



**परमाणु ऊर्जा शिक्षण संस्था**  
**Atomic Energy Education Society**  
**टर्म-I/ Term-I Examination 2025- 26**

कक्षा/ Class :VI

अवधि/Duration :3 Hours

विषय/Subject : Mathematics

अधिकतम अंक/Maximum Marks :80

**सामान्य निर्देश / General Instructions:****All questions are compulsory.****Section A** consists of **20 multiple answer type** questions carry **one mark each**.**Section B** consists of **5 Very Short answer type** questions carry **two marks each**.**Section C** consists of **6 short answer type question** carry **three marks each**.**Section D** consists of **4 Long answer type questions** carry **five marks each****Section E** consists of **3 case-based type questions** carry **four marks each**.

| Q No             |                                                                                                                                                                            | Marks |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| <b>Section A</b> |                                                                                                                                                                            |       |
| 1.               | Which of the following is a regular polygon?<br>A) Rectangle                      B) Square<br>C) Triangle                      D) Hexagon                                 | 1     |
| 2.               | The sequence 1, 2, 4, 8, 16... is called:<br>A) Squares    B) Powers of 2    C) Virahānka numbers    D) Triangular numbers                                                 | 1     |
| 3.               | Complete the pattern: 3, 30, 300, _____, _____.<br>A) 300, 3000              B) 30000, 3000<br>C) 3000, 30000              D) 3000, 3000                                   | 1     |
| 4.               | What do we get when we start adding up odd numbers, e.g., 1, 1+3, 1+3+5, 1+3+5+7, etc.?<br>A) Odd numbers    B) Even numbers    C) Triangular numbers    D) Square Numbers | 1     |
| 5.               | A ray has:<br>A) two end points    B) no end points    C) one end point    D) no arms                                                                                      | 1     |
| 6.               | How many lines can be drawn through a given point?<br>A) Infinite              B) Zero              C) any one              D) Two                                         | 1     |
| 7.               | A right angle measures:<br>A) 45°              B) 90°              C) 180°              D) 360°                                                                            | 1     |
| 8.               | Which of the following has a definite length?<br>A) A plane              B) A line segment    C) A line              D) A ray                                              | 1     |

9. A “supercell” in a table is any entry larger than: 1  
 A) its diagonal neighbours B) all neighbours  
 C) its top neighbour only D) zero neighbours
10. The digit sum of 176 is: 1  
 A)  $1+7+6=14$  B)  $14+7+6=27$   
 C)  $1 \times 7 \times 6=42$  D)  $1^2+7^2+6^2$
11. A palindromic number reads the same: 1  
 A) upside-down B) forward/backward  
 C) in binary D) in mirror only
12. Kaprekar’s constant for 4-digit numbers is: 1  
 A) 9999 B) 6174 C) 1234 D) 2025
13. A tally of four vertical lines with a slash across means: 1  
 A) 4 counts B) 5 counts C) 9 counts D) 10 counts
14. In a pictograph, a key “ = 10 books” means each   represent: 1  
 A) 1 book B) 5 books C) 10 books D) 20 books
15. The marks (out of 10) obtained by 28 students in a Mathematics test are listed as below: 1  
 8, 1, 2, 6, 5, 5, 5, 0, 1, 9, 7, 8, 0, 5, 8, 3, 0, 8, 10, 10, 3, 4, 8, 7, 8, 9, 2, 0  
 The number of students who obtained marks more than or equal to 5 is  
 A) 16 B) 17 C) 15 D) 13
16. If 1 unit on vertical axis = ₹ 200, then a bar of height 15 units = 1  
 A) ₹ 1500 B) ₹ 3000  
 C) ₹ 400 D) ₹ 200
17. The smallest factor of any number is: 1  
 A) 1 B) 2 C) itself D) 0
18. Numbers with exactly two factors are called: 1  
 A) even B) composite C) prime D) odd
- In the following questions a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as:**  
 (A) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).  
 (B) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).  
 (C) Assertion (A) is true but reason (R) is false.  
 (D) Assertion (A) is false but reason (R) is true.
19. **Assertion (A):** There is no prime number whose units digit is 4. 1  
**Reason (R):** Any number ending in 4 is divisible by 2.
20. **Assertion (A):** The sum of angles on a straight line is  $180^\circ$ . 1  
**Reason (R):** The measure of a complete angle is  $360^\circ$ .

### Section B

21. Write the next two numbers of the series 1,4,9, 16..... 2
22. Draw and label an angle of measure  $140^\circ$  with arms ST and SR. 2
23. Following pictograph shows the number of tractors in five villages: 2

| Villages  | Number of tractors  - 1 Tractor                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Village A |                                                                                         |
| Village B |                                                                                                                                                                          |
| Village C |        |
| Village D |                                                                                                                                                                                                                                                                                                                                            |
| Village E |                                                                                                                                                                          |

Observe the pictograph and answer the following questions:

- (1) Which village has the minimum number of tractors?
- (2) Which village has the maximum number of tractors?
24. What is the sum of the smallest and largest 5 - digit palindrome? 2
25. Are the numbers 18 and 35 co-prime? Give reason for your answer. 2

### Section C

26. While sorting erasers, Bhumi puts 2 erasers in 1st box, 4 in 2<sup>nd</sup> box, 8 in 3<sup>rd</sup> box, 16 in 4<sup>th</sup> box. If this pattern continues, how many erasers Bhumi puts in 5<sup>th</sup>, 6<sup>th</sup>, and 7<sup>th</sup> box respectively? 3
27. Write one 5-digit number and two 3-digit numbers such that their sum is 18670. 3
28. Mudhol Hounds (a type of breed of Indian dogs) are largely found in North Karnataka's Bagalkote and Vijayapura districts. The government took an initiative to protect this breed by providing support to those who adopted these dogs. Due to this initiative, the number of these dogs increased. The number of Mudhol dogs in six villages of Karnataka are as follows:  
Village A: 18, Village B: 36, Village C: 12, Village D: 48, Village E: 18, Village F: 24  
Prepare a pictograph for the given data. 3
29. Find the common factors of: 3
  - a. 20 and 28
  - b. 35 and 50
30. Find the smallest number that is a multiple of all the numbers from 1 to 10. 3
31. Where will the hour hand of a clock stop if it starts 3
  - (a) from 6 and turns through 1 right angle?
  - (b) from 3 and turns through 3 right angles?
  - (c) from 7 and turns through 2 straight angles?

### Section D

32. A survey of 120 school students was conducted to find out which activity they preferred to do in their free time: 4+1

| Preferred Activity  | Number of Students |
|---------------------|--------------------|
| Playing             | 45                 |
| Reading story books | 30                 |
| Watching TV         | 20                 |
| Listening to music  | 10                 |
| Painting            | 15                 |

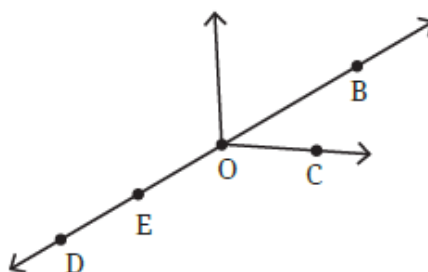
Draw a bar graph to illustrate the above data.

(taking the scale of 1 unit length = 5 students.)

Q. Which activity is preferred by most students other than playing?

33. In the given Fig.name: 5

- A line
- An acute angle
- An obtuse angle
- A ray with initial (starting) point E
- A line segment



34. (a) What is the smallest 4-digit number. Express it as a product of primes. 3+2  
 (b) List all the pairs of twin – primes between 1 and 20.
35. (a) Copy the table and mark the super cells. 3+2

|     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|
| 200 | 577 | 626 | 345 | 790 | 694 | 109 | 198 |
|-----|-----|-----|-----|-----|-----|-----|-----|

- (b) How many steps does the number 2638 take to reach the Kaprekar number?

### Section E

36. Read the following text carefully and answer the questions that follow: 4

In a school, students are arranging chairs in the auditorium for an event. They noticed that arranging chairs in a triangular pattern helps save space. The number of chairs in each row forms a sequence: 1, 3, 6, 10, 15, ... These numbers are called triangular numbers.

- What is the next triangular number after 15? (1)
- How many chairs are there in the 4th row of the triangular arrangement? (1)
- Explain how triangular numbers are formed. (2)

OR

- Draw a diagram to show the arrangement of chairs for the first 4 triangular numbers. (2)

37. Read the following text carefully and answer the questions that follow:

4

**Prime Numbers and Composite Numbers**

Guna and Anshu are packing figs. Guna wants to pack 12 figs in a box, and Anshu wants to pack 7 figs in a box. They notice that 12 can be arranged in multiple rectangular arrangements (like  $3 \times 4$ ,  $2 \times 6$ , or  $1 \times 12$ ), while 7 can only be arranged in one way ( $1 \times 7$ ). This shows that 12 is a composite number with multiple factors, while 7 is a prime number with only two factors. This activity helps them understand the difference between prime and composite numbers.

- (a) Is 21 a prime number or a composite number? (1)
- (b) Is 37 a prime number or a composite number? (1)
- (c) List all the factors of 24. (2)

**OR**

- (c) List the first four multiples of 18 (2)

38. Read the following text carefully and answer the questions that follow:

4

The Ashoka Chakra on the Indian flag has 24 spokes. Each spoke is equally spaced, forming equal angles between them. Ravi wants to calculate the angle between two adjacent spokes. Since a circle has 360 degrees, dividing it by 24 spokes gives 15 degrees between each spoke. Ravi calculates that the angle between two adjacent spokes is 15 degrees. This helps him understand the symmetry of the Ashoka Chakra.

- (a) How many degrees are in a full circle? (1)
- (b) What is the angle between two adjacent spokes of the Ashoka Chakra? (1)
- (c) What is the largest acute angle formed between two spokes? (2)

**OR**

- (c) If in a cycle wheel the angle between two adjacent spokes is  $30^\circ$ , how many spokes does the wheel have? (2)

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