GRADE :-VII
**SUBJECT :- MATHS**

MARKS:-100
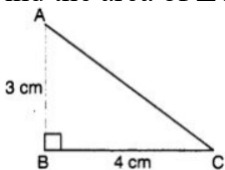**TIME:- 3Hrs.**

Section A

This sections comprises of multiple choice question (MCQS) *(1 mark each)*

1. Which of the following pairs of terms is a pair of like terms?
   a) 7xy, 14xy   b) m^2p, mp^2 c) $6xz$, $12x^2z^2$ d) -13x, -13y

2. The radius of a circle is 7 cm. Find its area.
   b) 154 cm   b) 77 cm²   c) 11 cm²   d) 22 cm²

3. Out of 40 children in a class . 10 are boys, what is the percentage of boys?
   a) 10%   b) 40%   c) 4%   d) 25%

4. The name of the solid shape is
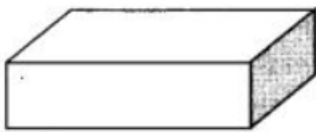
   a) Cuboid   b) cube   c) pyramid   d) cone

5. Find the value of the expression 5n – 3 for n = -1
   a) 5   b) -3   c) 8   d) -8

6. Which of the following rational numbers is not equivalent to $\frac{3}{5}$?
   a) $\frac{6}{10}$ b) $\frac{-3}{-5}$ c) $\frac{9}{15}$ d) $\frac{12}{24}$

7. English alphabet "F" has number of line symmetry _____.
   a) 1   b) 2   c) 4   d) 0

8. The circumference of a circle of a radius r is
   a) πr b) $2\pi r$ c) πr^2 d) $\frac{1}{2}\pi r^2$

9. $\frac{7}{12} \div \left(-\frac{7}{12} \right)$
   a) 1   b) -1   c) 7   d) -7

10. Find the area of Δ ABC

   a) 3 cm²   b) 4 cm²   c) 6 cm²   d) 12 cm²

11. The number of faces of the solid shape given below is
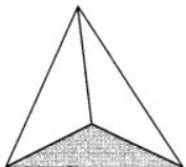
   a) 1   b) 2   c) 3   d) 4

12. The shadow of a cube when seen under the lamp of an overhead projector is
   a) Square   b) circle   c) triangle   d) rectangle

13. What is the coefficient of y^2 in the expression $3y^2 + 4x$?
   a) 1   b) 2   c) 3   d) 4

14. 70% = _____% - 30%
   a)100%   b) 40%   c) 70%   d) 0%
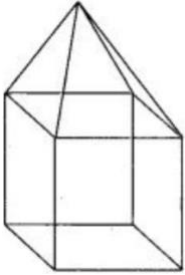
15. Area of a parallelogram =
    a) Base × height
    c) $\frac{1}{3}$ × base × height
    b) $\frac{1}{2}$ × base × height
    d) $\frac{1}{4}$ × base × height
16. Find the value of the expression $100 - 10 x^3$ for $x = 0$
    a) 10
    b) -10
    c) 100
    d) -100
17. The number of vertices of the solid shape given below is
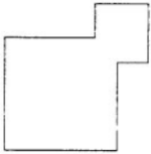

    a) 9
    b) 4
    c) 6
    d) 8

18. $\frac{2}{9} \times \frac{27}{8} =$
    a) $\frac{4}{3}$
    b) $\frac{3}{4}$
    c) 3
    d) 4
19. How many lines of symmetry are there in the following figure?

    a) 1
    b) 2
    c) 3
    d) 4
20. The area of a square is 625 m². Find its side
    a) 25 m
    b) 50 m
    c) 125 m
    d) 5 m
21. How many lines of symmetry are there in a rectangle?
    a) 1
    b) 2
    c) 3
    d) 4
22. If $\frac{-3}{-5} = \frac{9}{?}$, then ? =
    a) 15
    b) -15
    c) 9
    d) -9
23. Two cubes of edge length 2 cm are placed side by side. The length of the resulting cuboid is
    a) 2 cm
    b) 4 cm
    c) 1 cm
    d) none of these
24. An article was purchased for ₹ 100 and sold for ₹ 120. What is the profit?
    a) ₹ 20
    b) ₹ 100
    c) ₹ 120
    d) None of these
25. Which of the following is a positive rational number?
    a) $\frac{-1}{2}$
    b) $\frac{2}{-3}$
    c) $\frac{-3}{-4}$
    d) -5
26. If the perimeter of a square is 36 cm, then its area is
    a) 81 sq.cm
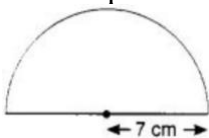   b) 18 sq.cm
    c) 9 sq.cm
    d) 6 sq.cm
27. What cross-section do you get when you give a vertical cut to a brick?
    a) Square
    b) Rectangle
    c) Triangle
    d) Circle
28. Find the ratio of 3 km to 300 m.
    a) 10:1
    b) 1:10
    c) 100:1
    d) 1:100

29. The perimeter of the following figure is

←7 cm→

    a) 27 cm
    b) 28 cm
    c) 36 cm
    d) 40 cm
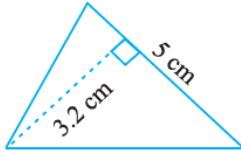30. How many terms are there in the expression 2y+ 5?
    a) 1
    b) 2
    c) 3
    d) 4

This section comprises with very short answer type questions. (2 marks each)

31. Find the area of following triangle:

32. Find the whole quantity 40% of it is 24 min.

33. **Fill in the boxes with the correct symbol out of >, <, and =.**

a) $\dfrac{-7}{8}$ **[ ]** $\dfrac{14}{-16}$

b) $\dfrac{5}{-11}$ **[ ]** $\dfrac{-5}{11}$

c) 0 **[ ]** $\dfrac{-7}{6}$

d) $\dfrac{1}{-3}$ **[ ]** $\dfrac{-1}{4}$

34. Give the algebraic expression in the following cases:
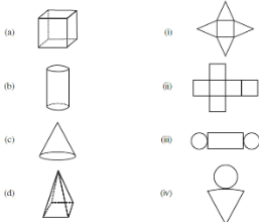   a) One-half of the sum of numbers x and y.
    b) Numbers x and y both squared and added.
    c) One-fourth of the product of numbers p and q.
    d) The number z multiplied by itself.

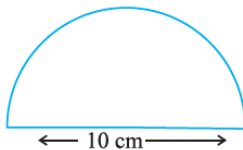35. Give the order of rotational symmetry

36. What should be added to $x^2 + xy + y^2$ to obtain $2x^2 + 3xy$?

37. Match the nets with appropriate solids:

38. Find the perimeter of the adjoining figure, which is a semicircle, including its diameter.

39. The side of a square is 2.5 cm. Find its perimeter and area.

40. Simplify the expression and find the value if $x = 2$,

$4(2x - 1) + 3x + 11$

Section C

This section comprises of short answer type questions. *(3 marks each)*

41. Identify terms which contain x and give the coefficient of x.

Sl.No.	Expression	Terms	Coefficient of x
(i)	$y^2x + y$		
(ii)	$13y^2 - 8yx$		
(iii)	$12xy^2 + 25$		

42. Find the product:
   i) $\frac{9}{2} \times (\frac{-7}{4})$
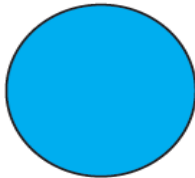   ii) $(\frac{-4}{5}) \div (\textbf{-3})$
   iii) $\frac{-2}{13} \times \frac{3}{4}$

43. Draw the net of a cuboid open from the top.

44. Here are the shadows of some 3-D objects, when seen under the lamp of an overhead projector. Identify the solid(s) that match each shadow. (There may be multiple answers for these! Give any two)

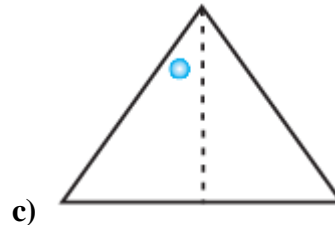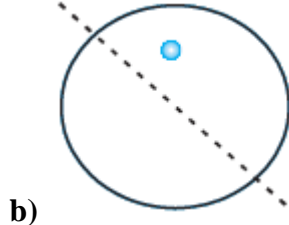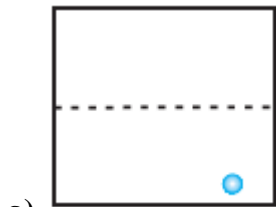   a)   b)   c)
   A circle   A triangle

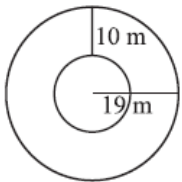   A rectangle

45. . Given the line(s) of symmetry, find the other hole(s):

a)   b)   c)

46. Find the circumference of the inner and the outer circles, shown in the adjoining figure? (Take $\pi = 3.14$)

10 m
19 m

Section D

This section comprises of long answer type questions.   *(5 marks each)*

47. Solve

a) Find, *when* P = ₹4550, R = 8%, T = 5 years
   i) the simple interest (SI) ,
   ii) amount (A)

b) Find the Time (T) , when P = 840, R = 3%, SI = 210

c) Convert the following ratios as percentages.
   i) 3:4
   ii) 7:5

48. i) Add:
   a) 3mn, − 5mn, 8mn, − 4mn
   b) t − 8tz, 3tz − z, z − t
   c) − 7mn + 5, 12mn + 2, 9mn − 8, − 2mn − 3

   ii) Subtract:
   a) (a − b) from (a+b)
   b) $-m^2 + 5mn$ from $4m^2 - 3mn + 8$

49. Find the missing values.

i)

S.No.	Base	Height	Area of the Parallelogram
a.	20 cm		246 cm^2
b.		8.4 cm	48.72 cm^2

ii) A picture is painted on a cardboard 8 cm long and 5 cm wide, such that there is a margin of 1.5 cm along each of its sides. Find the total area of the margin.

50. i) Identify the terms and their factors in the following expressions.
Show the terms and factors by tree diagrams.
a) $1 + x + x^2$
b) $5xy^2 + 7x^2y$
ii) Identify terms and factors in the expressions given below.
a) $xy + 2x^2y^2$
b) $-4x + 5$
c) $5y + 3y^2$

Section E

This section comprises with case study type questions.   *(4 marks each)*

51. Find the area of footpath 1 m wide, made around a garden of length 50 m and breadth 30 m.
52. a) Sandra sells sea fish in the market. In the morning, he opened his shop with   (15x + 20) fish.
He sold (x + 5) fish in the morning, (3x + 10) fish in the afternoon and   (10x – 5) fish in the evening.
How many fish are left with him at the end of the day?
b) Read the following passage and answer the given question:
National association for the Blind (NAB) aimed to empower and will inform visually challenged
population of our country population, thus enabling them to lead a life of dignity and productivity.
Raman donated ₹(x +y) to NAB
Total (x² - y²) students donated ₹(x-y) each for the help of blind people.
i) Total amount donated by all students is?
ii) Raman donated ₹ (x + y) and Sohan donated ₹ (3x – 4y) then total money donated by Raman and
Sohan?
53. The inner circumference of a circular track is 264 cm and the width of the track is 7 cm.
a) The radius of the inner track is?
b) The radius of the outer circumference is?
c) The length of the outer circumference is?
d) The cost of fencing the outer circumference at the rate of ₹ 50 per cm is?

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