HALF YEARLY EXAMINATION, 2024-25

MATHEMATICS

Time – 3:00 Hrs. **Class – VIII** **M.M. : 80**

Date – 13.09.2024 (Friday)

Name of the student _____Section _____

GENERAL INSTRUCTIONS

- This question paper is divided into four sections A, B, C and D.
- SECTION A consists of 20 questions (MCQ, fill in the blanks and match the pairs) of 1 mark each. Attempt all questions.
- SECTION B consists of 5 questions of 2 marks each. Attempt all questions.
- SECTION C consists of 7 questions of 4 marks each. Attempt any five questions.
- SECTION D consists of 8 questions of 5 marks each. Attempt any six questions.
- Show the required calculations in fair.

SECTION A (Attempt all questions)

Q1. Choose the correct answer.

i) Which of the following is not a perfect square number?

a) 4 b) 81 c) 163 d) 25

ii) The cube of an odd number is always

a) even b) odd c) prime number d) None of these

iii) Each prime factor appears _____ times in a perfect cube.

a) 1 b) 2 c) 3 d) 4

iv) Which statement is true:

a) all quadrilaterals are rectangles b) all rectangles are quadrilaterals.

c) all rectangles are squares d) all quadrilaterals are squares

v) The quadrilateral which has only one pair of parallel sides is

a) kite b) trapezium c) rectangle d) rhombus

vi) 3^3+3^3 =

a) 3^9 b) 6^3 c) 9^3 d) none of these

vii) The number of digits in the square root of 62500 is

a) 1 b) 2 c) 3 d) 4

viii) The standard form of 5380000 is

a) 5.38×10^6 b) 0.538×10^7 c) 5.38×10^{-6} d) 0.538×10^{-7}

ix) Which of the following is not a rational number?

a) $\frac{-3}{5}$ b) $\frac{-2}{-9}$ c) $\frac{9}{8}$ d) $\frac{9}{0}$

x) In the equation 3p = 4 – p, transposing (–p) to LHS we get –

(a) 3p – p = 4 (b) 3p + p = 4 (c) – 3p + p = 4 (d) – 3p – p = 4

Q2. Fill in the blanks:

a) Cube of 9 is _ _ _ _ _

b) If 7y = 28, then the value of y is _ _ _

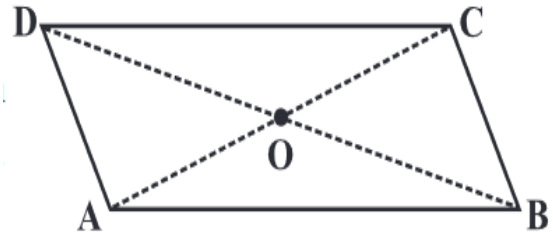
c) The additive inverse of (-5) is _ _ _

d) Rational numbers are not closed under _ _ _ _

e) Sum of all the exterior angles of any polygon is _ _ _ _

f) The ones digit of square of 5628 is _ _ _

Q3. Match the following:



i)AD = BC	a) diagonals of a parallelogram bisect each other
ii) $\angle DCB = \angle DAB$	b)opposite sides of a parallelogram are equal
iii) OC=OA	c)adjacent angles of a parallelogram are supplementary
iv) m$\angle DAB + m\angle ABC = 180°$	d)opposite angles of a parallelogram are equal

SECTION B (Attempt all questions)

Q4. Find using distributivity. $\left\{\frac{7}{5} \times \left(\frac{-3}{12}\right)\right\} + \left\{\frac{7}{5} \times \left(\frac{5}{12}\right)\right\}$

Q5. Solve $2x - 3 = x + 2$

Q6. Find the measure of each exterior angle of a regular polygon of 24 sides.

Q7. How many numbers lie between squares of 25 and 26?

Q8. Find the value of $\left(\frac{1}{2}\right)^{-2} + \left(\frac{1}{3}\right)^{-2} + \left(\frac{1}{4}\right)^{-2}$

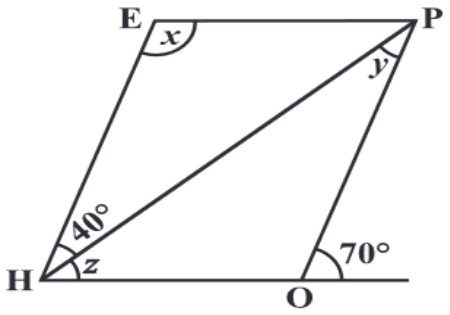
SECTION C (Attempt any five questions)

Q9 Find $\frac{-4}{5} \times \frac{3}{7} \times \frac{15}{16} \times \frac{-14}{9}$

Q10 Solve the given equation $\frac{2y}{3} + 1 = \frac{7y}{15} + 3$

Q11 Find a Pythagorean triplet in which one member is 16.

Q12 HOPE is a parallelogram. Find the measures of x, y and z.



Q13 Find the smallest square number that is exactly divisible by each of the numbers 4, 9 and 10.

Q14 Find the smallest number by which 2376 must be divided so that the quotient is a perfect cube.

Q15 In a stack there are 5 books each of thickness 20mm and 5 paper sheets each of thickness 0.016 mm. What is the total thickness of the stack?

SECTION D (Attempt any six questions)

Q16 Mass of earth is 5.97×10^{24} kg and mass of moon is 7.35×10^{22} kg. What is the total mass?

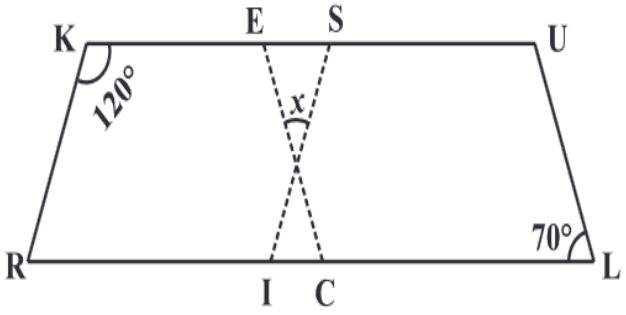
Q17 Solve using suitable properties

$$\frac{2}{5} \times \frac{-3}{7} - \frac{1}{14} - \frac{3}{5} \times \frac{3}{7}$$

Q18 Simplify and solve the given linear equation.

$3(5z - 7) - 2(9z - 11) = 4(8z - 13) - 17$

Q19 RISK and CLUE are parallelograms. Find the value of x.



Q20 Find the least number that must be subtracted from 5607 so as to get a perfect square. Also find the square root of the perfect square.

Q21 Find the cube root of 110592 by prime factorisation method.

Q22 Simplify $\dfrac{3^{-5} \times 10^{-5} \times 125}{5^{-7} \times 6^{-5}}$

Q23 Find the smallest number by which 68600 must be multiplied to obtain a perfect cube.