QUESTION BANK — (VII)
SUBJECT MATHS

.

CHAPTER INTEGERS

Multiple choice questions (1 mark each)

1. Greatest negative integer is
   a) 0 b) 1 c) -1 d) none of these
2. -8 x 0 is
   a) 8 b) 1 c) 0 d) -8
3. Negative of a negative integer is
   a) negative b) positive c) 0 d) none of these
4. -10 + (-10) =
   a) 20 b) -20 c) 0 d) none of these
5. (-8) x (-2) x (-1) =
   a) -16 b) 16 c) -11 d) 11
6. Closure property does not hold good in integers for
   a) Addition b) Multiplication c) Subtraction d) Division
7. In integers, 1 is the identity for
   a) Additon b) Division c) Subtraction d) Multiplication
8. The identity element with respect to addition in integers is
   a) 1 b) 0 c) -1 d) 2
9. The product of a positive integer and (-1) is
   a)-1 b) 1 c) Positive d) Negative
10. The integers which is its own additive inverse is
    a) 0 b) +1 c) -1 d) none of these
11. The Multiplicative identity of integers is
    a) 0 b) +1 c)-1 d) none of these
12. The additive identity of integers is
    a) 0 b)1 c)-1 d) none of these
13. The sum of two integers is always
    a) a natural number b) a whole number c) an integer d) none of these
14. Every integer is also a
    a) natural no. b) whole no. c) a & b both d)none of these
15. (-48) – (-12) is equal to
    a) -60 b) 60 c) -36 d) 36

Short Answer Questions Type -1 (2 marks each)

1. Find 39 + (-24) – (15)
2. Write down a pair of integers whose i) sum is -8 ii) difference is (-10)
3. Write a pair of negative integers whose difference gives 6.
4. Write a negative integer and a positive integer whose difference is -2.
5. Find the product (-3) x (-7) x (-12)
6. Find 13/ [(-2) + 1]
7. Find (-18)x(-5) x(4)
8. Evaluate -245 + 90 + (-140)
9. Write down a pair of integers whose i)sum is 0 ii)difference is -7
10. Write a negative and positive integer whose difference is -3.
11. Find the product (-1)x(-5)x(-4)x(-6).

12. Evaluate [(-6)+5] / [(-2)+1]
13. Verify the following [7x(-5)]x 6 = 7x[(-5) x 6]
14. Find the product using suitable property 7x (50-2)
15. Find the product using suitable property (-117) x 251 + (-117) x 249

Short Answer Questions Type -2 (3 marks each)

1. Verify the following:
   18 x [7 + (-3)] = [18 x 7] + [18 x (-3)]
2. Verify the following:
   (-21) x [(-4)+(-6)] = [(-21) x (-4)] + [(-21)x (-6)]
3. Determine the integer whose product with (-1) is (a) -22 (b) 37 (c) 0
4. Find the product using suitable property 625 x (-35) + (-625) x 65
5. Find the product using suitable property (-41) x 102
6. Find the product (a) (-12) x (6) x (-4) (b) (-8) x 0 x (-9)
7. In a quiz, team A scored -40, 10, 0 and team B scored 10, 0, -40 in three successive rounds. Which team scored more?
8. Which is greater? 39 + (-24) – (15) OR 36 + (-52) – (35)
9. A plane is flying at the height of 5000 m above the sea level. At a particular point , it is exactly above a submarine floating 1200m below the sea level. What is the vertical distance between them?
10. At Srinagar temperature was -5^0C on Monday and then it dropped by 2^0C on Tuesday. What was the temperature of Srinagar on Tuesday ? On Wednesday, it rose by 4^0C. What was the temperature on this day?

Long Answer Questions (4 marks each)

1. A certain freezing process requires that room temperature be lowered from 40^0C at the rate of 5^0C every hour. What will be the room temperature 10 hours after the pocess begins?
2. Find the product using suitable properties 26x (-48) + (-48) x (-36)
3. In a class test containing 10 questions , 5 marks are awarded for every correct answer and (-2) marks for every incorrect answer and 0 for questions not attemted. Mohan gets 4 correct and 6 incorrect answers. What is his score ?
4.. Verify a- (-b) = a +b for the following values of a and b: a= 65, b=70
5. An elevator descends into a mine shaft at the rate of 6m/min. If the descent starts from 10m above the ground level, how long will it take to reach -350m.

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

CHAPTER FRACTIONS AND DECIMALS

Multiple choice questions (1 mark each)

1. 1.05 x 7 =
   a) 7.75 b) 7.35 c) 7.25 d) 10.35
2. The product of 5/3 and 12/25 is
   a) 12/36 b)4/5 c) 5/4 d)20/75

3. Improper fraction for $2\frac{3}{8}$ is
   a) 48/8 b) 19/8 c)15/8 d) none of these
4. Multiplicative inverse of $1\frac{3}{8}$ is
   a) 8/3 b) 11/8 c) 8/11 d) 1/8
5. Reciprocal of 8/3 is
   a) $2\frac{2}{3}$ b) 3/8 c) -8/3 d) none of these
6. The simplest form of 76/12 is
   a) 12/76 b) 38/6 c) 17/3 d) 19/3
7. Mixed fraction for 91/8 is
   a) $11\frac{3}{8}$ b) $9\frac{1}{8}$ c) $11\frac{1}{8}$ d) none of these
8. 2/5 of 10 litre is
   a) 4 litre b) 2 litre c) 6 litre d)50 litre
9. Find the quotient when 2.66 is divided by 100
   a) 266 b) 0.266 c) 0.0266 d) none of these
10. 2.03 x 1.2 x 3.9 is equal to
    a) 9.504 b) 9.405 c) 9.5004 d) 9.4005
11. 445 paise is equal to
    a) Rs 44.5 b) Rs 4.45 c) Rs 0.445 d) none of these
12. 0.8007 x 1000 is equal to
    a) 800.7 b) 8.007 c) 8007.0 d) none of these
13. 45cm is equal to
    a) 450m b) 4.5m c) 0.45m d) none of these
14. 300g is equal to
    a) 30.0 kg b) 0.300 kg c) 3 kg d) 0.03 kg
15. $\frac{1}{4}$ of 4/3 is equal to
    a) 1/3 b) 3/16 c)4/7 d) none of these

Short Answer Questions Type 1 (2 marks each)

1. Solve 3/5 + 2/7
2. Solve $3\frac{2}{3} + 4\frac{1}{3}$
3. Multiply and express as a mixed fraction $3 \times 4\frac{5}{8}$
4. Find 4/5 of $3\frac{2}{3}$
5. Multiply and reduce to lowest form (3/8) x (6/4)
6. Find $3/(2\frac{1}{3})$
7. Divide $3\frac{1}{3}$ by 8/3
8. Express as rupees using decimals: i) 5 rupees 5 paise ii) 245 paise
9. Express 55mm in cm and km
10. Express 2674g in kg
11. Write in expanded form 453.04 and 6.035
12. Write the place value of 3 in i) 43.67 ii)64.03 iii)2.053
13. Multiply 0.7x 100.01
14. Divide 76.5 by 0.25
15. Which is greater 3/5 or 5/8

Short Answer Questions Type 2 (3 marks each)

1. Multiply the following fraction a) $4\frac{7}{8}$ x 8/5
2. Find the quotient when $3\frac{1}{8}$ is divided by $2\frac{3}{8}$.
3. Find the area of rectangle whose length is 6.5cm and breadth is 4.6cm.

4. Reeta reads a book for 1⅔ hours everyday. She reads the entire book in 7 days. How many hours in all were required by her to read the book?
5. Sunil reads ¼ part of a book in 1 hour . How much part of the book will he read in 3⅞ hours?
6. Multiply and express as a mixed fraction 7 x 3⅔
7. Find a) 2/5 of 35 b) 3/7 of 28
8. Arrange the following in descending order 1/9, 4/3, 8/21
9. Solve the following 2⅔ + 4⅓ + 5/6
10. Express in kg a) 4350g b) 3kg 6g

Long Answer Questions (4 marks each)

1.. A rectangular sheet of paper is 14⅓m long and 10⅔m wide. Find its perimeter.
2.. Mohit finished his homework in 5/8 hour. Sunil finished the same work in ¾ hour Who worked longer? By what fraction was it longer?
3. Which is greater: 3/5 of 2/7 or 5/7 of 3/10
4. A car runs 14 km using 1 litre of petrol. How much distance will it cover using 5⅔ litres of Petrol
5. A vehicle covers a distance of 37.8 km in 1.4 litres of petrol. How much distance will it cover in one litre of petrol?

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

CHAPTER DATA HANDLING

Multiple Choice Questions (1 mark each)

1. The mean of first 10 natural numbers is
   a) 5.5 b) 10 c) 5 d) 4
2. The mean of first 5 even natural numbers is
   a) 5 b) 6 c) 7 d) 8
3. The range of 3.5, 2, 4.5, 8.7, 1.9, 3.2, 1.9 is
   a) 1.5 b) 2.5 c) 6.8 d)1.6
4. The median of 48, 45, 30, 35, 44, 47, 49, 33, 46 is
   a) 44 b) 44.5 c) 46 d) 45
5. The probability of getting a head when a coin is tossed is
   a) 1/3 b) 2/3 c) ½ d) 1
6. The mean of 6,7,10,x,9,12,11 is 8, then x is equal to
   a) 7 b) 1 c) 3 d) 12
7. The probability of getting an even number when a die is thrown is
   a) 1/3 b) ½ c) 0 d) 2/3
8. The probability of drawing a black ball from a bag containing 5 black and 3 red balls is
   a) 5/3 b) 3/5 c) 5/8 d) 3/8

9. The arithmetic mean is also called as
   a) mode b) median c) average d) none of these
10. The rainfall in (mm) in a city in a particular week recorded as follows:
    4.9, 5.5, 25.6, 21.3, 0, 2.2, 0. The range is equal to
    a) 0 b) 25.6 c) 21.3 d) none of these

11. In a throw of a die the probability of getting 6 is
    a) 1 b) 6 c) 1/6 d) none of these
12. The probability of an impossible event is
    a) 1 b) 10 c) 0 d) 100
13. The probability of a sure event is
    a) 0 b) 1 c) 2 d) 3
14. The mode of the following data 6,5,6,7,8,5,6,7,7,6,7,5,8,8,7,7,6,9 is
    a) 5 b) 6 c) 7 d) 8
15. The ages of 10 persons (in years) are
    34,24,28,31,30,26,27,25,29,30. The median age is
    a) 28 years b) 29 years c) 28.5 years d) 32.5 years

Short Answer Questions (3 marks each)

1. A cricketer scores the following runs in eight innings
   56, 74, 42, 35, 48, 48, 0, 90. Find the mean score.
2. Find the mode and median of the data: 13, 16, 12, 14, 19, 12, 14, 13 , 14
3. There are 8 marbles in a box with numbers from 1 to 8 marked on each of them.
   i) What is the probability of drawing a marble with number 3?
   ii) What is the probability of drawing a marble with number 7?
   iii) What is the probability of drawing a marble with number 8?
4. Find the median of the data: 24, 36, 46, 17, 18, 25, 35.
5. Tell whether the following is certain to happen, impossible, can happen but not certain
   i) You are older today than yesterday.
   ii) A tossed coin will land heads up.
   iii) Tomorrow will be a cloudy day.
6. The marks (out of 100) obtained by a group of students in a science test are
   85, 76, 90,85,39,48,56,95,81 and 75. Find the
   i) Highest and the lowest marks obtained by the students.
   ii) Range of the marks obtained.
   iii) Mean marks obtained by the group.
7. The enrolment in a school during 6 consecutive years was as follows:
   1555, 1670, 1750, 2013, 2540, 2820
   Find the mean enrolment of the school for this period.
8. Find the mean of the first eight whole numbers and the first eight natural numbers.
9. Find the mean and median for the following data:
   12,3,18,7,4,9,7,19,20, 15,8,17,2. Are they equal?
10. Tell whether the statement is true or false:
    i) The mean is one of the numbers in a data.
    ii) The mode is always one of the numbers in a data.
    iii) The median is always one of the numbers in a data.

Long Answer Questions (4 marks each)

1. Find the mean , median and mode of the data: 6, 15, 120, 50, 100, 80, 10, 15, 8, 10, 15.
2. The heights of 8 girls were measured in cm and the results are as follows:
   136, 144, 150, 149, 155, 158, 140, 142
   i) What is the height of the tallest girl?
   ii) What is the height of the shortest girl?
   iii) What is the range of the data?

iv) What is the mean height of the girls?

v) How many girls have heights more than the mean height?

3. Following data gives total marks (out of 800) obtained by 5 children of a particular class.
Represent the data on a bar graph.

Students	A	B	C	D	E
Marks obtained	300	550	400	650	700

4. Sale of English and Hindi books are given below in respective years.

Years	1995	1996	1997	1998
English	350	400	450	620
Hindi	500	525	600	650

Represent the data in a double bar graph.

5. Consider this data collected from a survey of a colony.

Favourite Sport	Cricket	Basket Ball	Swimming	Hockey	Athletics
Watching	1240	470	510	430	250
Participating	620	320	320	250	105

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

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

CHAPTER SIMPLE EQUATIONS

Multiple Choice Questions (1 mark each)

1. The solution of the equation $7n + 5 = 19$ is given by n=_____
a) -2 b) 2 c) 1 d) -1
2. The solution of the equation $3y = -9$ is given by y= _____
a) 3 b) -3 c)2 d) -2
3. The solution of the equation $3s = 0$ is given by s = _____
a) 3 b) -3 c)0 d) 1
4. The equation for the statement '3 subtracted from y is 6' is given by
a) 3-y=6 b) y-3=6 c) 3+y=6 d) y+3=6
5. The equation for the statement ' The sum of numbers x and 4 is 10' is given by
a) x/4 = 10 b)x-4 = 10 c)x+4 = 10 d)4-x = 10
6. The highest power of the variable in a linear equation is
a) 1 b) 2 c) 0 d) 3
7. Mathematical statement for 'Three times a number is 12' is
a) 3y = 12 b) y + 3 = 12 c) y/3 = 12 d) none of these
8. Mathematical statement for 'Three times a number added to itself is 48' is
a) 3y = 48 b) 3y + y = 48 c) y + 3 = 48 d) y/3 = 48
9. The symbol used between two sides of an equation is
a) ≤ b) ≥ c) = d)none of these
10. The solution of 5y – 2 = 13 is

a) y = 13/5 b) y = 3 c) y = 11/5 d) y = 4

11. One of the possible equations of the solution a = 3 is
a) 3a = 6 b) a – 2 = 5 c) a + 5 = 8 d) a + 3 = 8

12. The number of possible equations of the solution a = 5 are
a) 1 b) 2 c) 3 d) many

13. The equation for : The sum of a number y and 10 is 53' is
a) 53 = y – 10 b) 53 = y + 10 c) y + 10 = 53 d) none of these

14. The solution of the equation 2y/3 + 7 = 15 is
a) 12 b) 0 c) 15 d) 8

15. The solution of the equation 3y + 4 = 49
a) 16 b) 15 c) 0 d) 14

Short Answer Questions Type 1 (2 marks each)

1.. Write equations for the following statements---
i) If you take away 6 from 6 times y, you get 60.
ii) One –fourth of a number x minus 4 gives 4.
1. Write the following equations in statement forms—
i) 4m = 7 ii) 2p + 5 =9

3. Solve the equation--- 2q + 6 = 12

4. Give first step you will use to solve the equation y + 5 = 7

5. Solve the equation 3(y – 5) = 18

6. Construct 2 equations starting from x = 3

7. Write equations for the following statements---
i) 15 subtracted from y gives 50
ii) Six times a is equal to 20

8. Construct 2 equations starting from x = -4

9. Write the following equations in statement forms—
i) 3m – 2 = 8 ii) y/3 = 6

10. Set up an equation:
Mohit's mother is 38 years old. She is 5 years older than four times Mohit's age. (Take Mohit's age to be m years)

11.. Set up an equation:
If the length of a rectangle exceeds its breadth by 10 metres. Its perimeter is 40m. (Take the Breadth of rectangle be 'a' metres)

12. Write equations for the following statements:
i) If you add 4 to one-third of y, you get 20.
ii) The sum of numbers m and 15 is 29.

13. Check whether the value given in the brackets is a solution to the given equation or not:
7n + 5 = 19 (n = -2)

14. Check whether the value given in the brackets is a solution to the given equation or not:
4p – 3 = 13 (p = 1)

15. Write equations for the following statements:
i) If you take away 6 from 6 times y , you get 60.
ii) Seven times m plus 7 gets you 77.

Short Answer Questions Type 2 (3 marks each)

1. Solve the equation 16 = 4 + 3(n + 2)

2.. Solve the equation 7m + 19/2 = 13

3. Solve the equation by trial and error method $7n + 5 = 26$
4. Set up an equation and solve it to find the unknown number:
   Add 5 to 6 times a number, you get 77.
5. Set up an equation and solve it to find the unknown number:
   When I subtracted 7 from twice a number, the result was 21.
6. Ravi scored twice as many run as Sunil. Together, their runs fell 5 short of a double century. How many runs did each one score ?
7. Solve the equation by trial and error method $5p + 2 = 17$
8. Solve the equation $2b/3 - 5 = 3$
9. Solve the equation $2y + 5/2 = 37/2$
10. Irfan says that he has 7 marbles more than five times the marbles Parmeet has. Irfan has 37 marbles. How many marbles does Parmeet have?

Long Answer Questions (4 marks each)

1. Give the steps you will use to separate the variable and then solve the equation: $5m + 7 = 17$
2. Solve the equation: $4 + 5(p – 1) = 34$
3. Set up equation and solve it to find to find the unknown number:
   Mohit subtracts thrice the number of notebooks he has from 50, he finds the result to be 8.
4. Set up equation and solve it to find to find the unknown number:
   Anwar thinks of a number .If he takes away 7 from 5/2 of the number, the result is 23.
5. Solve the following: Rani's father is 49 years old . He is 4 years older than three times Rani's age . What is Rani's age ?

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

CHAPTER LINES AND ANGLES

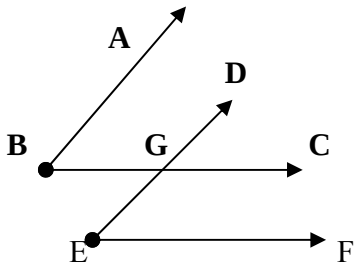
Multiple Choice Questions (1 mark each)

1. The complement of 20^0 is
   a) 80^0 b) 70^0 c) 160^0 d) 20^0
2. The supplement of 1^0 is
   a) 89^0 b) 169^0 c) 179^0 d) 201^0
3. When two lines are parallel, the distance between them is
   a) equal b) not equal c) increases d) decreases
4. Which of the following pair of angles is complementary ?
   a) $120^0, 50^0$ b) $60^0, 120^0$ c) $39^0, 61^0$ d) $65^0, 25^0$
5. The common end point where two rays meet to form an angle is called
   a) vertex b) arm c) ray d) segment
6. Two non-intersecting lines are
   a) Always parallel b) never parallel c) always equidistant
   d) sometimes parallel sometimes non-parallel
7. Linear pair angles are also
   a) complementary angles b) equal angles c) supplementary angles d) none of these
8. Parallel lines always
   a) intersect b) coincident c) equal d) equidistant
9. A line which intersects two or more given lines at different points is called
   a) intersecting line b) parallel line c) transversal line d) none of these

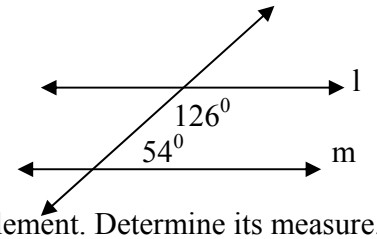
10. If two parallel lines are intersected by a transversal then
a) alternate angles are equal b) corresponding angles are equal c) both (a) and (b)
d) none of these
11. If two parallel lines are intersected by a transversal then pair of alternate angles are
a) equal b) complementary c) supplementary d) none of these
12. . When two parallel lines are intersected by a transversal, then number of pairs of alternate interior angles are
a) 1 b) 4 c) 3 d) 2
13. If two lines p and q are intersected by a transversal line , and the corresponding angles formed are equal then
a) $p = q$ b) $p \neq q$ c) $p \parallel q$ d) none of these
14. When a transversal cuts two parallel lines , then number of pairs of corresponding angles formed are a) 5 b) 4 c) 3 d) 2
15. The complement angle of 40^0 is
a) 45^0 b) 50^0 c) 140^0 d) none of these

Short Answer Questions (2 marks each)

1. Find the angle which is equal to its complement.
2. Find the angle which is equal to its supplement.
3. Identify whether the pair of angle is complementary or supplementary: 112^0, 68^0
4. In the given figure the arms of two angles are parallel. If $\angle ABC = 70^0$, then find $\angle DEF$



5. In the given figure find whether l is parallel to m



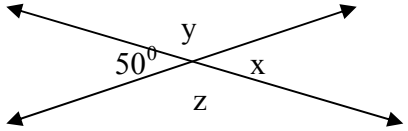
6. An angle is equal to four times its complement. Determine its measure.
7. Two supplementary angles differ by 40^0. Find the angles.
8. Can two angles be complement, if both of them be i) acute ii) right ?
9. Find the complementary angles of the following: 55^0 , 78^0.
10. Find the supplementary angles of the following: 135^0 , 85^0.
11. Define Complementary angles and Supplementary angles.
12. Say true or false:
i) A ray has a fixed length.
ii) A point has length 1mm.
13. An angle is 3 times its complement. What is its measure?
14. Fill in the blanks: i) Two angles forming a linear pair are _____ and _____.

ii) If two adjacent angles are supplementary, they form a _____ .

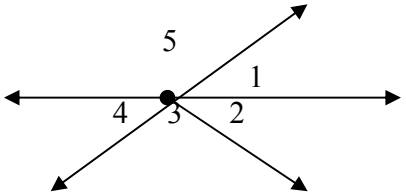
15. Identify whether the pairs of angles are complementary or supplementary:
i) 65^0, 115^0 ii) 63^0 , 27^0.

LONG ANSWER QUESTIONS (4 marks each)

1. Find the values of the angles x, y and z



2. Indicate which pair of angles are
i) vertically opposite angles
ii) linear pair of angles



3. Draw a pair of parallel lines and a transversal. Indicate a pair of corresponding angles, two pairs of alternate interior angles and a pair of adjacent angles.
4 Draw two intersecting lines such that one of the angles thus formed is 70^0. Find the measure of the remaining angles formed.
5. Draw a pair of parallel lines and a transversal. Indicate two pairs of vertically opposite angles and two pairs of linear pair of angles.

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

CHAPTER THE TRIANGLE AND ITS PROPERTIES

Multiple Choice Questions (1 mark each)

1. A triangle formed by the sides 3cm, 4cm and 6cm is
a) isosceles b) scalene c) equilateral d) none of these
2. A line segment joining the vertex to the mid point of opposite side is called
a) altitude b) median c)perpendicular d) none of these
3. If a, b, c are the sides of a triangle, then
a) $a + b \geq c$ b) $a - b \leq c$ c) $a + b = c$ d) none of these
4. Two angles of a triangle are 65^0 and 45^0. The third angle is
a) 90^0 b) 80^0 c) 70^0 d) 60^0
5. A triangle formed by the sides 5.5cm, 6.2cm and 5.5cm is
a) isosceles b) scalene c) equilateral d) none of these
6. A triangle formed by the sides of measure 6cm each is
a) isosceles b) scalene c) equilateral d) none of these
7. If a, b,c are the sides of a right angled triangle, which one is possible?
a) $a^2 > b^2 + c^2$ b) $a^2 < b^2 + c^2$ c) $a^2 = b^2 + c^2$ d) none of these
8. A triangle always has
a)exactly 1 acute angle b)exactly 2 acute angles c)atleast 2 acute angles d)atmost 2 acute angles
9. In ΔABC, the side opposite of $\angle C$ is
a) AB b) BC c) CA d) none of these
10. How many altitudes can a triangle have
a) one b) two c) three d) none of these

11. In an isosceles triangle, the angles opposite to equal sides are
a) acute b) obtuse c) equal d) none of these
12. An exterior angle of a triangle is equal to
a) sum of all angles of triangle b) 180^0 c) sum of its opposite interior angles d) 360^0
13. The total measure of the three angles of a triangle is
a) 90^0 b) 180^0 c) 100^0 d) none of these
14. A triangle whose angles are 30^0, 30^0, 120^0 is called
a) acute angled triangle b) obtuse angled triangle c) right angled triangle d) none of these
15. A triangle is possible with the following set of angles
a) 30^0, 40^0, 120^0 b) 40^0, 30^0, 110^0 c) 90^0, 108^0, 72^0 d) none of these

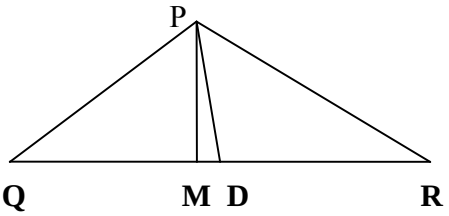
Short Answer Questions Type 1 (2 marks each)

1.. Draw a triangle ABC , Such that BE is the median.
2. Draw a triangle PQR, Such that PQ and PR are the altitudes of the triangle.
3. Is it possible to have triangle with the sides 2cm, 3cm and 5cm.
4. Are the sides 3cm, 3cm and 4cm sides of a right triangle?
5. PQR is a triangle, right angled at P. If PQ = 10cm and PR = 24cm, find QR.
6. ABC is a triangle, right angled at C. If AB = 25cm and AC= 7cm, find BC.
7. Is it possible to have triangle with the sides 2.5cm, 6.5cm and 6cm.
8. A tree is broken at a height of 5m from the ground and its top touches the ground at a distance of 12m from the base of the tree. Find the original height of the tree.
9.. A man goes 12m due west and then 5m due south. How far is he away from his initial position?
10. ABC is a triangle, right angled at B. If AB = 12cm and BC = 9cm, find AC.
11.. Classify the triangles according to the given sides as scalene, isosceles or equilateral:
i) 3.5cm, 4cm, 4cm ii) 6cm, 7cm, 9cm
12. Classify the triangles as acute, obtuse or right if angles are :
i) 60^0, 30^0, 90^0 ii) 60^0, 60^0, 60^0
13. Two angles of a triangle are of measures 70^0 and 30^0 . Find the measure of the third angle.
14. One of the angles of a triangle has measure 70^0 and the other two angles are equal. Find these two angles.
15. One of the acute angles of a right triangle is 40^0. Find the other acute angle.

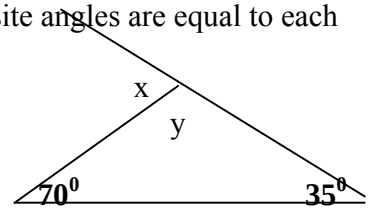
Short Answer Questions Type 2 (3 marks each)

1. W rite the following:
i) side opposite to the vertex Q of triangle PQR.
ii) Angle opposite to the side LM of triangle LMN
iii) Vertex opposite to the side RT of triangle RST

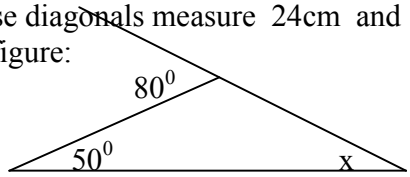
2. In ΔPQR, D is the mid point of QR , $\angle PMD = 90^0$
i) PM is _____ .
ii) PD is _____ .
iii) Is QM = MR?



3. An exterior angle of a triangle measures 100^0 and its interior opposite angles are equal to each other. Find the measure of each angle of the triangle.
4. Find the value of x and y in the figure given below:



5. Is it possible to have triangle with the following sides? 3cm, 6cm, 7cm.
6. ABCD is a quadrilateral . Show that AB + BC + CD + DA > AC + BD
7. A 15m long ladder reached a window 12m high from the ground on placing it against a wall at a distance 'a' . Find the distance of the foot of the ladder from the wall.
8. A man goes 24m due east and then 10m due north . How far is he away from his initial position?
9. Find the perimeter of the rhombus whose diagonals measure 24cm and 10cm.
10. Find the value of 'x' in the following figure:



Long Answer Questions (4 marks each)

1. Find the perimeter of the rectangle whose length is 40cm and a diagonal is 41cm.
2. The diagonals of a rhombus measure 16cm and 30cm. Find its perimeter.
3. AM is a median of a triangle ABC. Show that AB + BC + CA is greater than 2AM.
4. The lengths of two sides of a triangle are 12cm and 15cm. Between what two measures should the length of the third side fall?
5. ABCD is a quadrilateral. Is AB + BC + CD + DA < 2 (AC + BD) .Show it.

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

CHAPTER CONGRUENCE OF TRIANGLES

Multiple choice questions (1 mark each)

1. Which of the following are always congruent?
   i) Two isosceles triangles. ii) Two circles having different radius.
   ii) Two circles of same radius iv) none of these
2. Among two congruent angles, one has a measure of 60^0, the measure of other angle is
   i) 30^0 ii) 60^0 iii) 90^0 iv) 120^0
3. If ΔABC is congruent to ΔPQR, then which of the following is false?
   i) $\angle ABC = \angle PQR$ ii) AB = QR iii) AC = PR iv) $\angle BCA = \angle PRQ$
4. Which of the following statement is a false statement?
   i) Two angles are congruent if there measures are equal.
   ii) Two circles are congruent if there diameters are equal.
   iii) Two circles are congruent if there radius are equal.
   iv) Two rectangles are congruent if there areas are equal.
5. If there is a 1-1 correspondence ABC ↔ PQR, then AB is equal to
   i) PR ii) QR iii) PQ iv) none of these
6. If ΔTWN is congruent to ΔPRQ, then $\angle W$ is equal to
   i) $\angle P$ ii) $\angle N$ iii) $\angle Q$ iv) $\angle R$
7. Which of the following are always congruent?
   i) Two circles are congruent.
   ii) Two equilateral triangles are congruent
   iii) Two squares having same perimeter are congruent.
   iv) Two rectangles having same perimeter are congruent.
8. What is the side included between the angles M and N of Δ MNP?
   i) MP ii) MN iii) NP iv) none of these

9. Two circles are said to be congruent if
   i) they have same radius ii) they have same centre iii) they have same circumference
   iv) none of these
10. If two angles are congruent, it means
   i) they are supplementary ii) they are linear paired iii) they have equal measure
   iv) none of these
11. Two line segments are congruent. It means
   i) they are parallel to each other ii) they intersect each other iii) they are equal in length
   iv) none of these
12. Two rectangles are congruent if
   i) they have same perimeter ii) they have same length iii) they have same breadth
   iv) they have same length and breadth.
13. Two plane figures are congruent , if they have
   i) same shape ii) same shape and size iii) same size iv) none of these
14. In ΔDEF, the angle included between sides DE and EF
   i) $\angle D$ ii) $\angle E$ iii) $\angle F$ iv) none of these
15. ΔPQR is congruent to ΔXYZ . Which of the following is true?
   i) PR = XY ii) PQ = XY iii) QR = YZ iv) both (ii) and (iii)

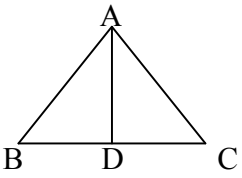
Short Answer Questions (2 marks each)

1. If ΔABC is congruent to ΔFED under the corres pondence ABC ↔ FED , write all the corresponding congruent parts of the triangle.
2. If ΔDEF is congruent to ΔBCA, write parts of ΔBCA that correspond to
   i) $\angle E$ ii) EF iii) DF iv) $\angle F$
3. You want to show that ΔART is congruent to ΔPEN,

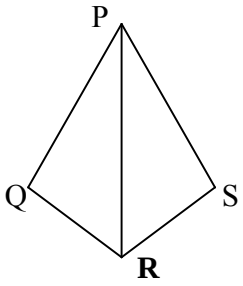
   If you have to use SSS criterion, then you need to show
   i) AR = ii) RT= iii) AT=
4. You want to show that ΔART is congruent to ΔPEN,
   If it is given that $\angle T = \angle N$ and you are to use SAS criterion, you need to have
   i) RT = ii) PN =
5. If triangle ABC and triangle PQR are to be congruent, such that $\angle B = \angle Q$ and $\angle C = \angle R$, name one additional pair of corresponding parts. What criterion did you use?

6. Which congruence criterion do you use in the following cases:
   i) Given In ΔABC and ΔDEF, AB = DE, BC = EF and AC = DF.
   ii) Given In ΔPQR and ΔXYZ, ZX = RP, RQ = ZY and $\angle PRQ = \angle XZY$.
7. You want to show that ΔART is congruent to ΔPEN,
   If it is given that AT = PN and you are to use ASA criterion, you need to have
   i) ? ii) ?
8. Which congruence criterion do you use in the following cases:
   i) Given in ΔLMN and ΔGFH, $\angle MLN = \angle FGH$, $\angle NML = \angle GFH$ and ML = FG
   ii) Given in ΔABE and ΔCDB having common vertex B, EB = DB, AE = BC, $\angle A = \angle C = 90^0$
9. Given that ΔABC is congruent to ΔRPQ, $\angle A = 50^0$, $\angle B = 60^0$, find $\angle P$, $\angle Q$ and $\angle R$.
10. State the correspondence between the sides and angles of the following pair of congruent triangles:
   $\Delta XYZ = \Delta PQR$

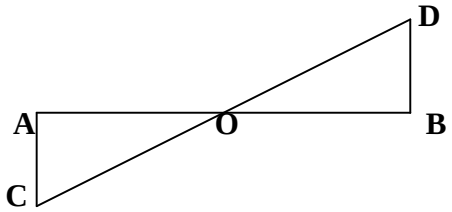
11. In the figure AB = AC and D is the mid point of BC
    i) State three pairs of equal parts in triangle ADB and triangle ADC
    ii) Are the triangles congruent? Give reason



12. In the given figure, PQ = PS and QR=RS. Find the third pair of corresponding parts that makes ΔPQR congruent to ΔPSR by SSS congruence condition.



13. In the given figure, AC ⊥ AB, DB ⊥ AB and AC = DB. Prove that ΔOAC is congruent to ΔOBD. Name the congruency condition also.



14. i) When we write ∟A = ∟B, we actually mean _____ .
    ii) Among two congruent angles, one has a measure of 80^0, the measure of the other angle is _____
15. i) Two circles are congruent, then their radii will be _____ .
    ii) Two line segments are congruent if _____ .

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

CHAPTER COMPARING QUANTITIES

Multiple Choice Questions (1 mark each)

1. Ratio of 4 kg to 36 kg is
   i) 1:6 ii) 1:9 iii) 9:1 iv) 1:4
2. Ratio of 750 ml to 1.5 ml is
   i) 2:1 ii) 5:1 iii) 1:2 iv) 1:5
3. Ratio of 60 hrs to 120 minutes is
   i) 1:2 ii)1:30 iii) 2;1 iv) 30:1
4. The length and breadth of a sheet are 2m and 25cm respectively. The ratio of breadth to length is
   i)1:13 ii) 1:8 iii) 8:1 iv)13:1
5. The simplest form of the ratio 144:32 is
   i) 72:16 ii) 9:2 iii) 2:9 iv) 18:4
6. ¾ when changed to percent, we get
   i) 7.5% ii) 0.75% iii) 75% iv) 750%
7. 9.8 when expressed in percent is
   i) 98% ii) 0.98% iii) 980% iv) 0.098%

8. 25% is equivalent to
   i) 1:4 ii) 4:1 iii) 3:1 iv) 1:3
9. 6% is equivalent to
   i) 6/10 ii) 6/100 iii) 6/1000 iv) none of these
10. 5 : 1 is equal to
   i) 5% ii) 500% iii) 50% iv) none of these
11. 50% of 1 kg is
   i) 5kg ii) 500 gm iii) 50 gm iv) none of these
12. 10% of 365 days is
   i) 3.65 days ii) 365 days iii) 36.5 days iv) none of these
13. 0.65 is equivalent to
   i) 13/20 ii) 130/20 iii) 13/10 iv) none of these
14. The simplest form of the ratio 125 : 25 is
   i) 1: 5 ii) 4:1 iii) 5:1 iv) none of these
15. The ratio of 300gm to 3kg is
   i) 10: 1 ii) 100:1 iii) 1:10 iv) none of these

Short Answer Questions Type 1 (2 marks each)

1. Find 15% of 300
2. Find 45% of 2 kg
3. Convert the decimal fractions to percents 0.05 and 14.45
4. Write in simplest form 140% and 15%
5. Convert the fractional number to percents 5/2 and 5/40
6. Convert each part of the ratio to percentage 2:1
7. Find the ratio of 30 days to 36 hours
8. Find the ratio of 2m to 4cm
9. Find the ratio of 5kg to 100g
10. Express the fraction as percent 5⅔
11. Convert the decimal fractions to percents 0.75 and 0.09
12. Find 1% of 1 hour.
13. Convert the fractional number to percents 0.75 and 4.1
14. Convert each part of the ratio to percentage 3: 1
15. If Mohit pays an interest of Rs 750 for two years on a sum of Rs 4500, find the rate of interest.

Short Answer Questions Type 2 (3 marks each)

1. Find the whole quantity if 4% of it is 800
2. Find the whole quantity if 8% of it is Rs 1600
3. Convert each part of the ratio to percentage 2:3:5
4. Convert each part of the ratio to percentage 1:2:5
5. A book bought for Rs 250 and sold at Rs 200 . Find the profit percent or the loss percent in this case.
6. A table is bought for Rs 2500 and sold at Rs 3000. Find the profit percent or loss percent in this case.
7. I buy a T.V. for Rs 20,000 and sell it at a profit of 20%. How much money do I get for it?
8. Find the amount to be paid at the end of 3 years if Principal = Rs1200 at 12% p.a.
9. Ramesh buys a toy for Rs200 and sells it for Rs190. Find his loss percent.
10. If Mohit gives an interest of Rs 45 for one year at 9% rate p.a. What is the sum he has borrowed?

Long Answer Questions (4 marks each)

1.. The population of a city decreased from 25000 to 24000. Find the percentage decrease.
2. Out of 15000 voters in a constituency, 60% voted. Find the percentage of voters who did not vote?
3. Seema saves Rs 400 from her salary . If this is 10% of her salary. What is her salary?
4. In a computer lab, there are 3 computers for every 6 students. How many computers will be needed for 24 students?
5. A local team played 20 matches in one season. It won 25% of them. How many matches did they win?
6. Juhi sells a washing machine for Rs 13,500. She loses 20% in the bargain. What was the price at which she bought it?

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

CHAPTER RATIONAL NUMBERS

Multiple Choice Questions (1 mark each)

1. 0 is a rational number which is
   a) positive b) negative c) neither positive nor negative d) none of these
2. -5/-7 is a rational number which is
   a) positive b) negative c) both positive and negative d) none of these
3. 3/7 x 7/3 =
   a) 0 b) 1 c)-1 d) 2
4. -4/5 + 0 =
   a) 0 b) -4/5 c) 4/5 d) 1
5. Simplest form of 25/45 is
   a) 7/5 b) 3/7 c) 5/7 d) 7/3
6. Which of the following rational numbers is greater than -8/15
   a) -9/15 b) -10/15 c) -7/15 d) -11/15
7. Simplest form of -33/55 is
   a) 3/5 b) -3/5 c) 33/55 d) none of these
8. Out of the rational numbers -3/11, -3/12, -3/8 , -3/7, the greatest is
   a) -3/11 b) -3/12 c) -3/8 d) -3/7
9. The rational number equivalent to 3/5 is
   a) 5/3 b) 9/10 c) 9/15 d) none of these
10. Every fraction is a
    a) a natural number b) a whole number c) an integer d) rational number
11. Every integer is a
    a) whole number b) natural number c) rational number d) none of these
12. The rational number which is neither positive nor negative is
    a) 1 b) 100 c) 0 d) none of these
13. Every rational number is
    a) an integer b)a natural number c) a fraction d) none of these
14. Addition of rational numbers is a
    a) natural number b) whole number c) rational number d) none of these
15. Multiplication of rational numbers is
    a) rational number b) a whole number c) an integer d) none of these

Short Answer Questions Type 1 (2 marks each)

1.. List 4 rational numbers between 3 and 4
2. List 4 rational numbers between -1 and -2.
3. Give two equivalent rational numbers of 3/7.
4. Rewrite the rational numbers in the simplest form: i) -44/72 ii) 55/99
5. Represent the rational numbers on the number line: i) 6/7 ii) -4/5
6. Find whether the pair of rational numbers are same or not -3/5 and -12/20
7. Find which is greater? -8/5 or -7/4
8. Find the value of: -1/8 divided by ¾
9. Find the product of: (3/7) x (-2/5)
10. Find the sum: (5/3) + (3/5)
11. Find the value of: (7/24) - (17/36)
12. Give two equivalent rational numbers of -2/5
13. Find the value of: (-7/12) divided by (-5/8)
14. Find which is greater? 9/4 or 7/3
15. Find whether the pair of rational numbers are same or not 8/5 and 24/15

Short Answer Questions Type 2 (3 marks each)

1. Find the value of $3\frac{2}{3} + 7\frac{3}{8}$
2. Give three equivalent rational numbers of -5/7
3. Represent the rational numbers on the number line: 3/5, -2/5, 6/5
4. Which is greater: 5/9 or 3/7
5. Write three more numbers in the following pattern: -1/3, -2/6, -3/9, -4/12, ……
6. Write the following rational numbers in ascending order: 7/9, -3/5, -2/4
7. Write the following rational numbers in descending order: 3/5, 13/15, 2/5
8. Find the product: a) (9/2) x (-7/4) b) (3/7) x (-2/5)
9. Find the value of : a) 3/13 divided by (-4/65) b) (-6) divided by 12/13
10. Rewrite the following rational numbers in the simplest form: 35/40, -14/28, 55/75.

Long Answer Questions (4 marks each)

1. Find the value of i) (-3/8) – (7/11) ii) $-3\frac{2}{3} - 8$
2. Find the value of i) 5/4 + (-11/4) ii) -8/19 + (-2/57)
3. Write the following rational numbers in ascending order: 1/3, -5/6 , -4/3
4. Write the following rational numbers in its simplest form: -54/98 , 27/81
5. Write the following rational numbers in descending order: 3/5, -2/5, 7/10

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

CHAPTER PRACTICAL GEOMETRY

Short Answer Questions (3 marks each)

1. Draw a line , say AB, take a point C outside it. Through C, draw a line parallel to AB using ruler and compass only.
2. Draw a line ‘l’. Draw a perpendicular to ‘l’ at any point on ‘l’. On this perpendicular choose a point X, 4cm away from ‘l’. Through X, draw a line m parallel to ‘l’.

3. Construct an equilateral triangle of side 6cm.
4. Construct ΔABC such that AB = 2.5 cm, BC = 6cm and AC = 6.5 cm. Measure $\angle B$.
5. Construct ΔDEF such that DE = 5cm, DF = 3cm and $m\angle EDF = 90^0$.
6. Construct ΔABC with BC = 7.5 cm. AC = 5 cm and $m\angle C = 60^0$.
7. Construct triangle PQR if PQ = 5 cm, $m\angle PQR = 105^0$ and $m\angle QRP = 40^0$.
8. Construct triangle ABC, if $m\angle A = 60^0$, $m\angle B = 30^0$ and AB = 5.8 cm.
9. Construct the right angled ΔPQR, where $m\angle Q = 90^0$, QR = 8 cm and PR = 10cm.
10. Construct an isosceles right – angled triangle ABC, where $m\angle ACB = 90^0$ and AC = 6 cm.

Long Answer Questions (4 marks each)

1. Construct ΔPQR in which PQ = 4.5cm, QR=5cm and RP = 6cm. Write steps of construction also.
2. Construct an isosceles triangle in which each of its equal sides is 7cm and the angle between them is 120^0. Write steps of construction also.
3. Construct ΔPQR if QR = 6cm, $m\angle PQR = 100^0$ and $m\angle QRP = 45^0$. Write steps of construction also.
4. Construct a right – angled triangle whose hypotenuse is 6cm long and one of the legs is 4cm long. Write steps of construction also.
5. Construct a ΔPQR with QR = 8cm, PR = 6cm and $m\angle R = 60^0$. Write steps of construction also.

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

CHAPTER PERIMETER AND AREA

Multiple choice questions (1 mark each)

1. A radius of a circle is 7 cm . Its circumference is
   i) 44cm ii) 308 cm iii) 48 cm iv) 298 cm
2. The circumference of a circle is 176 cm. Its diameter is
   i) 5.6cm ii) 28 cm iii) 56 cm iv) 42 cm
3. The area of a triangle whose base is 25 cm and height is 8 cm is
   i) 200 cm^2 ii) 100 cm^2 iii) 0.4 m^2 iv) 0.5 m^2
4. One of the legs of a right triangle is 9 cm. If the area of the triangle is 225 cm^2, then the length of the other leg is
   i) 50 cm ii) 25cm^2 iii) 25 cm iv) 35 cm^2
5. A side of a parallelogram is 80 m and the length of the corresponding altitude is 26m. Its area is
   i) 1280 m^2 ii) 2080 m^2 iii) 2180 m^2 iv) 2010 m^2
6. The diameter of the wheel of a car is 70 cm. How much distance will it cover in 100 revolutions?
   i) 220cm ii) 2200cm iii) 22m iv) 220m
7. The ratio of the circumferences of two circles is 4: 9, the ratio of the areas is
   i) 2: 3 ii) 16:81 iii) 9:4 iv) 81: 16
8. ABCD is a parallelogram. Its area is 148m^2 and AB = 16m, then the length of the perpendicular drawn from C on AB is
   i) 8m ii) 18.5m iii) 12m iv) 9.25m
9. If the radius of a circle is doubled then the circumference becomes
   i) 2 times ii) 4 times iii) 8 times iv) none of these
10. 1 m^2 = _____ mm^2
    i) 100 ii) 1000000 iii) 10000 iv) none of these
11. Area of a circle of radius ‘r’ is
    i) $2r^2$ ii) 2∏r iii) ∏ r^2 iv) none of these

12. Circumference of a circle of radius ‘r’ is
    i) 2∏ ii) 2∏r iii) ∏ r^2 iv) none of these
13. Circumference of a circle of radius ‘r’ is
    i) 2∏ d ii) ∏r iii) ∏ d iv) none of these
14. The circumference of a circle of radius 14cm is
    i) 84cm ii) 88cm iii) 44cm iv) none of these
15. The circumference of a circle of diameter 10cm
    i) 3.14cm ii)314cm iii) 31.4cm iv) none of these

Short Answer Questions Type 1 (2 marks each)

1.. What is the circumference of a circle of diameter 10 cm?
2. Find the breadth of the rectangular land , if its area is 440m^2 and the length is 22m.
3. The perimeter of a rectangular sheet is 100 cm . If the length is 35 cm, find its breadth.
4. The length and breadth of a rectangular piece of land is 250m and 180m respectively. Find its area
5. Find the height of a parallelo gram if its area is 246cm^2 and base is 20cm.
6. Find the area of a circle of radius 30cm . (use ∏ = 3.14)
7. Find the circumference of the circle whose radius is 21 cm.
8. If the circumference of a circular sheet is 154m. Find its radius.
9. How many times a wheel of radius 28cm must rotate to go 352m? (use ∏ = 22/7)
10. Diameter of a circle is 9.8 m . Find its area.
11. Find the circumference of the circle whose radius is 14 cm.
12. What is the circumference of a circle of diameter 28 cm?
13. Find the area of a circle of radius 7cm .
14. Find the height of a parallelo gram if its area is 91.2cm^2 and base is 7.6cm.
15. Find the area of a parallelogram whose base is 6 dm and the corresponding altitude is 30cm.

Short Answer Questions Type 2 (3 marks each)

1. Find the area of a square park whose perimeter is 320m.
2. The perimeter of a rectangular sheet is 100cm . If the lengthis 35 cm, find its breadth. Also find the . . area.
3. The perimeter of a rectangle is 130 cm . If the breadth of the rectangle is 30cm, find its length. Also . find the area of the rectangle.
4. The two sides of a parallelogram ABCD are 6cm and 4cm. The height corresponding to the base CD . is 3cm. Find the area of the parallelogram and the height corres ponding to the base AD.
5. From a circular sheet of radius 4cm, a circle of radius 3cm is removed. Find the area of the . . . remaining sheet. (use ∏= 3.14)
6. The circumference of a circle is 31.4 cm. Find the radius and the area of the circle? (use∏=3.14)
7. A circular flower bed is surrounded by a path 4m wide. The diameter of the flower bed is 66m . . …What is the area of this path? (∏ = 3.14)
8. The minute hand of a circular clock is 15cm long. How far does the tip of the minute hand move in 1 . hour. (∏ = 3.14)

9. Find the perimeter of the figure , which is a semicircle including its diameter. Given diameter AB = 10cm.
10. A circle of radius 2cm is cut out from a square piece of an aluminium sheet of side 6cm. What is the area of the left over aluminium sheet? (use ∏ = 3.14)

Long Answer Questions (4 marks each)

1. . Find the cost of polishing a circular table top of diameter 1.6 m, if the rate of polishing is Rs15/m^2. (use $\prod$ = 3.14)
2. A gardener wants to fence a circular garden of diameter 21m. Find the length of the rope he needs to purchase , if he makes 2 rounds of fence. Also find the cost of rope , if it costs Rs 4 per meter. (use $\prod$ = 22/7)
3. Seema wants to put a lace on the edge of a circular table cover of diameter 1.5 m. Find the length of the lace required and also find its cost if one meter of the lace costs Rs 15. (use $\prod$= 3.14)

4. DL and BM are the heights on sides AB and AD respectively of parallelogram ABCD. If the area of the parallelogram is 1470cm^2, AB = 35cm and AD = 49 cm, find the length of BM and DL.
5. A wire is in the shape of a rectangle. Its length is 40 cm and breadth is 22cm. If the same wire is rebent in the shape of a square, what will be the measure of each side.
6. A garden is 90m long and 75m broad. A path 5m wide is to be built outside and around it. Find the area of the path.
7. A verandah of width 2.25m is constructed all along outside a room which is 5.5m long and 4m wide. Find the area of the verandah and the cost of cementing the floor of the verandah at the rate of Rs 200 per m^2.
8. Two cross roads, each of width 10m, cut at right angles through the centre of a rectangular park of length 700m and breadth 300m and parallel to its sides. Find the area of the roads. Also find the area of the park excluding cross roads.

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

CHAPTER ALGEBRAIC EXPRESSIONS

Multiple choice questions (1 mark each)

1. The number of terms in the expansion 4x + 2xy is
   i) 5 ii) 3 iii) 2 iv) 4
2. Which of the following is a binomial?
   i) 3x ii) 7y + 4 iii) 2 iv) 3x – 4y +2
3. Which of the following is not a binomial?
   i) 2x -3y ii) 4x-3y +5 iii) $5x^2 – 6$ iv) $2x^3 + y$
4. The coefficient of x in 5x-3y is
   i) -3y ii) 5 iii) -3 iv) 5x
5. The coefficient of x in $-2xy^2z$ is
   i) -2 ii) 2 iii) $-2y^2z$ iv) y^2z
6. The factors of the term $2b^2c$ are
   i) 2, b^2, c ii) b^2, 2c iii) 2c, b, b iv) 2, b, b, c
7. The expression $2x^2 – x +5$ is a
   i) monomial ii) binomial iii) trinomial iv) none of these
8. Which of the following are unlike terms?
   i) 2x, -5x ii) $2x^2y$, $3x^2y^2$ iii) 4xy, 7yx iv) 3xzy, -5yzx
9. If m = 2, then the value of 3m -5 is
   i) 2 ii) -1 iii) 1 iv) -2
10. If a = 2 and b = 3, then $a^2 + b^2$ =
    i) 5 ii) 10 iii) 13 iv) 8

11. Which of the following are like terms?
    i) $3x^2y$, $2xy^2$ ii) 6xy, -8yx iii) $5a^2bc$, 5abc iv) none of these
12. If a = 0, b = 1, c = 4, then $4a^2b^3c$ is equal to
    i) 1 ii) 16 iii) 0 iv) none of these
13. The constant term in the expression $4x^2y - 9x^3y - 3$ is
    i) 3 ii) -3 iii) 4 iv) -9
14. The sum of 3ab, -2ab, 8ab is
    i) $9a^2b$ ii) 9ab iii) -9ab iv) none of these

15. The degree of the trinomial $2x^5 - 3x^4 + 1$ is
    i) 5 ii) 4 iii) 1 iv) 9

Short Answer Questions Type 1 (2 marks each)

1. If p = -2, find the value of $4p^2 + 7$
2. If a = 0, b = -1, find the value of $a^2 + ab + 2$
3. What should be the value of 'a' if the value of $2x^2 + x - a$ equals to 5, when x = 0?
4. Subtract $-x^2 + 10x - 5$ from $5x - 10$
5. Subtract $a(b - 5)$ from $b(5 - a)$
6. Simplify combining like terms: $21b - 32 + 7b - 20b$
7. Simplify combining like terms: $p - (p - q) - q - (q - p)$
8. Add: $t - 8tz$, $3tz - z$, $z - t$
9. Add: $a + b - 3$, $b - a + 3$, $a - b + 3$
10. Identify the terms and factors in the expression $- ab + 2b^2 - 3a^2$
11. Identify the terms and factors in the expression and show it by tree diagram : $5x^2y + 7xy^2$
12. Identify the numerical coefficients of terms in the following expressions: $4t^2 - 3t^3 + t$
13. If a = 3 find the value of $4a^2 - a - 2$
14. Simplify, combining like terms $(3y^2 + 5y - 4) + (8y - y^2 - 4)$
15 What should be added to $2a^2 + ab$ to get $3a^2 - 4ab$?

Short Answer Questions Type 2 (3 marks each)

1. Give the algebraic expression for: i) The number y multiplied by itself
   ii) Subtraction of y from x
   iii) One half of the sum of numbers p and q.
2.. Show the terms and factors by tree diagrams: $-ab + 2b^2 - 3a^2$
3. Identify the numerical coefficients of terms (other than constants) in the following:
   $1 + t + t^2 + t^3$, $x + 2xy + 3y$
4. Identify terms which contain y^2 and give the coefficient of y^2.
   $4y^2 - 6x$, $3x^2 - 2xy^2 + y^2$
5. Add $14x + 10y - 12xy - 13$, $18 - 7x - 10y + 8xy$
6. Add by combining the like terms $3a - 2b - ab - (a - b + ab) + 3ab + b - a$
7. Subtract $-m^2 + 5mn$ from $4m^2 - 3mn + 8$
8. What should be added to $x^2 + xy + y^2$ to obtain $2x^2 + 3xy$?
9. Simplify these expressions and find their values if x = 3, a = 2
   $3a + 5 - 8a + 1$, $4 - 7x + 3x + 2$
10. Simplify the expression and find the value if x = 3: $3 (x + 2) + 5x - 7$

Long Answer Questions (4 marks each)

1. Find the value of the expressions, when x = -1
   $x^2 + 2x + 1$, $2x^2 + 2x - 1$
2. Simplify the expression and find its value when a = 5 and b = -3
   $2 (a^2 + ab) + 3 - ab$
3. What should be subtracted from $2a + 8b + 10$ to get $-3a + 7b + 16$
4. From the sum of $3x - y + 11$ and $- y - 11$, subtract $3x - y - 11$
5. If n = 3, find the value of : $6n^2 + 4n - 2$; $- 2n^3 + 2n$

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

CHAPTER EXPONENTS AND POWERS

Multiple Choice Questions (1 mark each)

1. The value of $(2^2)^3$ is
   a) 2^8 b) 2^6 c) 2^3 d)2^9
2. The value of $(4^0 + 6^0) \times 7^0$ is
   a) 2 b) 1 c) 10 d) 70
3. $(-3/4)^3$ equals
   a) 9/16 b) -9/16 c) 27/64 d) -27/64
4. $(14/15)^0$ equals
   a) 0 b) 1 c) 14/15 d) 15/14
5. The base of $(-7)^5$ is
   a) 5 b) 7 c) -7 d) -5
6. The value of $(4^0 - 5^0) \times 6^2$ is
   a) 36 b) -36 c) 0 d) 1
7. For any two rational a and b, $a^4 \times b^4$ is equal to
   a) $(a \times b)^4$ b) $(a \times b)^0$ c) $(a \times b)^8$ d) none of these
8. $(-2/3)^3$ equals
   a) 8/27 b) -8/27 c) -6/9 d) 6/9
9. The exponent $(6)^{-7}$ is
   a) 7 b) -7 c) 6 d) none of these
10. 1.9×10^4 is equal to
    a) 190000 b) 1900 c) 19000 d) none of these
11. The standard form of 127000 is
    a) 1.27×10^5 b) 12.7×10^5 c) 1.27×10^4 d) none of these
12. The value of $(3^0 - 15^0)/ (3 + 15)$ is
    a) -2/3 b) 2/3 c) 1/9 d) 0
13. The value of $(-1)^{100}$ is
    a) -1 b) 1 c) 0 d) none of these
14. $(8^2)^3$ is equal to
    a) 8^{2+3} b) 8^{2-3} c) 8^{2x3} d) none of these
15. In power notations 243 can be expressed as
    a) 2^5 b)3^4 c) 3^5 d) none of these

Short Answer Questions Type 1 (2 marks each)

1. Find the value of i) $3^3 \times 7$ ii) $(-5)^2 \times (-4)^2$

2. Express the number using exponential notation 3125
3. Simplify $(-2)^3 \times (-10)^4$
4. Express in exponential form: i) 5x5x5x5x6x6x6 ii) axaxaxaxaxbxbxcxcxcxc
5. Simplify $(3^0 + 4^0 + 6^0)$
6. Write in expanded form: 60004538
7. Express in standard form: 45080000, 32056.7
8. Express the number using exponential notation 512
9. Write in expanded form: 4530789
10. Simplify $(3^5 \times 3^2)^2$
11. Simplify $\frac{(4^3 \times y^4 \times 6y^3)}{2 \times y^2}$
12. Simplify $(4^{14} / 4^{11}) \times 2^5$
13. Find the number from the following expanded form: $8x10^4 + 6 \times 10^3 + 4 \times 10^2 + 3 \times 10^1 + 5 \times 10^0$
14. Find the number from the following expanded form: $9 \times 10^5 + 2 \times 10^2 + 3 \times 10^1$
15. Express the number using exponential notation 216

Short Answer Questions Type 2 (3 marks each)

1. Write in expanded form: 270543 , 400178
2. Express in standard form: 4508 , 32.5 , 4005
3. Express the number using exponential notation: 108 , 192
4. Simplify $\frac{4^7 \times 3^4}{4^4 \times 4^3 \times (3^2)^2}$
5. Express the following as product of prime factors only in exponential form
   512 x 216
6. Simplify $\frac{25 \times 5^2 \times y^8}{10^3 \times y^4}$
7. Simplify $\frac{(2^5)^2 \times 7^3}{8^3 \times 7}$
8. Simplify and express the following in exponential form: $\frac{4^5 \times a^8 b^3}{4^5 \times a^5 b^2}$
9. Express the following as product of prime factors only in exponential form: 432 x 72
10. Express the numbers in the statements in standard form:
    a) Speed of light in vacuum is 300,000,000m/s
    b) Diameter of earth is 1,27,56,000 m
    c) In a galaxy there are on an average 100,000,000,000 stars.

Long Answer Questions (4 marks each)

1. Find the numeral for : i) $7x10^6 + 3x10^3 + 2x10^0$
   ii) $3x10^5 + 4x10^3 + 2x10^1$
2. Simplify $\frac{(2^5)^2 \times 5^3}{\mathbf{8^2 \times 5}}$
3. Simplify and express in exponential form: $\frac{3x7^2x11^8}{21x11^3}$
4. Express in exponential form 729 x 64
5. Simplify and express in exponential form : $\frac{2^8 \times a^5}{4^3 \times a^3}$

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

CHAPTER SYMMETRY

Multiple choice questions (1 mark each)

1. Which of the following alphabets has a line of symmetry?
   i) Q ii) W iii) R iv) Z
2. The number of lines of symmetry in a circle are
   i) 3 ii) 2 iii) 4 iv) infinite
3. Which of the following figures has 4 lines of symmetry?
   i) quadrilateral ii) square iii) rectangle iv) circle

4. The number of lines of symmetry in a rectangle is
   i) 2 ii) 4 iii) 6 iv) 4
5. The order of rotational symmetry in the letter N is
   i) 1 ii) 2 iii) 3 iv) no order
6. The number of lines of symmetry in a regular pentagon is
   i) 3 ii) 4 iii) 6 iv) 5
7. Which of the following triangles does not have any line of symmetry?
   i) isosceles ii) scalene iii) equilateral iv) right angled isosceles
8. Which of the following alphabets has vertical line of symmetry?
   i) B ii) K iii) V iv) R
9. Which of the following has horizontal line of symmetry?
   i) 3 ii) A iii) 7 iv) M
10. Which of the following figure has no line of symmetry?
    i) square ii) circle iii) parallelogram iv) rectangle
11. Which of the following figure has four lines of symmetry?
    i) Rectangle ii) Rhombus iii) Trapezium iv) Square
12. An isosceles triangle has
    i) one line of symmetry ii) 2 lines of symmetry iii) no lines of symmetry iv) none of these
13. An equilateral triangle has
    i) 3 lines of symmetry ii) 2 lines of symmetry iii) one line of symmetry iv) none of these
14. The order of rotational symmetry of a square is
    i) 1 ii) 2 iii) 3 iv) 4
15. The order of rotational symmetry of letter S is
    i) one ii) two iii) three iv) none of these

Short Answer Questions (3 marks each)

1 Draw and state the number of lines of symmetry for the following figures:
   i) an equilateral triangle ii) a rectangle iii) an isosceles triangle
2. Give three examples of shapes with no line of symmetry.
3. What other name can you give to the line of symmetry of :
   i) an isosceles triangle ii) a circle
4. Draw and show vertical line of symmetry in any three letters of English alphabet.
5. Draw and show horizontal line of symmetry in any three letters of English alphabet.
6. Mention any three letter of English alphabet which have both vertical and horizontal line of symmetry.
7. State the number of lines of symmetry for the following figures:
   i) a square ii) a parallelogram iii) a regular hexagon
8. Name any three figures that have both line symmetry and rotational symmetry.

9. Draw a rough sketch of a triangle with both line and rotational symmetry.
10. Draw a rough sketch of a triangle with only line symmetry and no rotational symmetry of order more than

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

CHAPTER VISUALISING SOLID SHAPES

Multiple choice questions (1 mark each)

1. Number of faces in a cube is
   i) 8 ii) 6 iii) 4 iv) 3
2. Number of edges in a cube is
   i) 10 ii) 12 iii) 8 iv) none of these
3. Number of vertex of a cuboid is
   i) 6 ii) 8 iii) 10 iv) 12
4. Number of curved surfaces in a cone is
   i) 2 ii) 3 iii) 1 iv) 4
5. The number of faces in a pyramid , whose base is a triangle is
   i) 4 ii) 5 iii) 3 iv) none of these
6. Which of the following is a plane figure?
   i) sphere ii) cylinder iii) tetrahedron iv) rectangle
7. Number of edges in a cylinder is
   i) 4 ii) 2 iii) 1 iv) 3
8. What cross – section do you get when you give a vertical cut to a brick?
   i) rectangle ii) square iii) triangle iv) none of these
9. Sphere is a
   i) plane figure ii) solid figure iii) both (i) and (ii) iv) none of these
10. A cylinder has
    i) no vertex ii) one vertices iii) two vertices iv) none of these

Short Answer Questions (2 marks each)

1. State the number of faces and edges of a cube.
2. What cross section do you get when you give a vertical cut to the following solids:
   i) a circular pipe ii) an ice cream cone
3. What cross section do you get when you give a hori zontal cut to the following solids:
   i) a round apple ii) a brick
4. Plane figures are of _____ dimensions and the solid shapes are of _____dimensions.
5. Give 4 examples of plane figures.
6. Give 4 examples of solid shapes.
7. Draw a suitable net for making a cube.
8. State the number of vertices and edges of a cube.
9. A birthday cap is an example of _____ and a dice is an example of _____.
10. An Almirah is an example of _____ and a cricket ball is an example of _____

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX