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PRACTICE PAPER 07 (2023-24)
PERIMETER AND AREA & ALGEBRAIC EXPRESSIONS

SUBJECT: MATHEMATICS
CLASS : VII

MAX. MARKS : 40
DURATION : 1½ hr

General Instructions:

- (i). All questions are compulsory.
- (ii). This question paper contains 20 questions divided into five Sections A, B, C, D and E.
- (iii). **Section A** comprises of 6 MCQs of 1 mark each. **Section B** comprises of 1 CCT question of 4 marks each which contains 4 MCQs. **Section C** comprises of 3 questions of 2 marks each. **Section D** comprises of 4 questions of 3 marks each and **Section E** comprises of 3 questions of 4 marks each.

SECTION – A

Questions 1 to 6 carry 1 mark each.

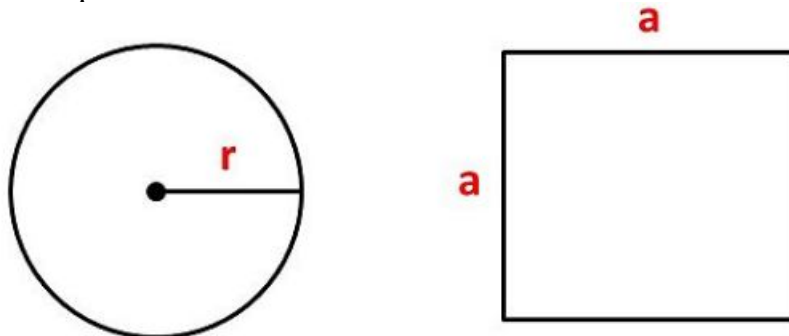
1. The circumference of two circles are in the ratio 2 : 3. The ratio of their areas is
(a) 2 : 3 (b) 4 : 9 (c) 9 : 4 (d) none of these
2. In making 1000 revolutions, a wheel covers 88 km. The diameter of the wheel is
(a) 14 m (b) 24 m (c) 28 m (d) 40 m
3. A wire is in the shape of a square of side 10 cm. If the wire is rebent into a rectangle of length 12 cm, find its breadth.
(a) 12 cm (b) 7 cm (c) 8 cm (d) 9 cm
4. What should be value of 'a' if $y^2 + y - a$ equals to 3 for $y=1$
(a) -1 (b) -5 (c) 5 (d) 0
5. Which of the following is a pair of like terms?
(a) $-7xy^2z$, $-7x^2yz$ (b) $-10xyz^2$, $3xyz^2$ (c) $3xyz$, $3x^2y^2z^2$ (d) $4xyz^2$, $4x^2yz$
6. The length of a side of square is given as $2x + 3$. Which expression represents the perimeter of the square?
(a) $2x + 16$ (b) $6x + 9$ (c) $8x + 3$ (d) $8x + 12$

SECTION – B(CCT Questions)

Questions 7 to 10 carry 1 mark each.

CCT Question

Aditi bought two wires of same length 44cm. She bent one wire into the shape of a circle and another wire into the shape of a square.



Answer the following questions based on the above information:

7. Find the radius of the circle.
(a) 8cm (b) 7cm (c) 5cm (d) 6cm

8. Find the area of the circle.
 (a) 154 cm^2 (b) 150 cm^2 (c) 125 cm^2 (d) 160 cm^2
9. What is length of each side of the square?
 (a) 22 cm (b) 14 cm (c) 11 cm (d) 7 cm
10. What is the difference between the area of the circle and area of the square?
 (a) 25 cm^2 (b) 33 cm^2 (c) 22 cm^2 (d) 55 cm^2

SECTION – C

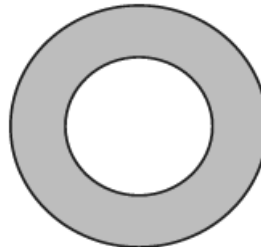
Questions 11 to 13 carry 2 marks each.

11. Two sides of a parallelogram are 20 cm and 25 cm. If the altitude corresponding to the sides of length 25 cm is 10 cm, find the altitude corresponding to the other pair of sides.
12. A rectangular field is 48 m long and 20 m wide. How many right triangular flower beds, whose sides containing the right angle measure 12 m and 5 m can be laid in this field?
13. When $a = 0$, $b = -1$, find the value of the given expressions:
 (i) $2a + 2b$ (ii) $2a^2 + b^2 + 1$

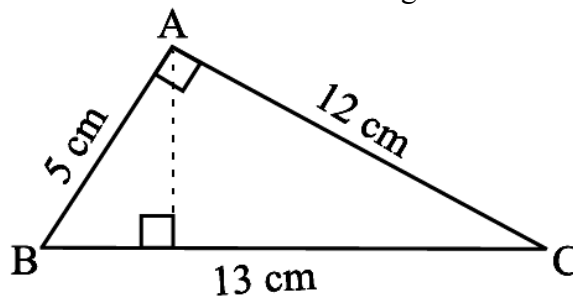
SECTION – D

Questions 14 to 17 carry 3 marks each.

14. A gardener wants to fence a circular garden with a diameter of 21 m. Find the length of the rope he needs to purchase, if he makes 2 rounds of the fence. Also, find the cost of the rope, if it costs ₹ 4 per meter. (Take $\pi = 22/7$)



15. ΔABC is right angled at A (see below figure). AD is perpendicular to BC. If $AB = 5 \text{ cm}$, $BC = 13 \text{ cm}$ and $AC = 12 \text{ cm}$, Find the area of ΔABC . Also find the length of AD.



16. If $p = -2$, find the value of:
 (i) $4p + 7$ (ii) $-3p^2 + 4p + 7$ (iii) $-2p^3 - 3p^2 + 4p + 7$
17. Identify the terms and their factors in the following expressions: $-ab + 2b^2 - 3a^2$
 Show the terms and factors by tree diagrams.

SECTION – E

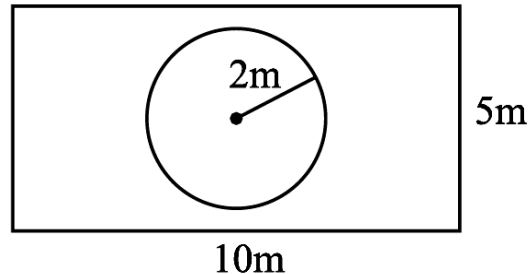
Questions 18 to 20 carry 4 marks each.

18. Simplify the expressions and find the value if x is equal to 2

(i) $x + 7 + 4(x - 5)$ (ii) $3(x + 2) + 5x - 7$ (iii) $6x + 5(x - 2)$ (iv) $4(2x - 1) + 3x + 11$

19. The adjoining figure represents a rectangular lawn with a circular flower bed in the middle. Find:

- (i) the area of the whole land
- (ii) the area of the flower bed
- (iii) the area of the lawn excluding the area of the flower bed
- (iv) the circumference of the flower bed.



20. DL and BM are the heights on sides AB and AD , respectively, of parallelogram $ABCD$ (see below Figure). If the area of the parallelogram is 1470 cm^2 , $AB = 35 \text{ cm}$ and $AD = 49 \text{ cm}$, find the length of BM and DL .

