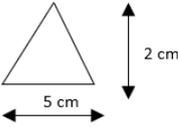


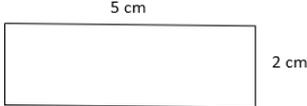
General Instructions:

- This Question paper contains - five sections A, B, C, D and E. Each section is compulsory. However, there are internal choices in some questions.
- Section A has 20 MCQ's based questions of 1 mark each.
- Section B has 5 Very Short Answer (VSA)-type questions of 2 marks each.
- Section C has 6 Short Answer (SA)-type questions of 3 marks each.
- Section D has 4 Long Answer (LA)-type questions of 5 marks each.
- Section E has 3 source based/case based/passage based/integrated units of assessment (4 marks each) with sub parts.

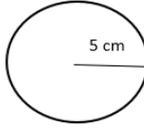
Section - A (Each question carries 01 mark)

- (1) A class has 30 girls and 40 boys. What is ratio of number of girls to total students in class
 (a) 3:7 (b) 4:7 (c) 3:4 (d) 4:3
- (2) Convert 45/60 into percentage
 (a) 25% (b) 50% (c) 75% (d) None of these
- (3) What will be the buying price of a soap at Rs. 100 when 5% sales tax is added?
 (a) Rs 105 (b) Rs 110 (c) Rs 95 (d) Rs 90
- (4) Identify the like terms: $3ab, -4b^2, -6ab$.
 (a) $3ab, -6ab$ (b) $-4b^2, 3ab$ (c) $3ab, 6ab$ (d) $-4b^2, 6ab$
- (5) Select the mathematical equalities which is not correct.
 (a) $(a - b)^2 = a^2 - b^2 + 2ab$ (b) $(a + b)^2 = a^2 + b^2 + 2ab$
 (c) $(a - b)^2 = a^2 + b^2 - 2ab$ (d) $(a + 1)(a + 2) = a^2 + 3a + 2$
- (6) Using the standard identity, $(x+a)(x+b) = x^2 + (a+b)x + ab$ find which of the following is the value of $(2m + 2)(2m + 3)$.
 a) $4m^2 + 10m + 5$ b) $4m^2 + 10m + 6$
 c) $4m^2 + 10m - 6$ d) $4m^2 + 10m - 5$
- (7) What is the value of 8.9×10^{-6} ?
 a) -0.000089 b) -0.0000089
 c) 0.000089 d) 0.0000089
- (8) What is the surface area of a cube whose side is 4 cm?
 a) 46 cm^2 b) 96 cm^2 c) 48 cm^2 d) 92 cm^2
- (9) Factor of $2xy - 4y$
 (a) $2x(y - 1)$ (b) $(x + y)(x - y)$ (c) $2y(x - 2)$ (d) None of these
- (10) Which of the following has largest area.
- 

(i)



(ii)



(iii)
- (a) Triangle (b) Rectangle (c) Circle (d) All are equal
- (11) The value of $(16^4)^4 \div 16^{15}$
 (a) 16^{31} (b) 16^{-1} (c) 16 (d) 16^{-2}
- (12). Find the value of $(2^3)^2$.
 (a) 128 (b) 16 (c) 32 (d) 64
- (13) What is the standard form of 80460000?
 a) 8.046×10^7 b) 8.046×10^6 c) 8.046×10^9 d) 8.046×10^8

(14). Name the French mathematician who worked a lot in the field coordinate Geometry and he is considered as the father of coordinate geometry.

- (a) Sir Pythagoras (b) sir Isaac Newton
(c) Sir Leonhard Eulers (d) Sir Rene Descartes

OR

(4,5) and (5,4) are the same point

- (a) True (b) False
(c) Can not say (d) None of these

(15) Which of the following point lie on Y axis

- (a) (4, -3) (b) (4, 0)
(c) (0,-5) (d) (4, 6)

(16) Ordinate of a point is -8 and Abscissa is 6 then the coordinate and the position where it lie is

- (a) (6,-8) lie in II Quadrant (b) (6,-8) ,lie in IV Quadrant
(c) (-8,6) lie in II quadrant (d) (-8,6) lie in IV Quadrant

(17) Factor of $(x^4 - y^4)$ is

- (a) $(x^2 - y^2)(x^2 + y^2)$ (b) $(x^2 + y^2)(x + y)(x - y)$
(c) both a and b (d) none of these

(18) Factor of $x^2 - 9x + 14$ is

- (a) $(x-7)(x-2)$ (b) $(x-7)(x+2)$
(c) $(x-2)(x+7)$ (d) None of these

(19) If side of cube is doubled then its lateral surface area will become

- (a) same (b) Two times
(c) 4 times (d) None of these

(20) Area of base of a cuboid is 40 sq cm and its height is 6 cm then its volume is

- (a) 120 cubic cm (b) 160 cubic cm
(c) 160 sq cm (d) None of these

Section - B (Each question carries 02 marks)

(21) Subtract $5x^2 - 4y^2 + 6y - 3$ from $7x^2 - 4xy + 8y^2 + 5x - 3y$.

(22) Using appropriate identities, evaluate (i) 103^2 (ii) 298×302

(23) Find the area of rhombus whose diagonals are 8 cm and 6cm.

OR

The dimensions of a cuboid are in the ratio of 2:3:4 and its total surface area is 2600m^2 . Find the dimensions.

(24) Factorise: $4x^2 - 9y^2$

(25) Factorise: (i) $4x^2 + 4xy$ (ii) $15xy - 6x + 5y - 2$

Section - C (each question carries 03marks)

(26) Find m so that (i) $(-3)^m \times (-3)^5 = (-3)^7$ (ii) $2^{m-3} = 1$

OR

Simplify: $\frac{25 \times y^{-4}}{5^{-4} \times 10 \times y^{-8}}$

(27) Ravi buy a study table marked at Rs 785, if he gets a discount 20% find its Selling Price.

(28) Locate the following point on cartesian plane A(5,8) ,B(7,3) and C(2,3),join AB,BC and AC .Shade the figure obtained .

(29) Evaluate (i) $(4^0 + 4^{-1} \div 2^2)$ (ii) $\frac{8^{-1} \times 5^3}{2^{-4}}$

(30) Find the area of rectangular paper whose length and breadth are $(2x+y)$ and $(2x -y)$ unit. Also, find area if $x=4$ cm and $y=2$ cm

(31) Factorise using middle term splitting

(i) $y^2 + 15y + 56$

(ii) $x^2 - 10x - 24$

Section - D (Each question carries 05 mark)

(32) The internal measures of a cuboidal room are $12\text{ m} \times 8\text{ m} \times 4\text{ m}$. Find

(i) Area of four walls of a room

(ii) Area of ceiling

(iii) Cost of whitewashing all four walls and ceiling of the room, if the cost of whitewashing is Rs 5 per square metre.

OR

A road roller takes 750 complete revolutions to move once over to level a road. Find the area of the road if the diameter of a road roller is 84 cm and length is 1 m

(33) Simplify: (Do any 2 questions)

(i) $(a + b)(c - d) + (a - b)(c + d) + 2(ac + bd)$

(ii) $(7m - 8n)^2 + (7m + 8n)^2$

(iii) $(x^2 - 5)(x + 5) + 25$

(34) Factorise using suitable identity: - (do any 2)

(i) $x^4 - 81$

(ii) $x^2 - 12x + 36$

(iii) $(4X^2 - 12xy + 9y^2)$

(35) A sum of Rs 10,000 is borrowed at a rate of interest 10 % per annum compounded half-yearly. Find

(i) the amount to be paid after 6 months

(ii) the amount to be paid after 1 year

OR

Rs 20000 is deposited in bank, if bank allows 10 % rate of interest per annum for 2 years

Find (i) simple interest for 2 years.

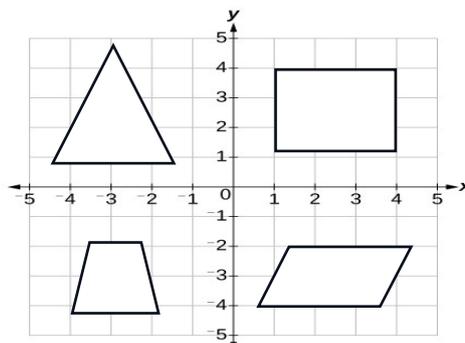
(ii) Compound interest for 2 years if compounded annually.

(iii) Difference of simple interest to compound interest.

Section - E (Each question carries 04 marks)

Case study 1

36) Sarita, a student of class VIII made four different figures on cartesian plane to integrate coordinate geometry to understanding plane figures and ask some questions to her friends. considering you as Sarita's friend answer the following questions.



(a) Which figure lies in III Quadrant.

$\frac{1}{2}$ marks

- (b) Which figure lie in IV th Quadrant ½ marks
- (c) Write coordinates of all four points of a rectangle. 1 mark
- (d) Write the coordinates of points of triangle. 1 mark
- (e) Find the area of rectangle. 1 mark

Case study 2

37) Anup, A teacher after retirement thought to stay in village house .After going there he found that there was shorted of water in village , so he thought of constructing a well .He hired some labours and guided them that well should be 7m in diameter and 20 m deep.

Based on above information answer the following questions

- (a) What is the shape of well? (1)
- (b) What will be the radius of the well? (1)
- (c) What will be the total surface area of well (2)

OR

- (d) What will be the volume of earth dug out? (2)

Case study 3

38) New GST rate 2025 is as follows: -

Product	GST %	Product	GST %
Sugar	5%	Ghee	12%
Tea	5%	Fruit Juice	12%
	5%	Freeze	28%
Butter	12%	AC	28%

Amina visited a departmental store and purchased the following item whose selling price is as follows

Product	Quantities	Selling Price
Sugar	Pack of 5 Kg	200
Tea	Pack of 1 Kg	480
Tooth Paste	Pack of 250 g	480
Ghee	1 Kg	1000

- (a) GST on sugar (1 marks)
- (b) GST on tea and tooth paste are same (True or False) (½ marks)
- (c) Difference between the highest and lowest GST rate mentioned above is ___ (½ marks)
- (d) Calculate the bill amount (2 marks)