Half Yearly Examination 2025-26
Class – VIII
Subject – Mathematics

Time : 2.30 hrs. M.M.- 80

Instructions :

1. You will not be allowed to write during first 15 minutes. This time is to be spent in reading the question paper.
2. This paper is divided in to two sections. Section A is compulsory. Attempt any four questions from Section B.

Section – A [Compulsory]

Q. 1. Choose the most appropriate option. [15]

(i) Which of the following is a binomial:
(a) $2x \times y$ (b) $3x^2y + 4xy^2$ (c) $3a \div 2b$ (d) $8x^2y + 16x^2y$

(ii) The value of $(243)^{\frac{3}{5}}$ is :
(a) 81 (b) 9 (c) 27 (d) 18

(iii) The perimeter of a semicircle, whose radius is 9.1 cm is :
(a) 50.2 cm (b) 28.6 cm (c) 46.8 cm (d) 25.1 cm

(iv) In which quadrant does (-3, -4) lie ?
(a) First (b) Second (c) Third (d) Fourth

(v) Which of the following geometrical figures has exactly two lines of symmetry ?
(a) Square (b) rectangle (c) Parallelogram (d) Isosceles trapezium

(vi) In which of the following solids, ~~none~~ two of the faces is triangular ?
(a) Triangular Prism (b) Square Pyramid (c) Pentagonal prism (d) Hexagonal Prism

(vii) If $x + y = 6$ and $xy = 10$, the value of $(x^2 + y^2)$ is :
(a) 16 (b) 10 (c) 26 (d) 36

(viii) 72 men do a piece of work in 25 days. In how many days will 30 men do the same work ?
(a) 45 days (b) 60 days (c) 38 days (d) 70 days

(ix) In how many years will ₹ 950 produce ₹ 399 as Simple interest at 7% ?
(a) 6 years (b) 8 years (c) 4 years (d) 7 years

(x) $\sqrt{72} \times \sqrt{98} = ?$
(a) 42 (b) 74 (c) 64 (d) 84

(xi) If $3^{x-1} + 3^{x+1} = 90$, then x is equal to :
(a) 0 (b) 1 (c) 2 (d) 3

(xii) Distance of a point from x-axis is called :
(a) Abscissa (b) Ordinate (c) Co-ordinate (d) None of these

(xiii) A park is 8 metre long and 6 meter broad. The length of the longest pole that can be placed in the park is :
(a) 12m (b) 10m (c) 8m (d) 11m

(xiv) Euler's formula is :
(a) F + E + V = 2 (b) F – E + V = 2 (c) F – E – V = 2 (d) F + E – V = 2

(xv) In what time will a sum of money double itself at 6 ¼% p.a. simple interest ?
(a) 5 years (b) 12 years (c) 8 years (d) 16 years

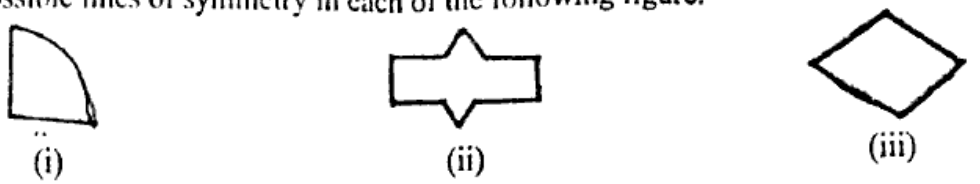
Q. 2. Fill in the blanks. [5]

(i) The area of a rhombus is half the product of its _____
(ii) A square prism may also be called a _____
(iii) If m articles cost ₹ n in all, then the total cost of n articles is ₹
(iv) There are ..... perfect cubes between 1 and 100.
(v) If $3 \times 3^n = 3$, then the value of n is _____

Q.3(a) Find the amount and the compound interest on ₹ 8000 for 2 years at 6% p.a. compounded annually [4]

(b) Find the product $(4a + 3)(4a + 7)$ [3]

(c) Draw all possible lines of symmetry in each of the following figure. [3]



(i) (ii) (iii)

Q.4(a) The area of square field is $7056m^2$. Find its perimeter. [4]

(b) Divide : $6x^2 + x - 15$ by $2x - 3$ [3]

(c) Construct a frequency table for the following data : [3]
13, 25, 19, 16, 8, 30, 27, 6, 0, 34, 40, 11, 4, 17 by taking class – intervals 0 – 10, 10 – 20, 20 – 30, 30 – 40. [3]

Section – B [Attempt any four questions]

Q.5(a) 2 men or 3 women can do a piece of work in 45 days. Find in how many days will 6 men and 1 woman be able to complete the same work. [4]

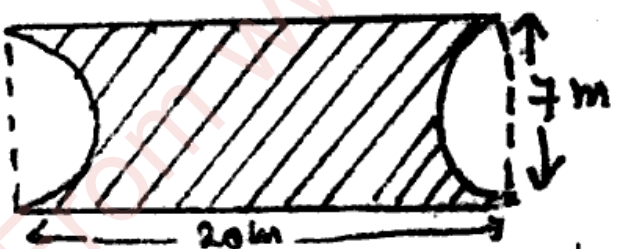
(b) What must be subtracted from $a^2 + b^2 + c^2 - 3abc$ to get $2a^2 - b^2 - 3c^2 + abc$? [3]

(c) Plot the points A (5, 1), B (-2, 2) and C(4, 2). Name the figure ABC. [Use graph paper] [3]

Q.6(a) Find the smallest number by which 2560 must be multiplied so that product is a perfect cube. [4]

(b) Mutiply : $(3 - 2x + 5x^2)$ by $(5x - 4)$ [3]

(c) Find the area of the shaded region in the following figure : [3]



Q.7(a) Calculate the amount and the compound interest on ₹ 24000 for 1 ½ years at 10% per annum, compounded half yearly. [4]

(b) If $\left[Z + \frac{1}{z}\right] = 6$ find the value of : [3]

(i) $Z^2 + \frac{1}{Z^2}$ (ii) $Z - \frac{1}{z}$

(c) Write number of faces, Edges and vertices in following : (i) Tetrahedron (ii) Triangular prism

Q.8(a) Show that : $(x^{a+b})^{a-b} \times (x^{b+c})^{b-c} \times (x^{c+a})^{c-a} = 1$ [4]

(b) If $a = 4, b = 5$, Find the value of $a^3 + b^3 - 3ab(a + b)$ [3]

(c) Plot a graph of the function $y = 5x$, From the graph, Find the value of y when $x = 2$ [3]

Q.9(a) Simplify : (i) $(25a^2)^{\frac{1}{2}}$ (ii) $7b^{14} \div 21b^{-10}$ [4]

(b) Expand : (i) $(x - 3)^2$ (ii) $\left(\frac{x}{3} + \frac{y}{2}\right)^2$ [3]

(c) Find the perimeter and area of rectangle having length = 3.2m and breadth = 2.5 m. [3]

Q.10(a) Find the square roots of following : (1) 4761 (2) $96\frac{1}{25}$ [4]

(b) Add : $x^3 - 6x^2y + 7xy^2 + y^3$ and $6y^3 - 5x^3 + 4x^2y - 2xy^2$ [3]

(c) Find the area of a trapezium whose parallel sides are 2.5m and 6.3m and the distance between them is 12m. [3]