PM SHRI KENDRIYA VIDYALAYA GACHIBOWLI,GPRA CAMPUS,HYD-32

PRACTICE PAPER 06 (2023-24)

PERIMETER AND AREA & ALGEBRAIC EXPRESSIONS

SUBJECT: MATHEMATICS **MAX. MARKS : 40**

CLASS : VII **DURATION : 1½ hr**

General Instructions:

(i). **All** questions are compulsory.

(ii). This question paper contains 2**0** questions divided into five Sections A, B, C, D and E.

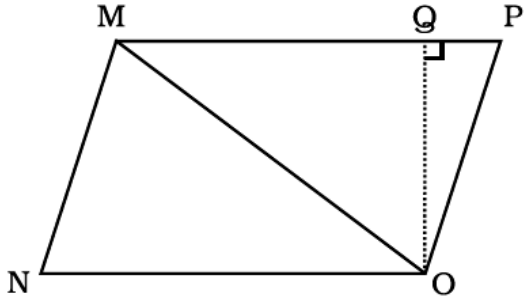
(iii). **Section A** comprises of **6 MCQs** of **1 mark** each. **Section B** comprises of **1 CCT question** of **4 marks** each which contains **4 MCQs**. **Section C** comprises of 3 questions of **2 marks** each. **Section D** comprises of 4 questions of **3 marks** each and **Section E** comprises of 3 questions of **4 marks** each.

SECTION – A

Questions 1 to 6 carry 1 mark each.

1. Ratio of area of ΔMNO to the area of parallelogram MNOP in the below figure is

(a) 2 : 3 (b) 1 : 1 (c) 1 : 2 (d) 2 : 1



2. A wire is bent to form a square of side 22 cm. If the wire is rebent to form a circle, its radius is

(a) 22 cm (b) 14 cm (c) 11 cm (d) 7 cm

3. Area of a rectangle and the area of a circle are equal. If the dimensions of the rectangle are 14cm × 11 cm, then radius of the circle is

(a) 21 cm (b) 10.5 cm (c) 14 cm (d) 7 cm.

4. Identify the binomial out of the following:

(a) $3xy^2 + 5y - x^2y$ (b) $x^2y - 5y - x^2y$ (c) xy + yz + zx (d) $3xy^2 + 5y - xy^2$

5. The sum of the coefficients in the monomials $3a^2b$ and $-2ab^2$ is

(a) 5 (b) −1 (c) 1 (d) 6

6. The sum of the values of the expression $2x^2 + 2x + 2$ when $x = -1$ and $x = 1$ is

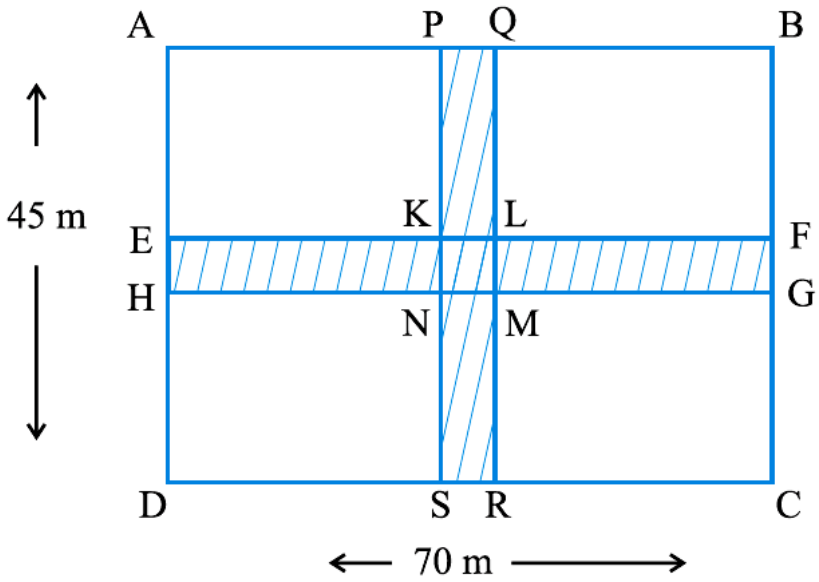
(a) 6 (b) 8 (c) 4 (d) 2

SECTION – B(CCT Questions)

Questions 7 to 10 carry 1 mark each.

CCT Question

In Gulmohar colony, two cross roads, each of width 5 m, run at right angles through the centre of a rectangular park of length 70 m and breadth 45 m and parallel to its sides. Ram is a student of Class VII residing in Gulmohar park. One day he has taken all the measurements and drawn a rough diagram of two cross roads as shown in below figure:



Answer the following questions based on the above information:

7. Find the Area of the rectangle PQRS
(a) 225 m^2 (b) 350 m^2 (c) 25 m^2 (d) 550 m^2

8. Find the Area of the rectangle EFGH
(a) 225 m^2 (b) 350 m^2 (c) 25 m^2 (d) 550 m^2

9. Find the Area of the Square KLMN
(a) 225 m^2 (b) 350 m^2 (c) 25 m^2 (d) 550 m^2

10. Find the area of the road.
(a) 225 m^2 (b) 350 m^2 (c) 25 m^2 (d) 550 m^2

SECTION – C

Questions 11 to 13 carry 2 marks each.

11. Find the area of a circle whose diameter is 8.4 cm

12. The circumference of a circle is 3.14 m, find its area.

13. Find the value of the following expressions for a = 3, b = 2.
(i) a + b (ii) 7a – 4b (iii) $a^2 + 2ab + b^2$ (iv) $a^3 - b^3$

SECTION – D

Questions 14 to 17 carry 3 marks each.

14. In the given figure, ABCD is a parallelogram, CE ⊥ AB and BF ⊥ AD. If AB = 12cm, AD = 10cm and CE = 8cm, find BE.

15. Find the value of the following expressions when n = – 2.
(i) 5n – 2 (ii) $5n^2 + 5n - 2$ (iii) $n^3 + 5n^2 + 5n - 2$

16. Identify terms which contain y^2 and give the coefficient of y^2.
(i) $8 - xy^2$ (ii) $5y^2 + 7x$ (iii) $2x^2y - 15xy^2 + 7y^2$

17. Identify the terms and their factors in the expressions: $1 + x + x^2$
Show the terms and factors by tree diagrams.

SECTION – E

Questions 18 to 20 carry 4 marks each.

18. Simplify these expressions and find their values if x = 3, a = – 1, b = – 2.
(i) 3x – 5 – x + 9 (ii) 2 – 8x + 4x + 4 (iii) 3a + 5 – 8a + 1 (iv) 10 – 3b – 4 – 5b

19. The radius of one circular field is 20 m and that of another is 48 m. Find the radius of the third circular field whose area is equal to the sum of the areas of two fields.

20. In the below figure, *ABCD* is a parallelogram, $DL \perp AB$. If $AB = 20$ cm, $AD = 13$ cm and area of the parallelogram is 100 cm^2, find *AL*.