-5}$

9. a) Arrange $\frac{4}{7}$, $\frac{5}{9}$, $\frac{2}{5}$ in ascending order.

b) Fill in the blanks

$$\frac{36}{----} = \frac{-4}{9} = \frac{84}{-----}$$

10. a) Express $\frac{90}{216}$ as a rational number with numerator 5.

b) Find x such that the rational numbers $\frac{x}{6}$ and -13 become equivalent.

11. a) Arrange the following rational numbers in descending order .

$$\frac{-4}{9} \quad , \quad \frac{5}{-12} \quad , \quad \frac{7}{-18} \quad , \quad \frac{2}{-3}$$

b) Find the value of ' X ' such that the rational numbers $\frac{-5}{7}$ and $\frac{X}{28}$ are equivalent

12. Find equivalent forms of the rational numbers having a common denominator $\frac{5}{12}$, $\frac{7}{4}$, $\frac{9}{60}$, $\frac{11}{3}$

13. (a) Find the average of the rational numbers $\frac{4}{5}$, $\frac{2}{3}$, $\frac{5}{6}$

(b) Compare : $\frac{4}{-3}$ and $1\frac{8}{5}$

CHAPTER-2 OPERATIONS ON RATIONAL NUMBERS

SECTION – A(1Marks)

Q.1. Addition is associative for

a) Natural numbers b) Whole Numbers

c) Rational Numbers d) All of these

2. The additive inverse of a negative number is _____

a)0 b) Positive c) Negative d)none of these

3.A rational number $\frac{a}{b}$ is greater than $\frac{C}{d}$ if

a)ad > bc b) ad < bc c) ad = bc d) ad ≠ bc

4. Between any two distinct rational numbers there exist

a) Finite number rational numbers b) Infinitely many rational numbers

c) No rational number d) none of the above

5. Zero has _____ reciprocal.

a) 1 b) 2 c) 3 d) no

6. Reciprocal of $2\frac{1}{3}$ is

a) 3 ½ b) $\frac{3}{7}$ c) $\frac{6}{14}$ d) $\frac{5}{3}$

7. Which is the identity element of addition?

a) 1 b) 0 c) 10 d) 5

8. Which is the identity element under multiplication?

a) 1 b) 0 c) 10 d) 5

9. Which integer has no reciprocal?

a) 1 b) 0 c) 10 d) 5

10. Which is the additive inverse of -6 ?

a) - 1 b) 0 c) 6 d) None of these

11. The multiplicative inverse of $\frac{-3}{4}$ is

a) $\frac{3}{4}$ b) $\frac{4}{3}$ c) $\frac{-4}{3}$ d) None of these

12. ($-5\frac{1}{3}$) X …… = 1

a) $-3\frac{1}{5}$ b) $\frac{-3}{16}$ c) $\frac{-16}{3}$ d) None of these

13. $\frac{-1}{16} \times$ _____ $= 1$

a) – 16 b)16 c)8 d)- 8

14.The reciprocal of : $\frac{-4}{3} \times \frac{-5}{4}$ is

a) $-\frac{5}{3}$ b) $\frac{5}{3}$ c) $\frac{-3}{5}$ d) None of these

15.Reciprocal of negative rational number is

(a) Positive (b) Zero c) Negative (d) None of these

16. The reciprocal of $\frac{-4}{3}$ is

(a) $\frac{-3}{4}$ (b) $\frac{4}{3}$ (c) $\frac{4}{-3}$ (d) $\frac{-3}{-4}$

17. $1 \div \frac{1}{3} =$ __ .

a) 3 b) 2 c)1 d) None of these

18. Choose the correct answer: If the product of two non-zero numbers is 1, then they are

(a) Additive inverse of each other (b) multiplicative inverse of each other.

(c) Reciprocal of each other (d) both (b) and (c)

19.Find $\frac{3}{5} - \frac{13}{5}$=_____

20. Find $\frac{7}{9} + [-\frac{12}{9}]$=_____

21. Find. $-\frac{5}{9} + [-\frac{17}{9}] =$_____

22. $\frac{4}{-11} + \frac{7}{11} =$_____

23. $\frac{3}{8} + [\frac{-5}{12}] =$_____

SECTION – B(2Marks)

1.The sum of two rational numbers is $\frac{-1}{2}$. If one of the numbers is $\frac{5}{6}$, find the other.

2. What number should be subtracted from $\frac{-2}{3}$ to get $\frac{-1}{2}$?

3. Product of two rational numbers is $\frac{32}{9}$. if one of the numbers is $\frac{-8}{3}$, find the other.

4. Divide the sum of $2\frac{1}{4}$ and $5\frac{1}{5}$ by the product of $2\frac{1}{4}$ and $\frac{2}{3}$.

5. By what number should $\frac{-15}{56}$ be divided to get $\frac{-5}{7}$.

6. The sum of two rational numbers is 1.If one of the number is – 3/7.Find the other.

7. Find the two rational numbers between $\frac{1}{4}$ and $\frac{3}{4}$

8. Subtract : $\frac{2}{-9}$ from $\frac{7}{6}$.

9. Find the reciprocal of $\frac{-2}{3} \times \frac{5}{7} + \frac{2}{9} \div \frac{1}{3} \times \frac{6}{7}$

10. Verify that $(X * y)^{-1} = (x^{-1}) \times (y^{-1})$ by taking $x = \frac{1}{2}$ and $y = -\frac{1}{2}$

11.With what number should we divide $\frac{-3}{7}$, so that the quotient be $\frac{21}{5}$?

12. Subtract -1/9 from 3/5.

13. The sum of two rational numbers is $\frac{-5}{7}$. If one of them is $\frac{-2}{5}$, find the other .

14.The sum of two rational number is –5. If one of the number is $\frac{2}{3}$. Find the other number ?

15. Find the value of $\frac{3}{5} + \frac{5}{4} + \frac{-1}{14} + \frac{-3}{8}$

16. Simplify and express the result in standard form.

$\frac{-4}{3} + \frac{3}{5} - \frac{2}{10}$

17. The sum of two rational numbers is 1.If one of the number is $\frac{-3}{7}$ .Find the other.

18. From a rope of the length 40 metres. A man cuts some equal sized pieces. How many pieces can be cut if each piece is of $\frac{4}{9}$ metres length ?

19. By what number should $\frac{-33}{16}$ be divided to get $\frac{-11}{4}$?

20. Divide the sum of $\frac{5}{21}$ and $\frac{4}{7}$ by their difference.

21.Evaluate

i) $\frac{7}{24} - \frac{-19}{36}$ =_____ ii) $\frac{-5}{-8} - \frac{3}{4}$

22.What should be added to $(\frac{-13}{4} + \frac{-3}{8})$ to get 1 ?

23.Simplify:-i) $\frac{7}{18}$ x (-4) ii) -36 ÷ $(\frac{-5}{9})$

24.By what rational number should $\frac{-8}{15}$ be multiplied to get 24.

SECTION – C(3Marks)

1.Find the product of −5/7 and its reciprocal.

2. Verify (X+Y)+Z=X+(Y+Z) for X= 2/5 ,Y=3/4 and Z=1/4 .

3. Verify (X-Y)-Z≠X-(Y-Z) for X= 1/5 ,Y=-3/5and Z=2/5 .

4. Verify (X+Y)÷Z = X÷Y + X÷Z for X= 1/3 ,Y=-3/4and Z=2/5 .

5. A tin holds $16\frac{1}{2}$ litres of oil. How many such tins will be required to hold $313\frac{1}{2}$ litres of oil?

6. Show that $\frac{3}{5}\left(-\frac{1}{7} - \frac{5}{14}\right) = \frac{3}{5} \times \frac{-1}{7} - \frac{3}{5} \times \frac{5}{14}$

7. Divide the difference of $\frac{12}{5}$ and $\frac{-16}{20}$ by their product.

8. Verify x+ y = y +x by taking x =$\frac{5}{7}$ and y =$\frac{-3}{2}$

9. For x = $\frac{-5}{11}$ & y = $\frac{7}{3}$, Verify that $(x \div y)^{-1} = x^{-1} \div y^{-1}$

10. Simplify and express the result as a rational number in its lowest term .

$\frac{2}{5} - \frac{1}{4} + (8.1 \times 2.7) \div 0.09$

11. Simplify: $\frac{-4}{8} + \frac{7}{13} + 9$

12.Verify: $\frac{3}{5} \times (\frac{-1}{7} - \frac{5}{14}) = (\frac{3}{5} \times \frac{-1}{7}) - (\frac{3}{5} \times \frac{5}{14})$

13.Divide the sum of $\frac{5}{21}$ and $\frac{4}{7}$ by their difference.

14.For x = $\frac{3}{4}$ and y = $\frac{-9}{8}$, insert a rational number between $(x - y)^{-1}$ and $x^{-1} - y^{-1}$.

15. Find the value of x- y and y-x for $x = \frac{2}{3}$ and $y = \frac{5}{9}$. Are they same ?

16. Simplify and express the result in standard form. $-4 \times (\frac{7}{3} - \frac{5}{6})$

17.The cost of $2\frac{1}{2}$m of cloth is Rs$78\frac{3}{4}$. Find the cost of cloth per metre.

18.How many pieces each of length $3\frac{3}{4} m$,can be cut from a rope of length 30 metres ?

19.By what rational number should $\frac{-8}{39}$ be multiplied to obtain $\frac{5}{26}$?

20. Show that $\frac{3}{5} \times (\frac{-1}{7} - \frac{5}{14}) = (\frac{3}{5} \times \frac{-1}{7}) - (\frac{3}{5} \times \frac{5}{14})$

21. Verify that $(x-y)^{-1} \neq x^{-1} - y^{-1}$ by taking $x = \frac{-2}{7}$, $y = \frac{4}{7}$

SECTION – D(4 Marks)

1.Raju earns Rs16000 per month. He spends ¼ of his income on food; $\frac{3}{10}$ of the remainder on house rent and 5/ 21of the remainder on education of children. How much money is still left with him?

2. Simplify:(-3/7) × 6/5 + (1/10) ×3/2 – (6/5) × (1/14)

3. If 6/7 x (-3/13)+ (3/26) -(3/13) x(8/7) = (3/26) – (m) x 2, then what is the value of m ?

4. If x=2/3, y=4/5, z=3/4 show that x ÷ (y + z) ≠ (x ÷ y) + (x ÷ z).

5.Simplify and Express the result in a lowest form.

$\frac{2}{5} \times \frac{3}{4} + \frac{1}{25} \times \frac{1}{2} - \frac{2}{10} \times \frac{1}{5}$

6.(a) The product of two numbers is $-\frac{25}{16}$,One number is $-\frac{5}{4}$, Find the other number.

(b) Find reciprocal of $\frac{2}{5} \times \frac{5}{7}$

7.By taking $x = \frac{-2}{3}$, $y = \frac{5}{9}$, $z = \frac{-1}{6}$,verify that $(x + y) \div z = (x \div z) + (y \div z)$

8. By taking $X = \frac{-3}{5}$, $Y = \frac{7}{10}$, $Z = \frac{-7}{4}$

Prove that $X \times (Y+Z) = X \times Y + X \times Z$

9.If 24 pairs of trousers of equal size can be prepared with 54 m of cloth, what length of cloth is required for each pair of trousers?

10.A car is moving at average speed of $36\frac{4}{5}$ Km per hour.What distance will it cover in $7\frac{1}{2}$ hour?

11.The product of two rational numbers is -9 ,If one of the number is -12 .Find the other.

12 .By taking $x = -\frac{5}{8}$,$y = \frac{2}{7}$,$z = -\frac{1}{4}$, verify that $x \div (y - z) \neq (x \div y) - (x \div z)$

CHAPTER-3 RATIONAL NUMBERS AS DECIMALS

SECTION – A(1Marks)

1) 6.4/0.2= _____

a) 3.2 b) 0.32 c) 32 d) 2.3

2) $\frac{7}{800}$ has _____ decimal representation.

a)terminating b)non-terminating c)both a and b d)none of these

3) The decimal representation of $\frac{1}{3}$ is

a) 0.3 b) 0.3 c) 3.33 d) none of these

4.Which is the decimal form of 7/20

a) 0.035 b) 0.35 c) 35 d) 3.5

5. Divide 62.5 ÷ 0.5

a) 125 b) 1.25 c) 12.5 d) 0.125

6.Convert 8/5 in its decimal form.

7.Convert 25/7 into decimal form.

8.Convert 2.4 in the form of p/q.

9. $2.1\overline{253}$ can be expressed as

a)2.125553….. b)2.125333….. c)2.125353…… d)None of these

10. 140× 0.75× 0.01 = ?

a) 140.7500 b) 14000.75 c) 1.05 d) none of these

11. Simplify 5X 0.16 – 0.52 +8.263.

12. Without actual division, determine whether the rational number $\frac{29}{250}$ has either terminating or non- terminating decimal.

13.. Evaluate: 42.7-11-9.025+2.16 .

14. Add : 3.009, 2.59, 16.745 and 0.12 .

15. Divide : 32.768 ÷ 8 .

16. Convert $\frac{129}{25}$ as decimal.

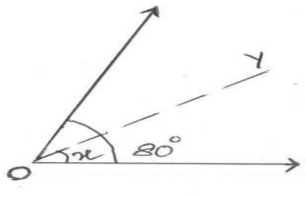
17. Simplify: 3.125 ÷ 0.125 + 0.50

18.Convert $\frac{9}{16}$ as a decimal .

19. Find whether decimal representation $\frac{31}{15}$ is terminating or non – terminating . Give reason .

20. Write two English alphabet having (i) 1 line of symmetry (ii) no line of symmetry

21. i.



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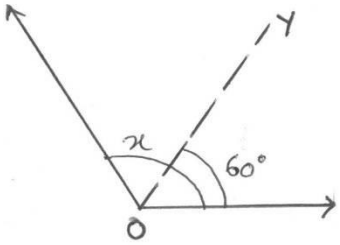


If lines OY represent the line of symmetry of the angles , find X .

22. i)Find the product 0.111× *0.005* ii) Express – 2.56 in the form p/q

23. Without actual division, determine $\frac{99}{800}$ has a terminating decimal representation.

24. Convert $\frac{27}{7}$ into decimal.

25. Express 0.036 as rational number in standard form.

26. Express 3908.78 in the standard form?

SECTION – B(2Marks)

1.Find the decimal representation of the following rational numbers.

(i) $\frac{-37}{5}$ (ii) $\frac{18}{125}$

2.Add 16.1+12.05+7.201

3.Subtract 15.012 from 37.01

4.Multiply 2.2 by 3.5

5.Divide 42.042 by 6

6. Simplify 5X 0.16 – 0.52 +8.263.

7. Evaluate: 42.7-11-9.025+2.16

8. Add : 3.009, 2.59, 16.745 and 0.12

9. Divide : 32.768 ÷ 8

10. A car covers a distance of 89.1 km in 2.2 hours . What is the average distance covered by the car in 1 hour ?

11. Evaluate : $\frac{2}{5} - \frac{1}{4}$ + (8.1 x 2.7) ÷ 0.09

12.Compute the following (i) (75.05 ÷0.05) x 0.001 +2.351

SECTION – C(3Marks)

1. Find: a. 53.7 ÷ 3 b. 25.6 ÷ 8 c. 82.44 ÷ 6

2.Evalute the following: (i)24.12+1.2-0.001 (ii)5×15+5×1.5-0.25×8

3.Without actual division,determine which of the following rational numbers have a terminating decimal representation ?

(i)27/125 (ii)25/28 (iii)8/50

4.Add: 3.005;0.539;15.214

5.Simplify and express the result in decimal: $\frac{6}{5} + \frac{1}{2}$ +16

6.Simplify the following expression

42.7– 11– 9.025 + 2.16

7. Simplify:- $\frac{0.144 \div 1.2}{0.016 \div 0.02} + \frac{7}{5} - \frac{21}{8}$

8.44 x (144 ÷ 12) – 0.225 + 3.276

9. Simplify the following expression .

(75.05 ÷0.05)X 0.001 + 2.351

10. Evaluate (16.9+3.2) – (12.03 -7.8)

11. Simplify the following expression : -2.5 +8.639-2.89+8.49

12. Simplify and express the result in standard form :-

$\left(\frac{3}{8} - \frac{7}{40} \right) \div \frac{2}{40}$

13. Simplify and express the result as a rational number in its lowest form : $\frac{1}{4} + 1.25 \div 0.05 - \frac{1}{5}$

14.Simplify: $\frac{1}{2} + \frac{1}{5} + 6.25 \div 0.25$

15. Rama planted $\frac{1}{2}$ of his field by mango trees, $\frac{1}{4}$ of his field by guava trees and $\frac{1}{8}$ of his field banana plants and the rest by rose plants. What part of the field is planted with rose plants ? Express it as a decimal number also.
What value do you depict from this ? (any two points)

16.Simplify : (156.25 ÷ 0.025) x 0.02 – 5.2

SECTION – D(4Marks)

1. Mrs. Sunita uses 3.204 litres of oil to make 9 dishes of equal proportion. How much oil was used for each dish?

2. Simplify $\frac{0.4\times.04\times0.005}{0.1\times10\times0.001} - \frac{1}{2} + \frac{1}{5}$

3.Simplify and express the result as rational number in its lowest form

4.125 ÷ 5 + 1.175 – 0.50

4.Simplify: (85.05÷0.05)×1000+2.335

5.Simplify: 3.2+5.42-26.002-1.42+25×0.4

6. Simplify and express in it's lowest form: $\frac{0.144 \div 1.2}{0.016 \div 0.02} - \frac{3}{8}$

7. Simplify and express the result as a rational number in its lowest terms

$\frac{2}{5} - \frac{1}{8} + (8.1 \times 2.7) \div \overline{0.091}$

8. Simplify (156.25 ÷ 0.025) × 0.02 – 5.2

9.Simplify & express the result as $\frac{p}{q}$ form: (0.4 x 0.04 x 0.005) ÷ (0.1 x 10 x 0.001)$-\frac{1}{2}+\frac{1}{5}$

10. Convert $\frac{1}{3}$ into decimal form.

11. Simplify and express in it's lowest form
$\frac{0.144 \div 1.2}{0.016 \div 0.02} - \frac{3}{8}$

12. Simplify and express the result as a rational in its lowest form .

$$\frac{0.4 \times 0.04 \times 0.005}{0.1 \times 10 \times 0.001}$$

13. Simplify:-$\frac{0.4 \times 0.004 \times 0.005}{0.1 \times 10 \times 0.001} - \frac{1}{2} + \frac{1}{5}$

14. Simplify and express the result as a rational number in its lowest terms

2/5 – 1/8 + (8.1 ×2.7) ÷ 0.09

15.Simplify the following expressions.

a) $-5.7+13.20-15.009+0.02$

b) $\frac{2}{5}\times\frac{3}{4}+\frac{1}{25}\times\frac{1}{2}-\frac{2}{10}\times\frac{1}{5}$

CHAPTER-4 EXPONENTS AND POWERS

SECTION – A(1 Marks)

1.Write the exponential form of $(-8)\times(-8)\times(-8)\times(-8)$

2. Find the value of $3^4 \times (-1)^{173}$.

3. Express 8/125 in exponential form.

4.What is the reciprocal of $(\frac{-5}{7})^2$.

5. Write the 4.83×10^7 in the usual form.

6.Evaluate $5^0\times(3^0+4^0)$

7.Find the reciprocal of $-(-\frac{8}{13})^{99}$

8.Simplify $-(\frac{2}{3})^2 \times -(\frac{2}{3})^3$

9.Write 0.00000255 in scientific form.

10. Write 2.7×10^3 in the usual form.

11. What is the value of$(6^{-1}-8^{-1})^{-1}$?

SECTION – B(2 Marks)

1. Express $(11/13)^2$ in the form of p/q.

2.Find the reciprocal of $-(5/4)^3$.

3.Simplify and express the result in exponential form $\left(\frac{-2}{3}\right)^5 \times \left(\frac{-2}{3}\right)^4$.

4. Simplify and express the result in exponential form $\left(\frac{-12}{13}\right)^{15} \div \left(\frac{-12}{13}\right)^{12}$.

5. Simplify $\left[\left(\frac{-1}{3}\right)^0 \times \left(\frac{-1}{3}\right)^4\right]^5$.

6.Find the value of x if $(\frac{3}{7})^{-2} = (\frac{3}{7})^{2x}$.

7.Write in usual form $11.2 \times (10)^{-7}$.

8.If $\frac{p}{q} = (\frac{2}{3})^2 \times (\frac{1}{3})^{---4}$, find the value of$(\frac{p}{q})^{-2}$.

9.Simplify: $(4^5 \div 4^8) \times 64$

10.Evaluate: $(2^4 \times 2^5) \div 2^8$

11. Simplify: $\frac{16 \times 2^{n+1} - 4 \times 2^n}{16 \times 2^{n+2} - 2 \times 2^{n+2}}$

12. Find the value of n so that : $\left(\frac{2}{3}\right)^{10} \times \left\{\left(\frac{3}{2}\right)^2\right\}^5 = \left(\frac{2}{3}\right)^{2n-2}$

13. By what number should $\left(\frac{-2}{3}\right)^3$ be divided so that the quotient may be equal $\left(\frac{9}{4}\right)^{-2}$?

14. If $\frac{p}{q} = \left(\frac{2}{3}\right)^2 \times \left(\frac{1}{3}\right)^{-4}$, find the value of $\left(\frac{p}{q}\right)^{-2}$.

15. Express $\frac{1.2 \times 10^3}{2.4 \times 10^{-4}}$ in the form of $k \times 10^n$.

16. Find the reciprocal of $\frac{\left(-\frac{3}{2}\right)^{-1} \times \left(\frac{2}{3}\right)^2}{\left(\frac{2}{3}\right)^{-1} \div \left(\frac{3}{2}\right)}$.

SECTION – C(3 Marks)

1. Simplify using laws of exponents: $11^0 \times 12^0 + 13^0 \times 14^0 + 15^0 \times 16^0$.

2.Evaluate: $\frac{\left(\frac{1}{5}\right)^5}{\left(\frac{1}{5}\right)^3} - \frac{\left(\frac{1}{5}\right)^6}{\left(\frac{1}{5}\right)^4}$.

3.Find 'x' if $\left(\frac{2}{5}\right)^{2x} \times \left(\frac{2}{5}\right)^4 = \left(\frac{2}{5}\right)^6$.

4.By what number should $(-4)^3$ be multiplied so that the product may be equal to $(-2)^7$.

5. By what number should $(-13)^3$ be devided so that the quotient may be equal to $(-13)^2$.

6.By what number should $(-3)^{-2}$ be multiplied so that the product may be equal to 9?

7.By what number should $(-12)^{-1}$ be divided so that the quotient is equal to $(-4)^{-1}$.?

8.Find the value of x so that $(\frac{5}{7})^2 \div (\frac{5}{7})^{3x+1} = (\frac{5}{7})^4$.

9.Find the value of $(\frac{x}{y})^a \times (\frac{y}{z})^a \times (\frac{z}{x})^a$.

10.Find the value of $(\frac{x^a}{x^b}) \times (\frac{x^b}{x^c}) \times (\frac{x^c}{x^a})$.

SECTION – D(4 Marks)

1.If $x = \left(\frac{4}{5}\right)^{-3} \div \left(\frac{4}{5}\right)^{-5}$ then find x^3.

2.Simplify : $\frac{\left(-\frac{1}{2}\right)^5}{\left(-\frac{1}{2}\right)^3}+\frac{\left(-\frac{1}{2}\right)^6}{\left(-\frac{1}{2}\right)^4}$.

3.Find the following numbers in the form $k\times 10^n$ where $1\le k\le 10$ and n is an integer.

(i)0.00000052 (ii) $(5\times 10^2)\times(8\times 10^3)$

4.Find x if $\left(\frac{-5}{12}\right)^{-3}\times\left(\frac{-5}{12}\right)^{5x}=\left[\left(\frac{-5}{12}\right)^2\right]^6$

5.Find the reciprocal of (i) $\left(\frac{4}{5}\times\frac{-2}{7}\right)^{-2}$ (ii) $\left(\frac{-1}{2}\right)^{-4}\div\left(\frac{1}{8}\right)^2$

6.The speed of light in vaccum is 3 x10^8m/s. Sunlight takes about 8 minutes to reach the earth.Express the distance of sun from earth in standard form.

CHAPTER-5 APPLICATION OF PERCENTAGE

SECTION – A(1 Marks)

1. If the cost price of a bag is Rs. 575 and the selling price is Rs.625, then there is a profit of Rs.

(A) 50 (B) 575 (C) 625 (D) none of these

2. If a man makes a profit of Rs.25 on a purchase of Rs.250, then profit% is

(A) 25 (B) 10 (C) 250 (D) 225

3. Gain or loss percent is always calculated on

(A) cost price (B) selling price (C) gain (D) loss

4.Converrt 4:5 into per cents.

5.Find 45% of 500Kg.

6.105% in percentage.

7.What per cent of 80 m is 24 m.

8.Find 0.8 % of 45.

9.Find 12% of 50+5% of 120.

10. If 25% of x is 100, then x =_____?

11. $1\frac{1}{4}$% as a fraction is _____?

12. If x% of 75 is 12 , then x= _____?

13.Write each of the following as percent $\frac{7}{25}$.

14.Convert the following percentage to fraction and ratio :25%

15.Express the following as decimal fraction:27%

16.Converting fraction into percentage: $\frac{25}{100}$.

17.Converting percentage into fraction: 13%

18.Profit = S.P- ____

19.S.P=C.P.+ _____

20.C.P= S.P.- ____

21. Fill in the blanks: i)_____%= $\frac{gain}{c.p.}$ × 100

ii) Loss%= $\frac{loss}{c.p.}$ ×____

SECTION – B(2 Marks)

1. Sanjay bought a bicycle for Rs. 5,000. He sold it for Rs.600 less after two years. Find the selling price and the loss percent.

2. A fruit seller bought 8 boxes of grapes at Rs.150 each. One box was damaged. He sold the remaining boxes at Rs.190 each. Find the profit or loss percent.

3.Find the simple interest on Rs.5000 for 6 years at the rate of 2% per annum.

4. What percent of 45 minutes is 15 minutes ?

5. In a class of 80 students , 45 % are girls . How many of the students are boys ?

6.If X % of Y is 13X,then find the value of Y.

7.Find 12½ %of 3½% of Rs 256.

8.Radhika spend Rs 350 every month. If this is 70% of her pocket money, find her pocket money.

9. Find S.I on Rs 500 for 5 year at 2% p.a.

10.If 40 % of 70 is X more than 30 % of 8, then find X.

11. Find S.I on Rs 500 for 5 year at 2% p.a.

12.The selling price of 10 articles is the same as the cost price of 11 articles, find gain percent .

13. Bashir bought oranges at Rs. 5 a dozen. He had to sell them at a loss of 4%. Find the selling price of one orange.

14. In a co-educational school , 45% of the total students are girls. If there are 440 boys in the school,find the number of girls in the school.

15. A farmer , for purchasing seeds and fertilizers , borrowed a loan from a co-operative bank. After 2 years he paid Rs. 5434 and settled the account. If the rate of simple interest is $2\frac{1}{4}$% p.a.,what Sum did he borrow?

16. On increasing the salary of a man by 25% , it becomes Rs. 20,000. What was his original salary?

17. Rohit scored 180 marks in the first test and 150 marks in the second test. The maximum marks In each test is 200. What is the decrease in his performance in percentage ?

18.Write each of the following as percent:-

i) $\frac{5}{8}$ ii) 11:80

19. convert the following percentage to fraction and ratios.

i) 125% ii) 0.3%

20. Express the following as decimal fractions.

i)7.5% ii)$\frac{1}{8}$%

21.Find 12% of 1200.

22.If 23% of x is 46,then find x.

23.Find S.P when C.P=650,gain=8% .

24.If C.P= Rs. 12 and Loss=5% find S.P.

25.Find S.P when C.P=Rs. 500,gain=7% .

SECTION – C(3 Marks)

1.Sandhy's height increased by 20% last year and by 15% this year. What is the total percent increase in 2 years?

2.90 % of total student were present. Find the percentage of student absent if total students were 1200 ?

3.Express as Fraction 3313% ; 6623%; 75%

4.At what rate per cent per annum will a sum of money double itself in five years?

5. To pass an examination 48 % of marks are needed. Rahul gets 168 marks and fail by 36 marks What is the maximum marks of Examination.

6.At what rate percent will Rs 1500 amount to Rs2400 in 4 year.

7.In what time will a sum of money double its elf at 15% p.a.

8.In a school , there are 50 teachers.30 % of them are men and the rest of are woman. If 60 % of the male teachers are married. Find the no. of married male teacher's.

9.Find x if 48 % of 480 +25 % of 250-x=200.

10.By selling an article for Rs 475,rahul lost 5% ,find the c.p. of the article.

11.Write each of the following as percentage:-

i)111:125 ii)$\frac{151}{160}$

12.Convert the following into percentage and ratios:-

i)0.25% ii)125%

13.Express the following as decimal fraction:-

i)32% ii)6.3%

14.If C.P=Rs.1000 and gain = 7%, S.P=?

15. An article was bought for Rs.2000 and sold for Rs. 2200.Find the gain and gain%.

16.A cycle was purchased for Rs.1600 and sold for Rs.1400.Find the loss and loss%.

17. If the C.P of 6 articles is equal to the s.p of 4 articles, find the gain percent.

18.If a person sells an article for Rs.360, gaining $\frac{1}{5}$ th of its C.P.Find the gain%.

SECTION – D(4 Marks)

1. In a class, section A has 42 boys out of total 75 students, section B has 60% girls in total strength of 80 and section C has two third boys among 45 students. Find the aggregate percentage of boys.

2. An alloy consists of 30% copper and 40% zinc, and the remaining is nickel. Find the amount of nickel in 20 kilograms of the alloy.

3. The population of a town is 32000. The growth rate of population is 5%What

will be the population of town after 3 years?

4. After allowing 20% discount to the customer, a dealer still gains 20% . Find the

marked price of the electric fan which costs him Rs. 1600.

5.A man sold two radios at Rs 924 each. On one he gain 20% and the other he loss 20%. How much does he gain or lose in the whole transaction. Also find the gain or loss percent in the whole transaction.

6.A man sold two bed sheet at rs 600 each. On one he gain 20% and on the other he loss 25 %,how much does he gain or loss in the whole transaction.

7.A man buys 5 dozen egg at Rs 36 per dozen out of which 5 % got broken, he sold the remaining eggs for Rs 48 per dozen. What was his total gain?

8.At what rate percent per annum will a sum of money double itself in 8 years?

9. If 40 % of 70 is X more than 30 % of 8, then find X.

10. An alloy of tin and copper consist of 24parts of tin and 136 parts of copper.Find the percentage of copper in alloy.

11.The price of sugar goes up by 20%.By how much percent must a house wife reduce her consumption so that the expenditure does not increase?

12.Malvika gets 98 marks in her exams.This amounts to 56% of the total marks. What are the maximum marks.

13.A nursery has 5000 plants. 5% of the plants are roses and 1%are mango plants. What is the total number of other trees?

14.Bhagyashree has to pay 4% sales tax in addition to the price of a certain article .Find the price of her article. If she pays Rs60 in all.

15.Toffees are bought at the rate of 6 for a rupee and sold at 5 for a rupee. Find the gain percent.

16. Find S.P when i) C.P=Rs.500,gain=7% ii) C.P=1200,loss=5%

17.By selling a table for Rs.330,a trader gains10%.Find the cost price of the table.

18. If a man were to sell his hand cart for Rs.720,he would lose 25%.What must he sell for to gain25%?

19.Mohan bought 20 dinning table for Rs.12000 and sold them at a profit equal to the S.P of 4 dinning tables. Find the S.P of 1 table.

CHAPTER-6 ALGEBRAIC EXPRESSION

SECTION – A(1 MARKS)

1.The value which satisfies an equation is called its _____.

2.A combination of constants and variables connected by the signs of the fundamental operations is called _____.

3. Any expression with one or more terms is called a _____.

4. _____ should be subtracted from $3x^3 - 1$ to get x^3

5. 4xy + 2xy is a _____ .(Bionomial, Trinomial, Monomial)

6. Find the area of a rectangle whose sides are 2a and 3a.

(a) 6a sq unit (b)$5a^2$ sq uint (c) $3a^2$ sq uint (d) $6a^2$ sq uint

7. x (y – z) + y(z –x) + z(x-y) is equal to

(a) xyz (b) 0 (c) x+y+z (d) None

8. If a letter has no coefficient written before it, the coefficient____ is understood.

a) 0 b) 1 c) -1 d) none of these

9. The H.C.F of $9x^3y$ & $18x^2y^3$ is ……

a) $3x^2y$ b) $9xy^2$ c) $9x^2y^2$ d) $9x^2y$

10. In xyz – 1 how many terms are there

a) 1 b) 4 c) 2 d) 3

11 .With what number should we divide $\frac{-3}{7}$, so that the quotient be $\frac{21}{5}$.

12.If m=2,then the value of 9-5m is

a)0 b)1 c)-1 d)2

13.x^2-y^2 is same as

a)y^2-x^2 b)x^2+y^2 c)-(y^2-x^2) d)None of these

14. Value of "p" if the expression $z^2 + 3z – p=3$ for z=2 is _____

15.$(3p^2 – 14\ pq + 2r) – (14pq + 3p^2 + 2r^2)$ is a –

16. The H.C.F of the terms of the expression $18x^3y^2 + 36\ xy^4 – 24\ x^2y^2$ is 5.In xyz – 1 how many terms are there.

17.With what number should we divide $\frac{-3}{7}$, so that the quotient be $\frac{21}{5}$.

18. What is the coefficient of y^2 in $-\frac{5}{3}y^2$?

19. The sum of two consecutive whole numbers is 43. What is the smaller number?

20. How much is $-2x^2+ x + 1$ less than x^2+2x-3 ?

21. The product of the coefficients of x^2 in $-\frac{4}{3}ax^2+\frac{1}{4}bx^2+3cx^2$ is _____?

22. Find the H.C.F of $21x^2y^7$ and $35x^5y^5$.

23. What is the degree of 3x + 2?

24.In xyz – 1 how many terms are there?

25. The co-efficent of y^2 in $-35x^3\ y^2$

(i) -35 (ii) $-35x^3$ (iii) $-35x^2y^2$ (iv) $-35x^3$y

SECTION –B(2 MARKS)

1. Simplify $-6\ x^2 (xy +2y^2) - 3y^2 (2x^2 +y)$.

2. Factorise : $1 + x + xy + x^2y$

3.Multiply : $(9\ a^2\ b) \times (– 2/3\ ab^2) \times (– 5\ bc^2)$

4. Find the product of $(\frac{2}{5}a + \frac{1}{7}b) (3a + 4b – 2)$

5. Factorise : $1+ x + xy + x^2y$

6. Find the sum of $2x^2 - 3y^2; 9x^2 + 6y^2; -3x^2 -5y^2$.

7. Subtract $(a^2 + b^2 + 2ab)$ from $(a^2 + b^2 – 2ab)$

8.Find the product of $12x^2y^3z^6$ and $-3\ x^5y^2z$.

9.Find the product of (2a+3b) and (-3a+4b)

10.Find the H.C.F of $14a^2b^3c^5$ and $21\ a^3b^3c^2$.

11. Find the product : $\left(\frac{5}{4}x^2 - \frac{3}{2}xy\right) (1 + y + x^2)$.

12. Find the area of a rectangle whose sides are '2p' and 'r'.

13. What should be subtracted from $4m^2 - 3n + p^2$ to get $2m^2 - 5n$.

14.Add : –4x + 3y –5z and –y –3x +2z .

15. Find the area of a rectangle whose breadth is b and length is square of breadth.

16. Subtract $x^2 - x + 1$ from $2x^2 + x - 1$

17.Factorise;-$-x^2y - xy$.

18.Factorise:-(y-x)a+(x-y)b

19.Factorise:-($2x^2$+5x)

20.Factorise:-$a^2b^3 - a^3b^2$

21. Factorise: $9a^2$-$27ab^2$

22.Factorise: 1 + x + xy + x^2y

23.Find the HCF and factorise $8y^3 + 8x^3$.

24. Simplify: -6 x^2 (xy +2y^2) - 3y^2 (2x^2 +y).

25. Factorise : 1 + x + xy + x^2y .

26.Multiply : (9 a² b) × ($-\frac{2}{5}$ ab²) × (– 5 bc²).

27. Find the product of ($\frac{2}{5}$a + $\frac{1}{7}$ b) (3a + 4b – 2)

28.Factorise : 1+ x + xy + x^2y.

29. What should be added to xy + yz + zx to get - xy – yz – zx .

30. Find the product of $(5x^2y)\times\left(-\frac{3}{5}y^2z\right)\times(2xz^2)$. Also verify the result for x = 1, y = -1 ,and z = 2

31. Find the area of a rectangle whose breadth is b and length is square of breadth .

32. Simplify $p^2(2pq + q^3) - 2q^2(p^2q + 5)$.

33. Simplify $(a^2 - b^2)(a^2 - b^2)$ - $(a^2 + b^2)(a^2 + b^2)$.

34. Factorise the following expression: (i) $(a - b)^2 + (a - b)$

(ii) a^2 + 2a + ab + 2b

35. Solve the equation : 2(x – 2) – 3(x – 3) = 5 (x – 5) + 4(x – 8)

SECTION –C(3 MARKS)

1.Find the area of a rectangle whose length is twice its breadth where ,breadth is 5x.

2.Find the product of 7p^2(5p-2pq) and verify the result when p=1,q=2.

3.Simplify: (i) $(a^2+b^2)(a^2+b^2)+(a^2-b^2)(a^2-b^2)$

(ii)$5x^2 – 2x + 7 – 9 + 7x - 3x^2 + 4x^2 – x + 1$

4.Factorise: (i)ax+ay+cy+cx (ii)$(a+b)^2-(a+b)$

5.By how much does the expression $23x^2+32x+2$ exceed the expression $15x+11x^2-1$.

6. Factorise: axy + bcxy - az - bcz

7.Find the product & verify m = -2, n = 0; $(m^3 + n^3)(2m – 3n)$

8. Simplify: (2x -3y) (3x + y) + (x +2y) (x-y)

9.Verify: $(x – y)^{-1} \neq x^{-1} – y^{-1}$; for x = $-\frac{2}{7}$; y = $\frac{4}{7}$.

10. Simplify and verify the result: ($x^3y – y^2$) ($x^3 y + y^2$); for x=1 and y= – 2

11. Factorise : 4 (p+q) (3a – b) – 6 (p+q) (2b– 3a)

12.Find HCF of the terms:(a) $15a^3$, $-45a^2$, 150a (b) $x^4y – 3x^2y^2 – 6xy^3$

13. Simplify: (a + 2b) (a – b) + (2a – b) (a + b)

14.Simplify and verify the result for the given values:(2p + 3q) ($4p^2$ + 12 pq + $9q^2$) ; p = $\frac{1}{2}$,q = $\frac{1}{3}$

15. Simplify: p^2 (2pq + q3) –$2q^2$(p^2q+5) .

16. Find the HCF of the given term in the algebraic expression and factorize :$7x^3y$ -$14x^2y$+$28x^2y^3$.

17. Multiply and verify the results at X= 1 and Y = 2 , (x + y) ($x^2 - xy + y^2$)

18.Simplify the following: $(1^2 + 2^2)(3^2 + 4^2) - (1^2 - 2^2)(3^2 - 4^2)$.

19.Express 1.5a^2(10 ab – 4b^2) as a binomial & then evaluate at a = – 2 , b = 3.

20. Factorize a(a+b) +8a+8b.

21.The perimeter of a triangle is (x^2y +10) units. One of the side is (x^2y – 4) units & another side is (3 –2x^2y) units. Find the third side.

22.The perimeter of a triangle is (x^2y +10) units. One of the side is (x^2y – 4) units & another side is (3 –2x^2y) units. Find the third side.

23.Find the product: (5x + 3) (2x + 4).

24.Simplify: p^2 (2pq + q^3) – $2q^2$ (p^2q +5).

25.Factorise;-$36x^2$-x^3y =---------

SECTION –D(4 MARKS)

1. Find the value of the given expressions when a=0, b=-1, c=1

i) a^2 + 2ab +b^3 ii) 3ab + 3ac + c^2

2.Find the product of (-2xyz) $\left(\frac{2}{3}xy\right)\left(\frac{1}{5}z\right)$ and verify the result for x=1,y=2,z= -1.

3.Find H.C.F of the terms and factorise :$15x^3y$-$5x^2y^2$-$10xy^2$.

4.Simplify :$3x^2(3y^2+2)-x(x-2xy^2)+y(2x^2y-2y)$.

5.Simplify and express the result for the given values:$(m^2+mn+n^2)(m+n)$;m=3,n=2

6.Simplify $3x^2(3y^2+2) - x(x-2xy^2) + y(2x^2y-2y)$.

7.Factorise : (i) $a^2 + bc + ac + ab$ (ii) $3a(p-2q) - b(p-2q)$

8. a) Factorise: $ab^2 - bc^2 - ab + c^2$ b) Simplify :$(y^2-7y+4)(3y^2-2+y)$

9. Simplify : $3p^2(3q^2+2) - p(p-2q^2) + q(2p^2q - 2q)$ and verify the result for p = 1 and q= -1.

10. Find the product & verify: $(\frac{5}{4}x^2 - \frac{3}{2}xy)(x + y + y^2)$ for x= -2 y =3.

11. Simplify : (a) $(a^2 + b^2)(a^2 + b^2) - (a^2 - b^2)(a^2 - b^2)$

(b) Find the HCF of $2x^3y^2$, $10x^2y^2$, $14x^2$

12. Simplify: $-6x^2(xy+2y^2) - 3y^2(2x^2+y)$.

13. Find the product & verify m = -2, n = 0;$(m^3 + n^3)(2m - 3n)$

14. Factorise: i) $ax + ay - bx - by$. ii) $(x+1)^2 - 4(x+1)$

15. Express $1.5a^2(10ab - 4b^2)$ as a binomial and then evaluate it for a=-2, b=3.

CHAPTER-7 LINEAR EQUATION IN ONE VARIABLE

SECTION – A(1 MARKS)

1.Write the following statements in the form of equations.

one third of a number plus 8 is 29.

2. Solve the equation: y + 8=− 8

3. Solve the equation:7y + 5 = 19

4.Set up an equation: If you subtract 7 from 5 times a number is 28.

5. Solve the equation: ax+b=0.

6. If. $\frac{x}{-2} = -3$,find the value of x ?

7. Twice a number when increased by 7 gives 25. What is the number?

8. If x=4 find (2x-3).

9. 2x-1=0 find x=?

10. If x=1 ,then 2x-1=?

11. $2\frac{1}{3}$ - x =2,then find x=?

12.(x-1)(x+1)=0then x=?

SECTION – B(2 MARKS)

1.Solve: $5x-2=3x-4$

2. Solve: $x=2x-\frac{8}{5}$

3. Solve: $2x+\frac{1}{3}=0$

4. Solve: $\frac{5}{4}x+7=12$

5. Solve: $x+\frac{1}{5}=\frac{5}{8}$

6.Solve: $4(y-2)=5(2y+2)$

7. When five is added to a number we get 35.Find the number.

8. Solve: $2z-(7-5z)-21=0$

9. Solve: $3(y-1)=2(2y-6)$

10.If 8 less than three times a nymber is 85,then find the number.

SECTION – C(3 MARKS)

1.Anmol's mother is 4 years more than 3times Anmol's age. Find Anmol's age if mother is 40 years old.

2.The three angles of a triangle are in the ratio 2:3:5. Find the measure of each angle.

3.Hari and Harry's age are in the ratio of 5:7.Four years later the ratio of their ages will be 3:4.Find theirpresent ages.

4.Length of a rectangle is two times its width.If the perimeter is 72m,find the length of the rectangle.

5.In a class of 56 students,number of boys is $\frac{2}{5}$ of the girls.Find the number of boys and girls.

6. Find the value of x. Solve and verify your answer.

a)$x-2\frac{1}{3}=4\frac{1}{2}$.

b)$y+2\frac{2}{3}=5\frac{1}{6}$

c) $\frac{5}{3}x+\frac{2}{5}=1$

d)$\frac{1}{2}+\frac{x}{8}=\frac{1}{8}$

e)$2(x-2)+3(4x-1)=0$

SECTION – D(4 MARKS)

1.The sum of three consecutive numbers is 75,then find the numbers.

2.A labourers is engaged for 20 days on the condition that he will receive Rs120 for each day he works and will be fined Rs 10 for each day he is absent.If he receives Rs 1880 in all.For how many days did remain absent.

3.Divide 150 into three parts,such that the second number is five-sixths the first and the third number is four-fifths the second.

4.Two equal sides of triangle are each 5m less than twice the third side.If the perimeter of the triangle is 55m.Find the length of each side.

5.How much pure alcohol must be added to 400ml of a 15% solution to make its strength 32%.

6. Find the value of x. Verify the solution.

a) $\frac{3}{4} - \frac{5x}{6} = \frac{9}{11}$

b) $\frac{7}{5} - 15x = -\frac{1}{10}$

c) $-x + \frac{3}{8} = \frac{4}{9}$

d) $\frac{2x-1}{3} - \frac{6x+2}{5} = \frac{1}{3}$

e) $\frac{2x}{3} - \frac{3x}{8} = \frac{7}{12}$

CHAPTER-8 TRIANGLES AND ITS PROPERTIES

SECTION – A(1 MARKS)

1.A triangle can have _____obtuse angle and _____acute angles.

2.The perpendicular line drawn from a vertex of a triangle to its _____side is called an altitude of the triangle.

3. In an _____ triangle, the median and altitude are given by the same line segment.

4. Which is the longest side of triangle ABC which is right angled at A.

a)AC b) BC c)AB d) None of these

5.If in a triangle ABC, AB = 4 cm, CA = 7 cm and BC = 5 cm. Can that triangle be valid?

(a) Yes (b) No (c) Might be (d) Can't say

6. The centroid of a triangle divides each median in the ratio _____?

7. The point of concurrence of the altitudes of a triangle is called its _____?

8. The _____ of a triangle is equidistant from its sides.

9.The circumcenter of a triangle is equidistant from its _____.

SECTION – B(2 MARKS)

1. One of the acute angles of a right angled triangle is 35^o. Find the measure of the other acute angle of the triangle.

2. Find the measure of each angle of an equilateral triangle.

3. Is the triangle possible, if sides of the triangle are 5 cm,12cm and 6cm? Give reason in support of your answer.

4. Find the supplement of the complement of the angle 35˚.

5.Check whether (2,8,10) is a Pythagorean triplet or not ?

6. In Δ ABC, <A=35˚,<B=65˚,find measure of <C.

7.Two angle of a triangle are equal and the third angle measure 70˚.find the measure of each of the unknown angle.

8. The vertical angle of an isosceles triangle is 100˚,find the base angles.

9.What is the point of concurrence of angle bisector of a triangle called and where does it lie?

10. In a triangle ABC, the measure of angle A is 40° less than the measure of angle B and 50° less than that of angle C. Find the measure of ∠A .

SECTION – C(3 MARKS)

1. If one angle of a triangle is 100^o and the other angles are in the ratio of 2:3, find the angles.

2.Find the lengths of the hypotenuses of the triangles whose sides are given

i) 3 cm, 4 cm ii) 5 cm, 12 cm

3.The three angles of a triangle are in the ratio 1:2:3. Find all the angles of the given triangle.

4.In a triangle one of its exterior angle is 150˚ and one of its interior opposite angle is twice the other interior opposite angle,so find all the angles of the triangle.

5.Is there a triangle whose sides have length 10.2cm, 5.8cm and 4.5cm?

6.Find the angle of a triangle which are in the ratio 3:4:5.

7.A man goes 6m in east and then 8m in north direction. Find the distance from the starting point .

8.The width of a rectangle is 50cm and its length is 13cm,what is its perimeter.

9.In an isosceles triangle, the base angle is twice as large as vertex angle ,find the angle of the triangle.

10.The length of two sides of a triangle are 12cm and 15cm .Between what two measure should the length of the third side fall.

11.I have three sides. One of my angle measures 15°. Another has a measure of 60°. What kind of a polygon am I? If I am a triangle, then what kind of triangle am I?

12. Jayanti takes shortest route to her home by walking diagonally across a rectangular park. The park measures 60 metres × 80 metres. How much shorter is the route across the park than the route around its edges?

SECTION – D(4 MARKS)

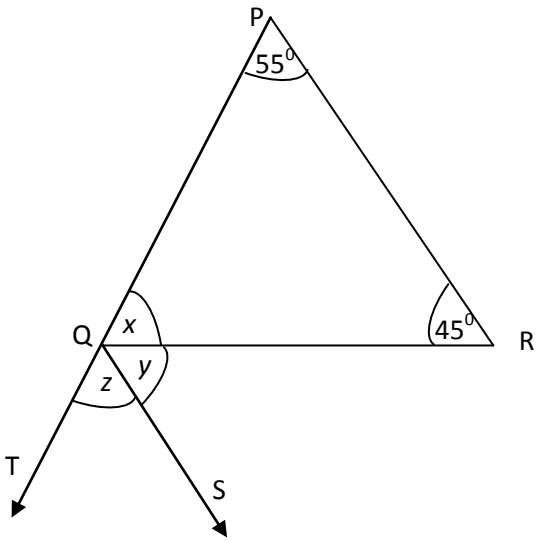
1. An electric pole is 9 m high. A steel wire tied to the top of the pole is affixed at a point on the ground at a distance of 12 m from the foot of the pole. Find the length of the wire.

2. Two angles of a triangle are equal and its third angle is double of the equal angle. Find the measures of the three angles of the triangle.

3. AM is a median of a triangle ABC, then prove that AB + BC + CA > 2AM.

4. A man 160cm tall is at a distance of 600cm from foot of a light source situated at top of pole of height 4.1m high. Find distance between top of a man and source of light?

5. If PR || QS, find the measures of *x*, *y* and *z*.



6.A pole broke at a point but did not separate .Its top touched the ground at a distance of 5cm from its base. If the point where it was broke at a height of 12cm from the ground. What was the total height of the pole?

7. A ladder 17cm long reaches a window which is above the ground on one side of the street keeping its foot at the same point, the ladder is turned to the other side of the street to reach a window of 15cm.find the width of the street.

8.Two pole of height 9cm and 14cm stand upright on a plane ground.If the distance between their top is 13cm then find the ground distance between them.

10.Verify whether the following triplets are Pythagorean or not.

(i) (8,9,10) (ii) (5,12,13)

CHAPTER-9 CONGRUENT TRIANGLES

SECTION – A(1 MARKS)

1.Define congruence of triangles.

2.Give any three real life example for congruent shape.

3. If triangle ABC and triangle DEF are congruent under the correspondence: ABC ↔ FED

Write the parts of triangle ABC that corresponds to BC :

a) DE b) ED c) FD d)DF

4. Among two congruent angles, one has a measure of 70^0. What is the measure of the other angle?

(a) 14˚ (b) 35˚ (c) 70˚ (d) 110˚

5. Δ ABC ≅ΔDEF. If AB = 7cm, what is the length of DE ?

(a) 14cm (b) 16 cm (c) 7cm (d) 18cm

6.If Δ PQR ≅ Δ EFD, which side of ΔPQR equals ED ?

7. Two rectangles are congruent if _____?

8. If PQ = YZ, ∠Q = ∠ Z, and QR = ZX, then Δ PQR ≅ _____by SAS congruence condition.

SECTION – B(2 MARKS)

1.ABCD is a rectangle. AC is a diagonal (Draw a figure). By using SSS Congruence rule Show that

Δ ABC ≅ Δ CDA

2. Write criteria of congruence of a triangle.

3.Say whether the following pairs of triangles are congruent or not using the ASA congruence of triangles.

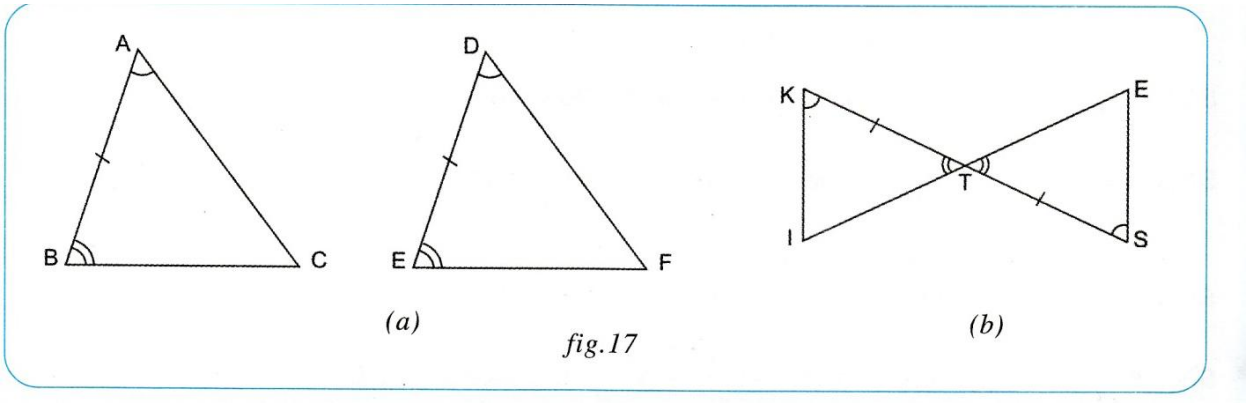
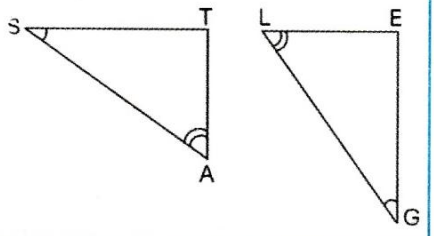


fig.17

5. Study the following pairs of triangles in each case and identify the congruent parts (Use ASA congruence)

	Figures		Side/Angle	Corresponding side/angle
a)		i)	$\hat{TSA}$	
		ii)	$\overline{SA}$	
		iii)	$\hat{TAS}$	

SECTION – C(3 MARKS)

1. ABCD is a rhombus. AC is a diagonal

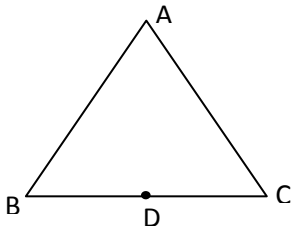
i) Show three pairs of equal parts giving reasons, in Δ ABC and Δ ADC.

ii) Is Δ ABC ≅ Δ ADC ? Give reason.

iii) Is <BAC = <DAC? Give reason.

2.Prove that in an isoscales triangle,the angle opposite to the equal sides are equal.

3. In the given figure AB = AC and D is the midpoint of BC.



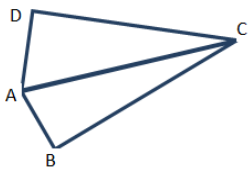
a) Prove that ΔADB≅ ΔADC

b) Is angle B = angle C

Give reasons.

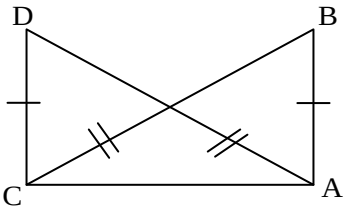
5.In triangle ABC,AB=AC and AD is the bisector of angle A then prove that <B=<C.

6. <B=<D=90^0 , and side BC=DC=6.5cm. Are the two triangles congruent? State the result in symbolic form.

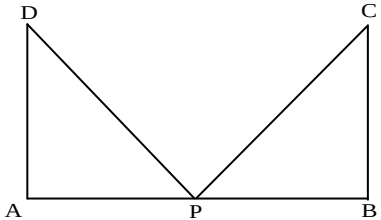


7.Prove that the bisector of the vertical angle of an isosceles triangle is perpendicular to the base.

8.In the figure it is given that
AB=CD and AD = BC
prove that Δ ADC ≅Δ CBA



9. In the figure AD ⊥ AB and BC ⊥ AB.P is midpoint of AB . If AD = BC .Prove that Δ ADP ≅Δ BCP



10. State which of the following pairs of triangles are congruent. If yes,write them in symbolic form.

(a) Δ PQR : PQ = 3.5cm, QR = 4.0 cm, ∠Q = 60° Δ STU : ST = 3.5cm, TU = 4cm, ∠T = 60°
(b) Δ ABC : AB = 4.8 cm, ∠A = 90°, AC = 6.8 cm ΔXYZ : YZ = 6.8 cm, ∠X = 90° ,ZX = 4.8 cm

11.Triangles DEF and LMN are both isosceles with DE = DF and LM = LN, respectively. If DE = LM and EF = MN, then, are the two triangles congruent? Which condition do you use? If ∠ E = 40°, what is the measure of ∠ N ?

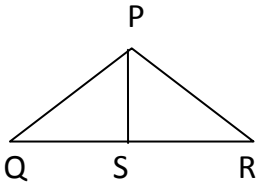
12.If ΔPQR and ΔSQR are both isosceles triangle on a common base QR such that P and S lie on the same side of QR. Are triangles PSQ and PSR congruent? Which condition do you use?

13.Height of a pole is 8m. Find the length of rope tied with its top from a point on the ground at a distance of 6m from its bottom.

14.Without drawing the triangles write all six pairs of equal measures in each of the following pairs of congruent triangles.

(a) ΔSTU ≅ ΔDEF (b)ΔABC ≅ ΔLMN (c)ΔYZX≅ΔPQR (d)ΔXYZ ≅ΔMLN

15. If △ PQR is an isosceles triangle such that PQ = PR , then prove that the altitude PS from P on QR bisects QR.



SECTION – D(4 MARKS)

1. ABC is an isosceles triangle with AB = BC and AD BC.

In Δ ABD and Δ ACD

i) Show three pairs of equal parts giving reasons.

ii) Is Δ ADB≅ Δ ADC ? Give reason.

iii) Is <BAD = <CAD ? Give reason.

2. In the figure PQ and XY bisect each other at O.

i) Show three pairs of equal parts in P

Δ POX and Δ QOY

ii) Is Δ POX≅ Δ QOY Give reasons X Y

iii) Is <X = <Y ? Give reasons

3.In a triangle ABC,P and Q are points on equal sides AB and AC such that AP=AQ. Prove that BQ=CP.

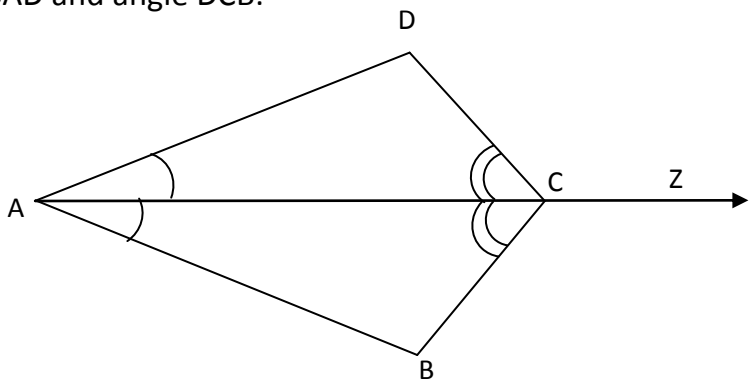
4. In the given figure ray AZ bisects angle BAD and angle DCB:

a) Prove that the ΔBAC ≅ΔDAC

b) Is AB = AD?

c) Is CD = CB?

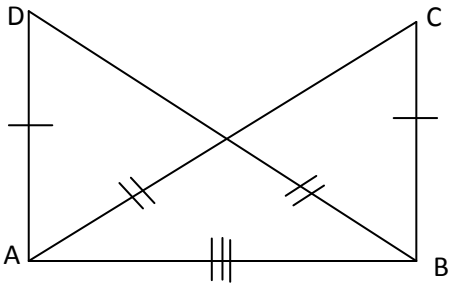
Give reasons



5. If AC = BD, AD = BC which of the following statements is meaningfully written

a) ΔABC ≅ΔABD

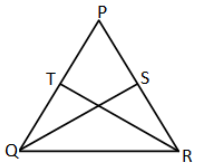
b) ΔABC≅ΔBAD



6.QS and RT are the altitudes of ΔPQR, and QS = RT

(a) Is ΔQRS≅ ΔRQT by RHS congruence condition?

(b) State the three pairs of corresponding parts which make ΔQRS≅ ΔRQT.

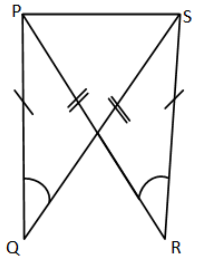


7.In the given figure, PQS and PRS are two triangles on a common base PS such that PQ = SR and PR = SQ.

(i) Is ΔPSQ≅ ΔSPR? By which congruence condition?

(ii) State the three pairs of corresponding parts you have used to answer (i).

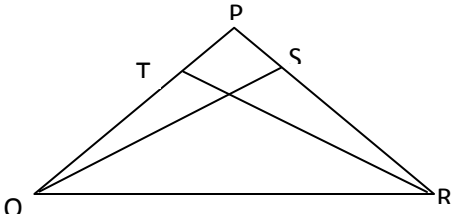
(iii) If ∠SRP = 40^{o}, and ∠ QPS= 110^{o}, find ∠PSQ.



8.QS &RT are the altitudes of triangle PQR & QS = RT

(a) Is triangle QRS congruent triangle RQT by which condition?

(b) State the three pairs of corresponding parts which make triangle QRS congruent triangle RQT.



9.In the given fig., ray AZ bisects $\angle DAB$ as well as $\angle DCB$.

(i) State the three pairs of equal parts in triangles BAC and DAC.
(ii) Is $\Delta BAC \cong \Delta DAC$? Give reasons.
(iii) Is AB = AD? Justify your answer.
(iv) Is CD = CB? Give reasons.

10.In triangle ABC, AB = AC and $AD \perp BC$. Provethat $\angle B = \angle C$.

11.ABC is an isosceles triangle with AB = AC and AD is one of its altitudes.

(i) State the three pairs of equal parts in ΔADB and ΔADC.
(ii) Is $\Delta ADB \cong \Delta ADC$? Why or why not?
(iii) Is $\angle B = \angle C$? Why or why not?
(iv) Is BD = CD? Why or why not?

12. Show that the bisector of the vertical angle of an isosceles triangle bisect the base at right angle.

CHAPTER-10 CONSTRUCTION OF TRIANGLES

SECTION – A(1 MARK)

1.The sum of all the angles of a triangle is _____.

2.An _____ angle is equal to sum of its two interior opposite angles.

3.The sum of two sides of a triangle is _____ than the third side.

4.In triangle ABC, AB = 3 cm, BC = 9 cm and CA = 4 cm.Can triangle ABC be constructed?

(A) Yes (B) No (C) Might be (D) None of these

5. If two angles and one side are given in a triangle, then is it possible to construct a triangle?

(A) No (B) Yes (C) Might be (D) None of these

SECTION – B(2 MARKS)

1. Construct triangle XYZ in which XY = 4.5cm, YZ = 5cm and ZX = 6cm.

2.Is it possible to construct a triangle whose sides are 3cm;6.2cm and 2.6cm.

3.Draw a line segment of 8.5cm and draw its perpendicular bisector.

4.Draw an angle of measure 69˚ and bisect it.

5.Construct the angle 60˚ and bisect it into four equal parts.

SECTION – C(3 MARKS)

1.Draw an equilateral triangle one of whose sides is equal to 6.5cm.

2.Construct a triangle PQR in which PQ=6.6cm,QR=5cm and <PQR=50˚.

3. Construct a triangle ABC in which AB=7cm,<A=70˚ and <B=50˚.

4.Draw a right triangle with hypotenuse of length 10cm and one of it's side is 6cm.

5.How many independent components are required to construct a triangle.

SECTION – D(4 MARKS)

1.Construct a triangle ABC in which AB=6cm,BC=5cm,AC=7cm.Draw a line through 'A' parpedicular to line BC.

2.Construct a triangle PQR in which PQ=7.3cm,QR=6.2cm and <Q=45˚.Also bisect <P and <R.

3.Construct a triangle DEF in which EF=6.5cm,<E=62˚ and <F=65˚.Also construct the perpendicular bisectors of sides DE and DF.

4.Draw a triangle AOB in which OB=7.2cm,<A=55˚,<B=65˚.Also measure the other sides of the triangle.

5.Construct a right triangle ,having hypotenuse of length 10cm and one of the acute angles of measure 60˚.

CHAPTER-11 PERIMETER AND AREA

SECTION – A(1 MARKS)

1. The breadth of a rectangle with length 12cm and perimeter 36cm is:

a) 6cm b) 3cm c) 9cm d) 12cm

2.If each side of a square is 1m, which of the following is its area?

a) 10cm^2 b) 100 cm^2 c) 1000 cm^2 d) 10000 cm^2

3.A square with area 64cm^2 , then perimeter of the square is

a) 32 cm b) 48 cm c) 128 cm d) 64 cm

4. A circle has area which is 100 times the area of another circle .What is the ratio of their circumferences ?

a) 10: 1 b) 1:10 c) 1:1 d) 2:1

5.The area of a parallelogram is 338 m^2 and its height is twice the corresponding base , determine the base.

a) 31 cm b) 13 cm c) 14 cm d) 41 cm

6. The length of the diagonal of a square is *d* units . The area of the square is _____?

a) 'd' unit b) 'd^2' unit c) '$\frac{d^2}{2}$' sq.unit d) None of these

7. If area of an equilateral triangle is $3\sqrt{3}$ cm^2. Then its height is _____?

a) 3 cm b) $\sqrt{3}$ cm c)6 cm d) 2 $\sqrt{3}$ cm

8.The area of a parallelogram is 100 cm^2. If the base is 25 cm, then the corresponding height is,

a) 4 cm b) 6 cm c) 10 cm d) 5 cm

9.The ratio of the circumference and diameter of a circle is _____.

a) π:1 b) 2π:1 c) $\frac{\pi}{2}$:1 d) $\frac{\pi}{4}$:1

10. The area of a circle of circumference *C* is _____ .

a)$\frac{C^2}{4\pi}$ b) $\frac{C^2}{2\pi}$ c)$\frac{C^2}{\pi}$ d) $\frac{4C^2}{\pi}$

11. The area of a circle is 9π $cm^{2.}$. Its circumference is _____ .

a) 6π cm b) 36π cm c) 9π cm d) $36\pi^2$ cm

12. The difference between the circumference and radius of a circle is 37 cm. The area of the circle is

a) 111 cm^2 b) 148 cm^2 c) 154 cm^2 d) 258 cm^2

SECTION – B(2 MARKS)

1. The perimeter of a right triangle is 30cm. Its hypotenuse is 13 cm and base is 5cm. Find the area of the triangle.

2. Find the breadth of the rectangle whose length is 70 cm and perimeter 200 cm.

3.The perimeter of a square garden is 444m. Find the area of the garden.

4. Find the breadth of a rectangular plot of land, if its area is 440m^2 and the length is 22m. Also find its perimeter.

5. Find the area of a circle of radius 15cm.

6.Find the area of a square, the length of whose diagonal is 8 √2 cm.

7. Find the altitude of a triangle whose base is 15cm and area is 120cm^2.

8.The area of a right angled triangle is 40 cm length if one of right measure 8cm.find the length of the other leg.

9.The area of parallelogram is 240cm^2 and its height is 3 dm ,find its base.

10.Find the diameter of a circle whose circumference is 66 cm

11. What will happen to the area of a square when (a) its side is doubled? (b) its side is halved?

SECTION – C(3 MARKS)

1.The sides of rectangle are in the ratio 4:3.Its area is 1728m^2.Find the cost of fencing at Rs.30per m^2.

2.The radius of a circular field is 24.5 m. Find the distance run by a boy in making 4 complete turns.

3.Two plots of land have same perimeter. One is a square of side 60 m, while the other is a rectangle whose breadth is 1.5 dm. Which plot has the greater area and by how much?

4.A room measures 12 m X 9 m. The floor of the room is to be covered by marble tiles measuring 45 cm by 30 cm. How many tiles are needed?

5.A circular piece of thin wire is converted into a square of side 6.25 cm. If there is no loss or gain in its length, find the radius of the circular wire.

6.A wire is in the form of a circle with radius 42cm.It is bent into a square find the side of the square.

7.The radius of wheel of a bus is 0.70 m.How many revolution will it make to cover 22 km?

8.The base of a parallelogram is twice its height the area of the parallelogram is 512 sq cm.Find the base and height.

9.A rectangular garden 30 m long and 25 m wide has a path 2.5m wide running all around inside it find the area of the path.

10. Find the area of a square that can be inscribed in a circle of radius 8cm.

11. A wire is in the shape of a square of side 10 cm. If the wire is rebent into a rectangle of length 12cm, find its breadth. Which encloses more area –the square or the rectangle?

12. The area of a square and a rectangle are equal.If the side of the square is 40 cm and the breadth of the rectangle is 25 cm, find the length of the rectangle. Also, find the perimeter of the rectangle.

13.A rectangle has a length that is 2 less than 3 times the width. If the area of the rectangle is 16 cm^2, find the dimensions.

14.A garden is 90m long and 75m broad. A path 5m wide is to be built out around it. Find the area of the path.

15. A rectangular garden 30 m long and 25 m wide has a path 2.5 m wide running all around inside it.Find the area of the path.

16. The base of a triangular field is three times its altitude. If the cost of watering the field atRs.96 per hectare is Rs. 3600, find the measure of the base and height.

SECTION – D(4 MARKS)

1.The window of a room is 20 m long and 14 m wide. If the carpenter works to put a metallic frame around it which costs Rs. 120 per metre, then how much will the metallic cost?

2.A race track is in the form of a ring whose inner circumference is 220 m and the outer circumference is 440 m. Find the width of the track.

3.The area of a rhombus is equal to area of a triangle whose base and corresponding height are 24.8cm and 16.5cm respectively.If one the diagonal is 22cm,find the other diagonal.

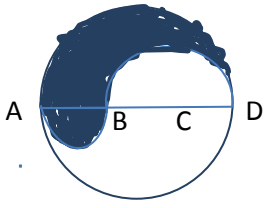
4.A grassy plot is 80 m X 60 m. Two cross paths each 4 m wide are constructed at right angles through the centre of the field, such that each path is parallel to one of the sides of the rectangle. Find the total area used as path.

5.Find all the sides of the triangle whose sides are in the ratio 13:14:15 and perimeter is 84cm.

6. Anand took a wire of length 44 cm and bent it into the shape of a circle. Find the radius of that circle. Also, find its area. If the same wire is bent into the shape of a square, what will be the length of each of its sides? Which figure encloses more area –the circle.

7.A rectangular field has dimensions 84 m by 37 m. Find the cost of fencing its boundary at the cost of Rs 2.50 per metre. What will be the cost of digging the entire field at the cost of Rs 15 per m^2.

8. AD is the diameter of a circle of radius 6cm and AB=BC=CD. Semicircle are drawn with AB and BD as diameters as shown in figures. Find the perimeter and area of the shaded region.



CHAPTER-12 DATA HANDLING

SECTION – A(1 MARKS)

1.Which of the following is the mean of first five natural numbers ?

(i) 2 (ii) 3 (iii) 4 (iv) 5

2.Which of the following is the mode of the data 1,1,2,4,3,2,1,2,2,4 ?

(i) 1 (ii) 2 (iii) 3 (iv) 4

3.Define median of a data.

4.Define mode of a data.

5.What is the formula for calculating mean of a data.

7.find the mean of first ten odd number.

8.Name the three measure of central tendency

9.What is the median of the observation 36,48,62,71,and 84?

10. Find the mode of 0.5;3.5;4.1;3.5;2.5

11.The range of data 14,6,12,17,21,10,4,3 is _____.

12.the mode of the data 23,26,22,29,23,29,26,29,22,23 is _____.

13.The median of the data 40,50,99,68,60,94 is_____.

14.The mean of first five prime number is _____.

15.Define data with an example.

SECTION – B(2 MARKS)

1.Find the mean of first ten even numbers.

2.The mean of 8,4,5,x and 10 is 8.Find the value of x.

3.What is the range of the following data

46,63,25,23,39,42,21,47,68

4. The maximum daily temperatures (in ˚C) for the first week of a month in Delhi are 37,35, 38, 34, 39, 33, 33. Calculate the range and median temperature of the week.

5.Find the range and mode of the following data:

12,15,14,18,15,21,15,17,15,30,14,12,15

6.Find the mean of all even numbers from 1 to 20.

7.The mean of 16 number is 8 if 2 is added to everynumber., find the new means

8.The height of ten boys were given in cm

143,132,149,148,149,151,135,128,139,150

a)What is the range of the data?

b)What is the height of the tallest boy?

9.a)Find the median of the data : 21,15,6,25,18,13,20,9,8,12.

b)If the mean of 26,28,25,x,24,is 27.Find the value of x?

c)Let x,y,z be three observations.What is the mean of these observations.

SECTION – C(3 MARKS)

1.The mean of five numbers is 18.If one number is excluded,their mean is 16.What is excluded number ?

2.The marks scored by a student in five subjects are 80,75,66,51,91.How much should he score in the 6^{th} subject to make his average score 75?

3.Tanya entered the lift on the 20th floor and got out of the lift on 7th floor. How many floors did she travel downwards?

4.If the mean of three observations x+2,x+4,x+6 is 15then find x.

5.Find the mode, mean and median of the scores

4, 5, 6, 7,7, 8, 9, 13, 12, 8, 8, 9, 8, 10, 11

6. Given below are heights of 15 boys of a class measured in cm:128, 144, 146, 143, 136, 142, 138, 129, 140, 152, 144, 140, 150,142, 154.Find

(a)The height of the tallest boy.

(b)The height of the shortest boy.

(c)The median height of the boys.

7.Observe the data and answer the questions that follow:16, 15, 16, 16, 8, 15, 17

(a) Which data value can be put in the data so that the mode remainsthe same?
(b) At least how many and which value(s) must be put in to changethe mode to 15?
(c) What is the least number of data values that must be put in tochange the mode to 17? Name them.

8.The marks in a subject for 12 students are as follows: 31, 37, 35, 38, 42, 23, 17, 18, 35, 25, 35, 29
For the given data, find the (a)Mean (b)Median (c)Mode

9.The heights of 10 girls were measured in cm and the results are as follows:
135, 150, 139, 128, 151, 132, 146, 149, 143, 141.

(i) What is the height of the tallest girl?
(ii) What is the height of the shortest girl?
(iii) What is the mean height of the girls?
(iii) How many girls have heights more than the mean height.

SECTION – D(4 MARKS)

1.An adventure group of 25 people undertook a trek. The following are the times (in min.) taken by them. 50, 42, 65, 54, 48, 75, 42, 38, 50, 46, 55, 68, 70, 45, 78, 50, 63, 40, 68, 50, 72, 60, 65, 50, 48.

(i) The organizers of the trek wanted the refreshment to be ready after 50% of the trekkers had reached the end point. What measure of central tendency should they use? Find the value of that measure.

(ii) What was the time taken by maximum number of people? What measure of central tendency tells you this? Find its value.

(iii) The organizers also wanted to know the average time taken by the group to complete the trek. What measure of central tendency will tell them this? Find its value.

2. The results of pass percentage of Class X and XII in C.B.S.E. examination for 5 years are given in the following table:

Year	2001-02	2002-03	2003-04	2004-05	2005-06
X	90	95	90	80	98
XII	95	80	85	90	95

Draw a double bar-graph to represent the data. Also find the mean of the pass percentage of Class-X and XII respectively for the five years.Which class had a better performance in those five years-class X or XII?

3. The number of hours of television programme watched on Sunday in 40 houses were as follows

9	5	4	3	4	4	9	9	8	9
9	5	10	9	10	10	10	4	9	6
7	9	5	9	9	8	6	7	9	6
6	5	9	9	8	7	8	10	10	9

i)Organise the following numbers in a tabular form.

ii) Estimate the mean, median and mode of this distribution.

iii) What is the range of the data?

4.The heights of 10 girls were measured in cm and the results were as follows.

143, 148, 135, 150, 128, 139, 149, 146, 151, 132

a) What is the height of the tallest girl?

b) What is the height of the shortest girl?

c) What is the range of the data?

d) Find the mean height ?

e) Find the number of girls whose heights are less than the mean height?

5.

Favourite Sport:	Cricket	Basket-Ball	Swimming	Hockey	Athletics
Watching	1240	470	510	423	250
Participating	620	320	320	250	105

Draw a double bar graph choosing appropriate scale. What do you infer from the data?

(i)Which sport is most popular?

(ii) What is more preferred: watching or participating in sports?

6. Following are the marks obtained by 7 students of a class 59, 68, 72, 49, 84, 92, 24

a) Calculate the mean marks.

b) Find the mean marks if a student, whose mark is 48, is also included.

c) What will be the mean marks, if a student whose mark is 72 is excluded?

7.A car seller collects the following data of cars sold in the shop.

Colour of car	Number of car sold
Red	15
Black	20
White	17
Silver	12
Other	9

i)What colour of the car is most liked?

ii)Which measure of central tendency was used in (i)?

8.Age (in years)of 6 children of two groups are recorded as below.

i)Find the mode and range for each group.

ii)Find the range and mode if the two groups are combined together.

Group(in years)A	Group (in years) B
7	7
7	9
9	11
8	12
10	12
10	12

9.The marks of a student in different subjects are given below. Find the mean of the data.

Subject	Hindi	English	Maths	Science	Social Science
Marks	43	56	80	65	50

10. Given below are heights of the 15 boys of a class measured in cm: 128, 144, 146, 143,136, 142, 138, 129, 140,152,144,140,150,142,153.Find

i) The height of the tallest boy.

ii) The height of the shortest boy.

iii) The range of the given data.

iv) The median height of the boys.

11. Observe the data and answer the questions that follow: 16,15,16, 16, 8,15, 17.

i) Which data value can be put in the data so that there will be two modes.

ii) At least how many and which values must be put into change the mode 15?

iii) What is the least number of data values that must be put into change the mode to 17?

CHAPTER-13 SYMMETRY

SECTION – A(1 MARKS)

1.Regular pentagon has ……line of symmetry.

2. Equlilateral triangle has …….. lines of symmetry.

3. Regular hexagon has …….. lines of symmetry.

4.In an isosceles right triangle, the number of lines of symmetry is_____

5. When an object rotates, its shape and size change. (True/False)

6.How many lines of symmetry does a circle have ?

a)1 b) 2 c) 4 d) Infinite

7.The number of lines of symmetry of an isosceles triangle is _____ .

a) 0 b) 1 c) 2 d) 3

SECTION – B(2 MARKS)

1.Make any three ink dot designs.

2.Write three letters of English alphabet having no line of symmetry.

3.Write three letters of English alphabet having one line of symmetry.

4.How many lines of symmetry a rectangle have ?Draw the lines of symmetry of a rectangle.

5.Find the line of symmetry of the following angles :(i)60˚ (ii)120˚

SECTION – C(3 MARKS)

1. Draw an isosceles trapezium and draw its line(s) of symmetry.

2.How many lines of symmetry does an isosceles triangle have?Draw the lines of symmetry of the triangle.

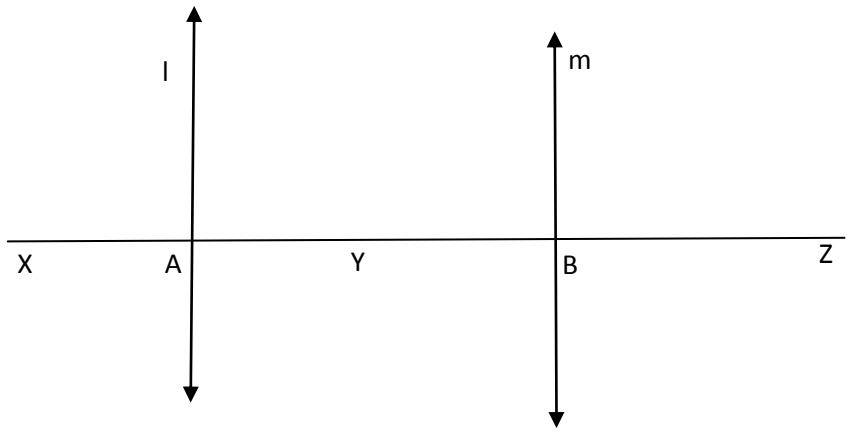
3. How many lines of symmetry does a square have?Draw the lines of symmetry of the square.

4.Draw the lines of symmetry of a Regular octagon.

5. Construct an equilateral triangle and draw its lines of symmetry.

SECTION – D(4 MARKS)

1.Lines l and m are the lines of symmetry of the line segment XY and YZ respectively.If XA=5cm and YZ=8cm,find AY,YB,XZ.



2.Draw a hexagon and draw its lines of symmetry.

3.Draw the images of any three figures.

4.Draw a Rhombus and draw its line of symmetry.

5.Define a kite and draw its line of symmetry.

CHAPTER-14 VISUALISING SOLIDS

SECTION – A(1 MARKS)

1. Out of the following which is a 3-D figure?

a) Square b) Sphere c) Triangle d) Circle

2. Total number of edges a cylinder has

a) 0 b) 1 c) 2 d) 3

3. The solid with one circular face, one curved surface and one vertex is known as:

a)cone b) sphere c) cylinder d) prism

4. All faces of a pyramid are always:

a) Triangular b) Rectangular c) Congruent d) None of these

5. A solid that has only one vertex is

a) Pyramid b) Cube c) Cone d) Cylinder

SECTION – B(2 MARKS)

1. If three cubes each of edge 4 cm are placed end to end, then find the dimensions of resulting solid.

2. By what minimum angle does a regular hexagon rotate so as to coincide with its original position for the first time?

3.How many faces,edges and vertices does a triangular prism have?

4.How many vertices are there of a sphere?

5.How many faces,edges and vertices does a cuboid have?

SECTION – C(3 MARKS)

1.Draw the net of a triangular prism whose base is an equilateral triangle.

2.The number of face of a pyramid is 5.Find the number of its vertices when its edges are eight.

3.Which of the following are not a polyhedron?A cube,a prism,a cone or acuboid?

4. How many faces,edges and vertices does a cube have?What is the shape of each face?15. How many faces,edges and vertices does a triangular prism have?

SECTION – D(4 MARKS)

1.Sketch a cuboid of size 3×2×1 on a squared paper.

2.Draw an isometric sketch for a cuboid of dimensions 6×3×4.

3. Draw an oblique sketch of a cube with dimension 3×3×3 on a squared paper.

4. Draw the net of a of a square pyramid.

5.What is the Euler's formula?Using it find the number of faces of tetrahedron having vertices as 4 and 6 edges.

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