



(SAMPLE PAPER)

SUBJECT : MATHEMATICS

M.M:80

TIME : 03 HRS

Read the following instructions carefully and follow them:

- This question paper contains 38 questions. All questions are compulsory.
- This Question Paper is divided into 5 Sections A, B, C, D and E.
- In Section A, Question numbers 1–18 are multiple choice questions (MCQs) and Question Nos. 19 and 20 are Assertion–Reason based questions of 1 mark each.
- In Section B, Question numbers 21–25 are Very Short Answer (VSA) type questions, carrying 2 marks each.
- In Section C, Question numbers 26–31 are Short Answer (SA) type questions, carrying 3 marks each.
- In Section D, Question numbers 32–35 are Long Answer (LA) type questions, carrying 5 marks each.
- In Section E, Question numbers 36–38 are Case Study-based questions carrying 4 marks each, with sub-parts of the values of 1, 1 and 2 marks each respectively.

Section – A consists of 20 questions of 1 mark each

(20X1=20)

- Which of the following is a perfect square?
(a) 98 (b) 121 (c) 150 (d) 145
- The cube of 9 is _____.
(a) 81 (b) 243 (c) 729 (d) 512
- The sum of interior angles of a quadrilateral is _____.
(a) 180° (b) 270° (c) 360° (d) 540°
- A square is a _____.
(a) Trapezium (b) Parallelogram (c) Triangle (d) Pentagon
- Which property is used in $7 \times (20+12)$?
(a) Commutative (b) Associative (c) Distributive (d) Identity
- The value of $25 \times 15 =$ _____.
(a) 465 (b) 375 (c) 495 (d) 450
- If 5 pens cost ₹100, then the cost of one pen is _____.
(a) ₹10 (b) ₹15 (c) ₹20 (d) ₹25

8. Which number is divisible by 9?

- (a) 135 (b) 137 (c) 124 (d) 145

9. Which quadrilateral has only one pair of parallel sides?

- (a) Rectangle (b) Square (c) Trapezium (d) Rhombus

10. $\sqrt{169} = \underline{\hspace{2cm}}$

- (a) 11 (b) 12 (c) 13 (d) 14

11. $12^3 = \underline{\hspace{2cm}}$

- (a) 144 (b) 1728 (c) 1296 (d) 216

12. Which is not a perfect cube?

- (a) 64 (b) 216 (c) 125 (d) 225

13. In direct proportion, if one quantity increases, the other

- (a) decreases (b) remains same (c) increases (d) becomes zero

14. Solve using distributive property $48 \times 99 = \underline{\hspace{2cm}}$

- (a) 4752 (b) 4852 (c) 4952 (d) 4652

15. A rectangle has

- (a) Four equal sides (b) Opposite sides equal (c) Three sides equal (d) No equal sides

16. The smallest perfect square greater than 50 is $\underline{\hspace{2cm}}$.

- (a) 64 (b) 49 (c) 81 (d) 100

17. Which number is divisible by both 2 and 5?

- (a) 45 (b) 30 (c) 27 (d) 33

18. The ratio 8 : 12 simplifies to $\underline{\hspace{2cm}}$.

- (a) 4 : 6 (b) 2 : 3 (c) 3 : 2 (d) 1 : 2

Assertion–Reason

Choose the correct option:

- A. Both A and R are true and R is the correct explanation of A.
B. Both A and R are true but R is not the correct explanation of A.
C. A is true but R is false.
D. A is false but R is true.

19. **Assertion (A):** Every square is a rectangle.

Reason (R): A square has four right angles.

20. **Assertion (A):** 729 is a perfect cube.

Reason(R): $9^3=729$

SECTION – B

Section – B consists of 5 questions of 2 marks each.

(5X2=10)

21. Find the square of 35.

22. Use the distributive property to find :

38×12

OR

Use distributive property to find:

$$52 \times 19$$

23. State any two properties of a parallelogram.

24. Simplify the ratio 36 : 48.

OR

If 6 notebooks cost ₹180, find the cost of 10 notebooks.

25. Write any four tests of divisibility.

SECTION – C

Section --C consists of 6 questions of 3 marks each.

(6X3=18)

26. Find the cube of 18 using expansion.

27. Explain the distributive property with one example.

28. The length and breadth of a rectangle are 12 cm and 8 cm. Find its perimeter and area.

OR

Find the missing angle of a quadrilateral whose three angles are 80° , 95° and 100° .

29. If 8 kg of rice costs ₹520, find the cost of 15 kg rice.

30. Check whether 729 is a perfect cube.

OR

Find the smallest number by which 432 must be multiplied to make it a perfect cube.

31. Differentiate between direct proportion and inverse proportion with one example each.

SECTION – D

Section – D consists of 4 questions of 5 marks each.

(4X5=20)

32. Use the distributive property to calculate:

(a) 98×37

(b) 105×46

OR

Find by the using distributive property :

(a) 999×56

(b) 49×101

33. Draw a square, rectangle and rhombus. Write any three properties of each.

34. A shopkeeper sells 15 packets of biscuits for ₹450.

(i) Find the cost of 25 packets. (ii) Find the cost of 40 packets. (iii) Is this a direct proportion? Justify.

OR

The scale of a map is 1 cm = 5 km.

(i) Find the actual distance for 8 cm.

(ii) Find the map distance for 60 km.

(iii) Explain the proportion used.

35. Solve:

(a) Find the square root of 324.

(b) Find the cube root of 1728.

(c) Write any two perfect squares and two perfect cubes between 1 and 1000.

SECTION – E

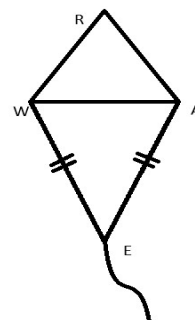
Section – E consists of 3 Case Study – based questions of 4 marks each.

(3X4=12)

36. Kite flying is a beloved tradition in India, deeply intertwined with cultural and festive celebrations. It is especially prominent during festivals like Makar Sankranti, Basant Panchmi, and Uttarayan. During these festivals, people fly kites from their terraces and rooftops. Many cities organise kite flying competitions, attracting participants of all ages. The International Kite Festival in Gujarat is one of the most notable events, drawing visitors from around the world. Kite flying in India is more than just a pastime; it is a vibrant cultural tradition that brings communities together and adds colour to the skies. Rahul and his friends were flying kites on Makar Sankranti. The kite that Rahul was flying is as shown.

Based on the given information, answer these questions:

- (i) Write the geometrical shape of this kite . (1)
- (ii) Write any two properties of a kite. (1)
- (iii) In the given kite, $\angle WEA = 70^\circ$ and $\angle ARW = 80^\circ$;
find the remaining two angles. (2)



37. The Babylonians (around 1700 BCE) prepared the earliest lists of perfect squares and perfect cubes on clay tablets. These lists were used in solving practical problems like land measurement and construction. In ancient Sanskrit works, the words varga and ghana were used for a square and a cube (both as a figure and as a power). In earlier Indian records, Aryabhata (499 CE) wrote, “A square figure of four equal sides and the number representing its area are called varga. The product of two equal quantities is also called varga.” The Sanskrit term mula (meaning “root of a plant” or “origin”) was used for mathematical roots. Thus, varga mula meant square root and ghana mula meant cube root.

Based on the above information, answer these questions.

- (a) Who were the first to prepare lists of perfect squares and cubes? (1)
- (b) What do the Sanskrit terms varga and ghana mean? (1)
- (c) Why was the word mula used for mathematical roots? (2)

38. To celebrate National Mathematics Day, a school organised a Number Play Competition. Students were given different number puzzles involving divisibility, factors, multiples, prime numbers, square numbers, and cube numbers. Rahul and his friends solved the puzzles by applying the concepts they had learned in the Number Play chapter. Rahul selected the number 144. He found that it has many factors and is also a perfect square. His friend Meera selected 125, which is a perfect cube. Another student chose 91 and checked whether it was a prime number by testing its divisibility.

Based on the above information, answer the following questions:

- (a) Is 144 a perfect square? If yes, write its square root. (1)
- (b) Is 91 a prime number? Give a reason. (1)
- (c) Write all the prime factors of 144 and 125 (2)