Roll No.

DAV PUBLIC SCHOOLS, ODISHA ZONE

HALF YEARLY EXAMINATIONS, 2023-24

- Please check that this question paper contains 4 printed pages.
- Check that this question paper contains 40 questions.
- Write down the Serial Number of the question in the left side of the margin before attempting it.

CLASS- VI
SUB: MATHEMATICS

Time: 3 Hours   **Maximum Marks: 80**

General Instructions:

- This question paper contains 4 sections: **A**, **B**, **C** & **D**.
- **Section-A** consists of **10 MCQs, 5 Fill in the blanks and 5 VSA of 1 mark** each.
- **Section-B** consists of **6 SA−I** type questions of **2 marks** each.
- **Section-C** consists of **8 SA−II** type questions of **3 marks** each.
- **Section-D** consists of **6 Long Answer** (LA) type questions of **4 marks** each.
- Internal choice is provided in 2 questions of 2 marks, 3 questions of 3 marks and 2 questions of 4 marks.
- Verify all the answers thoroughly before submission.

<u>SECTION – A (1 × 20 = 20)</u>

Choose the correct option.

1. The largest 5-digit number having three different digits is
   (a) 98978   (b) 99897   (c) 99987   (d) 98799

2. The Hindu-Arabic numeral for CCLIX is:
   (a) 261   (b) 359   (c) 259   (d) 361

3. The smallest 2 digit even multiple of 3 is:
   (a) 96   (b) 12   (c) 6   (d) 99

4. Which of the following is a factor of every natural number?
   (a) 1   (b) 0   (c) −1   (d) Any number

5. Which of the following expression is true?
   (a) $-10 < -4$ (b) $11 < -14$ (c) $-13 > -2$ (d) $-25 > 0$

6. The predecessor of $|-1|$ is:
   (a) −2   (b) 2   (c) 0   (d) 1

7. The ratio of a dozen to a score is
   (a) 5 : 3   (b) 2 : 3   (c) 3 : 2   (d) 3 : 5

8. If three lines l, m and n, meet at a point P, the point P is called:
   (a) point of intersection   (b) point of concurrence
   (c) collinear points   (d) non-collinear points

9. An angle whose measure is the sum of the measures of two right angles is
   (a) a straight angle   (b) an acute angle   (c) an obtuse angle   (d) a reflex angle

10. $\frac{5}{6}$ of a straight angle = _____.
    (a) 20^0 (b) 150^0 (c) 60^0 (d) 180^0

Fill in the blanks.

11. _____ × (227 − 35) = 50 × 227 − 50 × 35.
12. A set of two consecutive prime numbers differing by 2 is called _____.
13. The additive inverse of −35 is _____.
14. The ratio of 1cm to 1mm is _____.
15. 32 m: 64 m = 6 sec: _____.

Answer the following questions.

16. How many millions make 1 crore?
17. Find the HCF of two consecutive even natural numbers.
18. Find the prime factorisation of 144.
19. Find the sum of the greatest negative integer and smallest positive integer.
20. If one of the angles of two complementary angles is 59°, find the measure of the other angle.

SECTION – B (2 × 6 = 12)

21. Find the smallest and greatest 8-digit numbers using the digits 1, 3, 9 and 0.
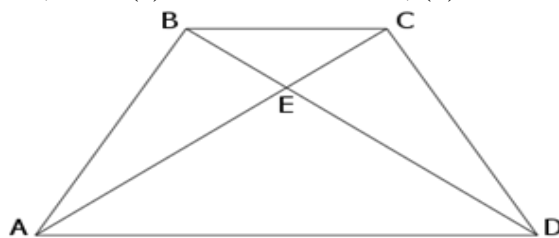22. Find the HCF of 348 and 1024 by continued division method.
    OR
    Using divisibility test, determine whether 345672 is divisible by 9 or not?
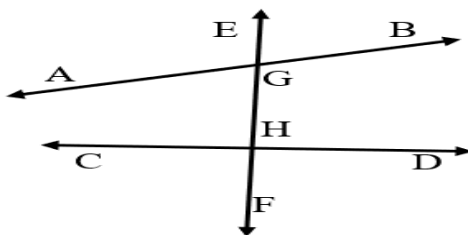23. Calculate: $(-2)^2 \times (-10)^2 \times (-1)$
    OR
    Find the value of $325 \times (-641) + 325 \times (-359)$

24. From the given figure below, find: (a) AC – AE = _____, (b) ED + BE = _____

25. Draw the following using scale and pencil only. Also name them.
    (a) One pair of supplementary adjacent angle
    (b) Vertically opposite angles.

26. In the given figure, are ∠BGE and ∠CHF corresponding angles? If no, what is this pair of angles called?

SECTION – C (3 × 8 = 24)

27. A loading tempo can carry 482 boxes of biscuits weighing 15 kg each, where as a van can carry 518 boxes each of the same weight. Find the total weight that can be carried by both the vehicles. (Using distributive property).

OR

Find the largest 6-digit number which is exactly divisible by 45.

28. The length, breadth and height of a room are 8 m 28 cm, 6 m 75 cm, and 4 m 50 cm respectively. Determine the longest tape which can measure the three dimensions of the room exactly.

OR

The HCF and LCM of two numbers are 13 and 1989 respectively. If one of the numbers is 117, determine the other.

29. Find the value of $|(-400) + 781 + (-1400) + (-81) + 300|$

30. Are 36, 90, and 75 in continued proportion? Justify your answer.

31. A scooter travels 120km in 3 hours and a train travels 120km in 2 hours. Find the ratio of their speeds.

OR

In a school, the ratio of the number of large classrooms to small classrooms is 3:4. If the number of small rooms are 20, then find the number of large rooms.

32. In the given figure, name

    (a) two pairs of parallel lines.

    (b) point of intersection of lines m and t

    (c) lines whose point of intersection is D
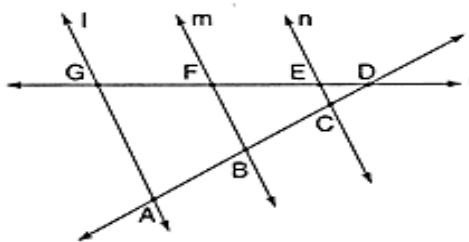
33. If AB = 4.5cm, CD = 5.4cm then construct a line segment whose length is same as 2AB – CD using compasses and ruler.

34. Find the supplement of complement of $\frac{5}{6}$ of a right angle.

SECTION – D (4 × 6 = 24)

35. Simplify: 500 – [90 – {60 – (20 – 10 ÷ 2)} – 10]

36. Four bells toll at intervals of 8,12,15 and 18 seconds respectively. If they toll together at 4 p.m., when will they toll together next?

37. Verify that a ÷ (b ÷ c) ≠ (a ÷ b) ÷ (a ÷ c) for a = −225, b = 15 and c = −3

OR

    (a) Find the value using property: 242 × (−95) + 242 × (−4) – 242

    (b) Compute: $(-1)^9 + (-1)^{10}$

38. A train travels a distance of 550 km in 5 hours.

   (a) What distance will the train travel in 2½ hours?

    (b) How many hours are needed to travel a distance of 330 km if the train travels at a uniform speed?

OR

The ratio of the length of a vertical pole and its shadow on the ground is 7:2. Find the length of the pole if the length of the shadow is 2.4 m.

39. In the given figure write
    (a) Write two sets of collinear points.
    (b) The point of intersection of the line l and p.
    (c) The lines concurrent at point G.
    (d) Two pairs of intersecting lines.
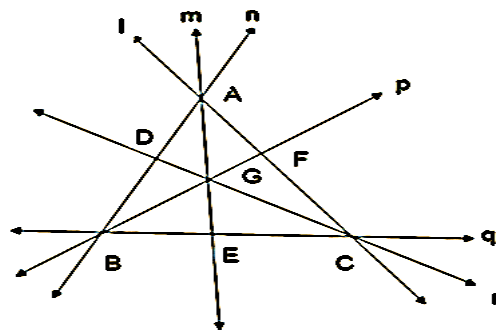
40. From the given figure, write
    a) Angles corresponding to ∠1
    b) Two interior angles.
    c) One pair of alternate exterior angle.
    d) Angle vertically opposite to ∠5

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