BUDHA DAL PUBLIC SCHOOL PATIALA
FIRST TERM EXAMINATION (6 September 2024)
MATHEMATICS
Class – VIII
(Set – A)

Time Allowed: 3 hours

Maximum Marks: 80

Instructions:
1. All questions are compulsory.
2. Section – A : Q.No. 1 to 10 carry 1 mark each (M.C.Q)
3. Section – B : Q.No. 11 to 20 carry 2 marks each
4. Section – C : Q.No. 21 to 30 carry 3 marks each
5. Section – D : Q.No. 31 to 35 carry 4 marks each

SECTION-A

1. The multiplicative inverse of $\frac{1}{6}$ is — 1

     a) -6 b) 6   c) $-\frac{1}{6}$ d) 1

2. If $2x + 3 = 0$ then value of x is — 1

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

3. The quadrilateral whose diagonals do not bisects each other is — 1

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

4. The number of digits in the square root of 39062500 are — 1

     a) 3   b) 4   c) 5   d) 6

5. The rational numbers are not closed under — 1

     a) addition   b) subtraction   c) multiplication   d) division

6. Which of the following numbers would not have digit 1 at unit place? — 1

     a) 29^2 b) 41^2 c) 53^2 d) 69^2

7. 8% of 200 is — 1

     a) 8   b) 200   c) 16   d) 800

8. Product of $2t^4 \times 5t^5$ is — 1

     a) $10t^{20}$ b) $10t^{-1}$ c) $10t^9$ d) $10t^{-20}$

9. The reciprocal of the rational number $\left(\frac{4}{3}\right)^{-5}$ is — 1

     a) $\frac{3}{4}$ b) $\frac{4}{3}$ c) $\left(\frac{4}{3}\right)^5$ d) none

10. The value of $(1^{-2} + 2^{-2})^0$ is — 1

     a) $\frac{1}{3}$ b) $\frac{1}{2}$ c) 3   d) 1

A-1

SECTION-B

11   a) Express 2.0001×10^9 in usual form.   2

b) Write 0.0000097 in standard form.   2

12.   Subtract $5a^2 - b^2 + ab$ from $a^2 + 9b^2 - 4ab$ 2

13.   The given figure 'BOAT' is a parallelogram. Find x and y 2
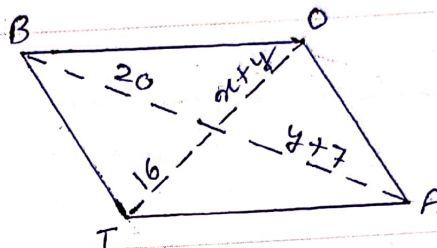
14.   Name the property under multiplication used in the following: 2

a) $\frac{3}{2} \times \frac{41}{7} = \frac{41}{7} \times \frac{3}{2}$

b) $\left(\frac{3}{7} \times \frac{4}{6}\right) \times \frac{5}{3} = \frac{3}{7} \times \left(\frac{4}{6} \times \frac{5}{3}\right)$

15.   Find the square root of 7056 by prime factorization method.   2

16.   Simplify by using appropriate property $-\frac{7}{12} \times \frac{6}{13} + -\frac{7}{12} \times \frac{9}{26} + \frac{49}{104}$ 2

17.   Solve $\frac{6x+1}{3} = \frac{x-3}{6}$ 2

18.   Find $'m'$ so that $(-3)^{m+1} \times (-3)^5 = (-3)^7$ 2

19.   Simplify and solve the following linear equation   2

$15(y-4) - 2(y-9) + 5(y+6) = 0$

20.   The price of an Activa is Rs. 80,000. The sale tax charged on it is at the rate of 12%. Find the amount that Rajneesh will have to pay if he buys it.   2

SECTION-C

21.   Find the smallest square number that is divisible by each of the numbers 8, 12 and 16.   3

**22.**   State True or False   3

a) Maximum value of the exterior angle of a regular polygon is 120^0
b) In a rhombus all sides are equal
c) A kite is a trapezium

23.   Find the amount and the compound interest on Rs. 12000 for 2 years at the rate of 10% per annum compounded annually.   3

24.   Fill in the blanks: 3

a) Zero has _____ reciprocal.

b) Additive inverse of $-\frac{3}{7}$ is _____

c) The rational number which is equal to its negative is _____

A-2

25. In figure PQRS is a parallelogram, Find x, y, z 3
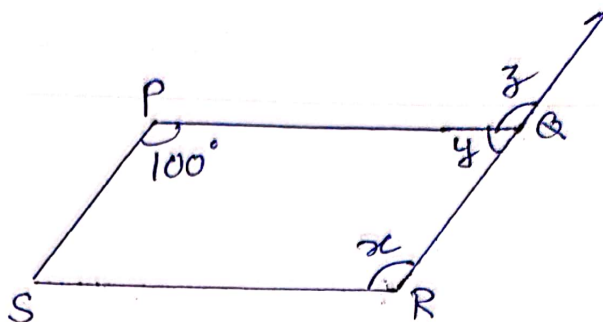
26. Find the smallest whole number by which 18432 should be divided so as to get a perfect square. Also find the square root of the square number so obtained.   3

27. Evaluate $\dfrac{2^{-5} \times 3^{-5} \times 125 \times t^4}{5^3 \times 6^{-5}}$ 3

28. Rahul bought a pair of skates at a sale where discount given was 10%. If the amount he pays is Rs. 1800, find the marked price.   3
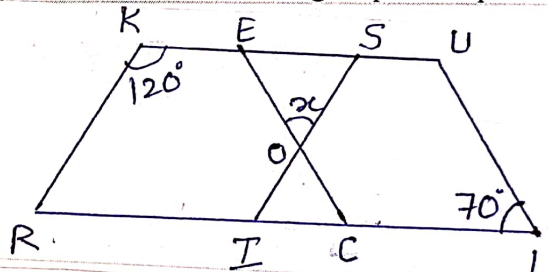
29. Simplify $m(m^2 + m + 1) + 5$ and find its value when $m = 1$ 3

30. Solve the following linear equation
$\dfrac{n}{2} - \dfrac{3n}{4} + \dfrac{5n}{6} = 21$ 3

SECTION-D

31. a) Write a Pythagorean triplet if one member is 16.   4

b) Find the least number which must be subtracted from 1989 to get a perfect square.

32. In the following figure both 'RISK' and 'CLUE' are parallelogram. Find the value of x 4

33. a) Add $ab - bc, bc - ca, ca - ab$ 4

b) Subtract $3pq\,(p - q)$ from $2pq\,(p + q)$

Case Study Questions

34. A teacher shows four articles of different weight (cube, book, bucket and a bag) in a class room. The difficulty is that weight tags are in exponential form. The weight of articles are as follows: 4

Cube $=$ $(2^3 + 3^0)$ kg

Book $=$ 2^{-1} kg

Bucket $=$ $(2 \times 3^2 \times 1)$ kg

Bag $=$ $(2^0 + 3^0 + 5^0)^3$ kg

A -3

Answer the following:

1) What is the weight of the book?
   a) 2 kg   b) ½ kg   c) (2 × 2) kg   d) none

2) What is the sum of weight of a cube and a bucket?
   a) 9 kg   b) 27 kg   c) 18 kg   d) 2 kg

3) What is the product of weight of a bag and a cube?
   a) (18 × 27) kg   b) ½ kg   c) (27 × 9) kg   d) none

4) What is the ratio of weight of a cube and a bucket?
   a) 1 : 2   b) 9 : 2   c) 2 : 3   d) 3 : 2

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35. If 60% people in a city like cricket, 30% like football and the remaining like other games. If total number of people is 50 lakh then answer the following questions:

1) How many people like cricket?
   a) 15 lakh   b) 30 lakh   c) 5 lakh   d) 50 lakh

2) How many people like cricket and football both?
   a) 50 lakh   b) 40 lakh   c) 45 lakh   d) 5 lakh

3) Find the ratio of people like cricket to other games.
   a) 6 : 1   b) 2 : 1   c) 3 : 1   d) none

4) What percentage of people like other games?
   a) 60%   b) 30%   c) 50%   d) 10%

4