B.K. BIRLA CENTRE FOR EDUCATION

SARALA BIRLA GROUP OF SCHOOLS
A CBSE DAY-CUM-BOYS' RESIDENTIAL SCHOOL

TERM-1 EXAMINATIONS (2025-26)
MATHEMATICS

Class: VI **MARKING SCHEME** **DATE: 05.09.25**

Section A

Choose the correct answer **1 x 20 =20**

1. What type of numbers does the sequence 2, 4, 6, 8, … represent?
   (a) Even numbers (b) Odd numbers
   (c) Prime numbers (d) Square numbers

2. Which number sequence is formed by adding consecutive odd numbers?
   (a) Triangular numbers (b) Square numbers
   (c) Cube numbers (d) Powers of 2

3. What is the 5th term of the cube numbers sequence?
   (a) 125 (b) 64 (c) 36 (d) 100

4. In a pictograph, one symbol can represent _____units.
   (a) Multiple (b) only one (c) only two (d) zero

5. Which of the following is a prime number?
   (a) 49 (b) 51 (c) 53 (d) 55

6. What is the first common multiple of 3 and 5?
   (a) 10 (b) 12 (c) 15 (d) 20

7. The numbers which are not multiples of 2 are known as _____.
   (a) odd (b) even (c) prime (d) composite

8. Every number has a _____ number of factors
   (a) only 2 (b) only 4 (c) infinite (d) finite or limited

9. An angle of exactly 90° is called a _____ angle.
   (a) right (b) straight (c) obtuse (d) acute

10. An angle bisector divides an angle into _____ equal parts.
    (a) 2 (b) 4 (c) 0 (d) many

11. A ray starts at one point and extends _____ in one direction.
    (a) same (b) opposite (c) all (d) many

12. Which of the following is a 3-digit palindrome that can be formed using the digits 1, 2, and 3?
(a) 111 (b) 122 (c) 123 (d) 132

13. Which of the following numbers has digits that add up to 14?
(a) 85 (b) 67 (c) 59 (d) 92

14. What is the estimated difference of 812 – 493?
(a) 200 (b) 250 (c) 300 (d) 350

15. Which pair of numbers is co-prime?
(a) 12 and 18 (b) 14 and 21 (c) 10 and 12 (d) 8 and 9

16. If 1 unit length represents 10 vehicles, how many vehicles are represented by a bar of heights 6 units?
(a)60 (b) 600 (c) 10 (d) 100

17. In a bar graph, bars of uniform width are drawn horizontally or vertically with _____ spacing between them.
(a) Unequal (b) equal (c) difficult (d) none of these

18. Which of the following sets of numbers adds up to 24,539?
(a) 5-digit number = 21,000, 3-digit number = 539
(b) 5-digit number = 20,000, 3-digit number = 439
(c) 5-digit number = 22,000, 3-digit number = 539
(d) 5-digit number = 24,000, 3-digit number = 539

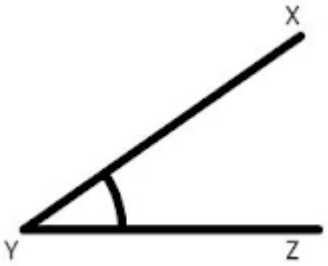
19. Assertion (A): The sum of angles on a straight line is 180°.
Reason (R): A straight angle measures 180°.
(a) Both A and R are true, and R is the correct explanation of A.
(b) Both A and R are true, but R is not the correct explanation of A.
(c) A is true, but R is false.
(d) A is false, but R is true.

20. Assertion (A): The prime factorisation of 56 is $2 \times 2 \times 2 \times 7$.
Reason (R): A composite number can be expressed as a product of only prime numbers in one unique way (order may differ).
(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.

Section B

Do as directed **2 x 5 =10**

21. Draw an acute angle and label it as ∠XYZ.



22. I am a 5-digit palindrome. I am an odd number.
My 't' digit is double of my 'u' digit.
My 'h' digit is double of my 't' digit.
Who am I?

31513
The number 31513 is a 5-digit palindrome, as it reads the same forwards and backwards.
It is an odd number.
The 't' digit (1) is double the 'u' digit (5).
The 'h' digit (3) is double the 't' digit (1).

or

Create a 4-digit number where the digit sum is 16, and the number is a palindrome. Provide the number.

A 4-digit palindrome has the form ABBA, where A and B are digits.
A + B =8
If A = 1, then B = 7 → Number = 1771
If A = 2, then B = 6 → Number = 2662
If A = 3, then B = 5 → Number = 3553

23. Is the first number divisible by the second?
(a) 150 and 25

a. 150 and 25
Yes, 150 is divisible by 25.
The prime factorization of 150 is 2 × 3 × 5 × 5, and the prime factorization of 25 is 5 × 5. Since 150 has all the factors of 25, it is divisible by 25.

(b) 84 and 12

b. 84 and 12
Yes, 84 is divisible by 12.
The prime factorization of 84 is 2 × 2 × 3 × 7, and the prime factorization of 12 is 2 × 2 × 3. Since 84 has all the factors of 12, it is divisible by 12.

or

Find all the multiples of (a) 13 up to 100 (b) 15 up to 95

(a) 13, 26, 39, 52, 65, 78, 91
(b) 15 , 30, 45, 60 , 75 , 90

24. Find out the missing numbers and figure out what the pattern rule is for each box.
(a) 17, 20, 23, 26, 29, 32 , _35_

(b) 18, 27, 36, 45, 54, 63, 72.

25. Following are the marks obtained by 20 students in Geography. Arrange these marks in a table using tally marks.

5	8	6	8	2	3	9	6	6	7
8	9	5	8	3	9	7	6	5	6

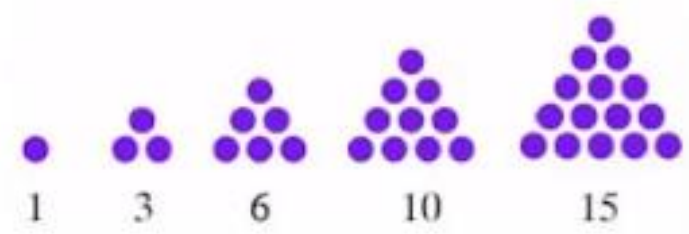
Marks	Tally Marks	Frequency
2	|	1
3	||	2
4	-	0
5	|||	3
6	𝍸	5
7	||	2
8	||||	4
9	|||	3

Section C

Solve the following **3 x 6 = 18**

26. A number is divisible by both 5 and 12. By which other number will that number be always divisible?
Factors of 5 = 1, 5
Factors of 12 = 1, 2, 3, 4, 6, 12
As the common factor of these numbers is 1.
Product =5×12
Product =60
The number will always be divisible by 60

27. Give a diagrammatic representation of triangular numbers.



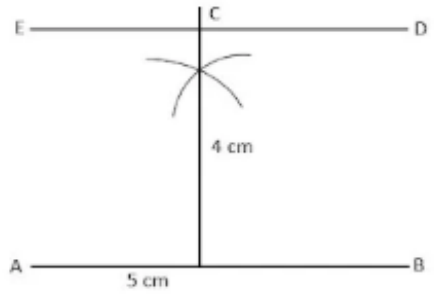
28. The time now is 02:15. How many minutes until the clock shows the next palindromic time?
Time now – 02:15
Now, the next palindromic time is 02:20
Hence, 02:20 – 02:15 = 5 minutes.
Adding 5 minutes , the clock shows the next palindromic time.

29. The numbers 13 and 31 are prime numbers. Both these numbers have same digits 1 and 3. Find such pairs of prime numbers up to 100.
There are 3 more pairs of prime numbers 13 and 31
17, 71
37, 73
79, 97

30. Draw a line segment of 5 cm. At its midpoint, draw a perpendicular line segment. What type of angle is formed between the two-line segments?(using rounder)

Right angle (90°)

A perpendicular line forms a right angle with the original line segment.

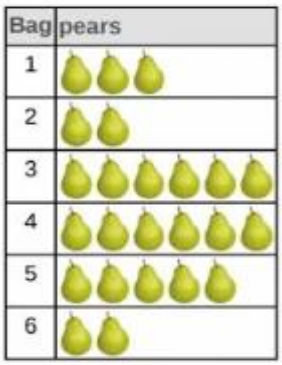


31. The following pictograph shows the number of pears in 6 bags. Find the following.

= 10 Pears

(a) Bag with the maximum number of pears.
(b) Bag with the minimum number of pears.
(c) Total number of pears in all the bags.

(a) 3 and 4
(b) 2 and 6
(c) 240



(a) It is clear from the given pictograph that there are 6 pears in the bags 3 and 4. This is the maximum number of pears in all the bags. Therefore, we can say that the bags 3,4 have the maximum number of pears.

(b) It is clear from the given pictograph that there are 2 pears in the bags 2 and 6. This is the minimum number of pears in all the bags. Therefore, we can say that the bags 2,6 have the minimum number of pears.

(c) Total number of pears in all the bags = Sum of the pears in all the 6 bags = 3 + 2 + 6 + 6 + 5 + 2 = 24 pears

Section D

Do as directed **5 x 4 = 20**

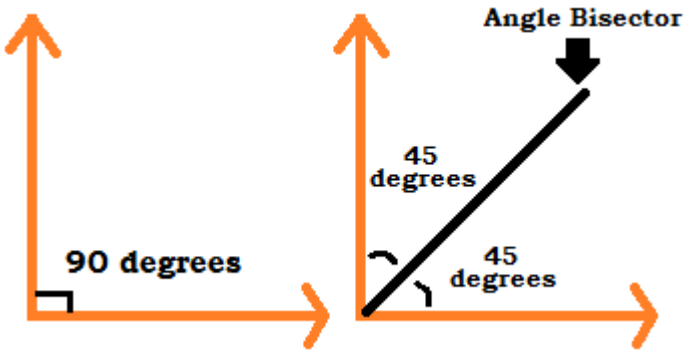
32. A survey showed the preference of different subjects by students of class VI. Draw a pictograph to illustrate the above data taking a proper scale.

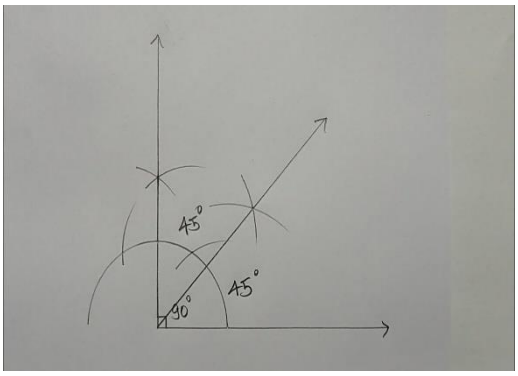
Subjects	English	Hindi	Maths	Science	Social
No. of students	25	30	50	35	40

Let ☆ = 5 students.

Subject	Number of students	Pictograph
English	25	☆☆☆☆☆
Hindi	30	☆☆☆☆☆☆
Maths	50	☆☆☆☆☆☆☆☆☆☆
Science	35	☆☆☆☆☆☆☆
Social	40	☆☆☆☆☆☆☆☆

33. Construct an angle bisector divides ∠XYZ into two angles of ∠XYB and ∠BYZ.
If ∠XYZ=90°, find ∠XYB and ∠BYZ.





∠XYB = 45°, ∠BYZ = 45°.
The angle bisector divides ∠XYZ equally into two angles, so each is 90°/2 = 45°.

34. What is the smallest number whose prime factorization has:
a. Three different prime numbers?
a. The smallest prime numbers are 2, 3 and 5.
To find the smallest number with these primes as factors, multiply them together:
$2 \times 3 \times 5 = 30$
So, the smallest number whose prime factorization has three different prime numbers is 30.

b. Five different prime numbers?
b. The smallest four prime numbers are 3, 5, 7, and 11. To find the smallest number with these primes as factors, multiply them together:
$2 \times 3 \times 5 \times 7 \times 11 = 2310$
Thus, the smallest number whose prime factorization has four different prime numbers is 2310.

or

Answer the following Questions.
(a) Write all the factors of 120.
1, 2, 3, 4, 5, 6, 8, 10, 12, 15, 20, 24, 30, 40, 60, 120

(b) Find the common factors of 5 and 15.
Factors of 5 = 1, 5
Factors of 15 = 1, 3, 5, 15
Common factors = 1 and 5

(c) Write down separately the prime and composite numbers less than 20.
Prime numbers less than 20 are
2, 3, 5, 7, 11, 13, 17, 19

Composite numbers less than 20 are
4, 6, 8, 9, 10, 12, 14, 15, 16, 18

(d) What is the greatest prime number between 1 and 10?
Prime numbers between 1 and 10 are 2, 3, 5, and 7.
Among these numbers, 7 is the greatest.

(e) Express the given number as sum of two odd primes : 18
18 = 11 + 7

35. We are the group of 5-digit numbers between 40,000 and 80,000 such that all of our digits are even. Who is the largest number in our group? Who is the smallest number in our group? Who among us is the closest to 60,000?
The largest number with all even digits (different) = 86420
The largest number with all even digits (repetitive) = 88888
The smallest number (non-repetitive) = 40002
The smallest number (repetitive) = 44444
Closest to 60,000 (in case of non-repetition) = 60420
Closest to 60,000 (in case of repetition) = 60000

Section E

Solve the following **4 x 3 = 12**

36. Reversing and adding a 2-digit number repeatedly always give a palindrome? Prove this with the help of two examples.
Yes, all two-digit numbers eventually become palindromes after repeated reversal and addition.
Example 1: Number 23
Initial Number: 23
Reverse: 32
Add: 23 + 32 = 55
Palindrome Check: 55 is a palindrome.
Result: 55 is a palindrome.
Example 2: Number 56
Initial Number: 56
Reverse: 65
Add: 56 + 65 = 121
Palindrome Check: 121 is a palindrome.
Result: 121 is a palindrome.

37. A school is setting up a new library and wants to organize books into shelves. There are 24 science books and 36 math books. The school seeks to arrange the books on shelves such that each shelf has the same number of books of each subject, and the number of shelves is minimized.
(a) What is the largest number of books that can be placed on each shelf?
(b) How many shelves are needed for science books?
(c) How many shelves are needed for math books?
(d) What is the total number of shelves required?
This is HCF
24 (science) and 36 (math) ⇒ HCF = 12
(since 24= 2x2x2x3, 36= 2x2 x 3x3, so HCF=2x2x3=12)

(a) Largest number of books per shelf = 12
(b) Science shelves = 24÷12=2
(c) Math shelves = 36÷12=3
(d) Total shelves = 2+3=5

38. A railway train has coaches numbered in a pattern: S1, S2, S3, … up to S20.
Each sleeper coach has 72 seats.
Answer the following questions with the help of the above data.
(a) Write the numbers of the 5th, 8th and 12th coaches.
(b) If the numbering continues, what will be the 25th coach number?
(c) How many total seats are there in the first 10 coaches?
(d) If your ticket says S15, seat 45, explain what that means in this pattern.

(a) 5th = S5, 8th = S8, 12th = S12
(b) Continuing the same pattern, 25th coach = S25
(c) First 10 coach seats = 10×72=720
(d) "S15, seat 45" means your berth is in sleeper coach number 15 (S15), and your seat/berth number is 45 within that coach (seats are numbered 1–72 in each coach).