



**SOF INTERNATIONAL  
MATHEMATICS OLYMPIAD**

**SYLLABUS**

**Section – 1 :** Verbal and Non-Verbal Reasoning.

**Section – 2 :** Integers, Fractions and Decimals, Exponents and Powers, Algebraic Expressions, Simple Linear Equations, Lines and Angles, Comparing Quantities, The Triangle and its Properties, Symmetry, Congruence of Triangles, Rational Numbers, Perimeter and Area, Data Handling, Visualising Solid Shapes, Practical Geometry.

**Section – 3 :** The Syllabus of this section will be based on the syllabus of Mathematical Reasoning.

**Section – 4 :** Higher Order Thinking Questions - Syllabus as per Section – 2.

Total Questions : 50

Time : 1 hr.

| PATTERN & MARKING SCHEME |                       |                            |                          |                       |
|--------------------------|-----------------------|----------------------------|--------------------------|-----------------------|
| Section                  | (1) Logical Reasoning | (2) Mathematical Reasoning | (3) Everyday Mathematics | (4) Achievers Section |
| No. of Questions         | 15                    | 20                         | 10                       | 5                     |
| Marks per Ques.          | 1                     | 1                          | 1                        | 3                     |

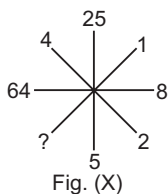
**LOGICAL REASONING**

1. Which will come next in the series?  
az, by, cx, \_\_\_?

- (A) ef (B) gh  
(C) ij (D) dw

2. Which number will replace the (?) in Fig. (X)?

- (A) 1  
(B) 2  
(C) 3  
(D) 4



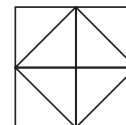
3. Which of the following options most closely resembles the mirror image of the given word, if the mirror is placed vertically to the left?

**STROKE**

- (A) STROKE (B) EKORTS  
(C) ROKETS (D) EKORTS

4. Count the number of triangles in the given figure.

- (A) 8  
(B) 10  
(C) 12  
(D) 14



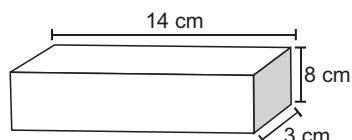
**MATHEMATICAL REASONING**

5. The value of  $4\frac{3}{4} - 2\frac{1}{2} =$

- (A)  $1\frac{1}{4}$  (B)  $1\frac{3}{4}$   
(C)  $2\frac{1}{4}$  (D)  $2\frac{3}{4}$

- (A)  $25n$  (B)  $25 - n$   
(C)  $25 + n$  (D)  $25 \div n$

6. This rectangular prism has a length of 14 cm, a height of 8 cm, and a width of 3 cm. What is the volume?



- (A) 25 cu cm (B) 42 cu cm  
(C) 112 cu cm (D) 336 cu cm

8. What is the prime factorization of 45?

- (A)  $2^3 \times 5$  (B)  $3^2 \times 5$   
(C)  $5^2 \times 3$  (D)  $5^2 \times 9$

9. The value of  $11.3 \times 2.7 =$  \_\_\_\_\_.

- (A) 29.31  
(B) 29.51  
(C) 30.31  
(D) 30.51

7. Which expression represents the product of  $n$  and 25?

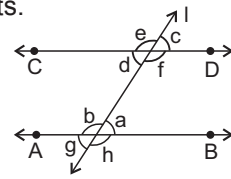
10. Mohit gains 60 paise on ₹ 60. His gain percent is \_\_\_\_\_.

- (A) 1%  
(B) 0.1%  
(C) 2%  
(D) 1.1%

## EVERYDAY MATHEMATICS

- 11.** Kartik can throw a ball  $50\frac{3}{5}$  metres high. Ayan can throw the same ball  $48\frac{1}{3}$  metres high. How much farther can Kartik throw the ball than Ayan?
- (A)  $2\frac{2}{15}$  m                      (B)  $2\frac{4}{15}$  m  
 (C)  $2\frac{3}{5}$  m                        (D)  $2\frac{4}{5}$  m
- 12.** In a parking lot, 1 out of every 8 cars is blue. What percent of the cars in this lot are blue?
- (A) 1.25%                      (B) 7%  
 (C) 9%                          (D) 12.5%
- 13.** A duck flew at speed of 18 km per hour for 3 hours, then at speed of 15 km per hour for 2 hours. How far did the duck fly in all?  $\left(\text{Speed} = \frac{\text{Distance}}{\text{Time}}\right)$
- (A) 69 km                      (B) 75 km  
 (C) 81 km                      (D) 84 km

## ACHIEVERS SECTION

- 14.** In a quiz, 40 prizes consisting of 1<sup>st</sup> and 2<sup>nd</sup> prizes only are to be given. 1<sup>st</sup> and 2<sup>nd</sup> prizes are worth ₹ 2500 and ₹ 1500, respectively. If the total prize money is ₹ 85,000, then
- (i) The equation formed is  
 (ii) The number of 1<sup>st</sup> prizes are  
 (iii) The number of 2<sup>nd</sup> prizes are
- |   | (i) | (ii) | (iii) |
|---|-----|------|-------|
| (A) $2500x + 1500(40 - x) = 85000$      | 25  | 15   |       |
| (B) $2500x - 1500(40 - x) = 85000$      | 36  | 4    |       |
| (C) $2500x \times 1500(x - 40) = 85000$ | 20  | 20   |       |
| (D) $2500x - 1500(x - 40) = 85000$      | 15  | 25   |       |
- 15.** Study the given statements.
- Statement - I :** e and h are supplementary angles.  
**Statement - II :** c and g are equal angles.
- 
- Which of the following options is correct?
- (A) Both statement-I and statement-II are true.  
 (B) Statement-I is true and statement-II is false.  
 (C) Statement-I is false and statement-II is true.  
 (D) Both statement-I and statement-II are false.

-----  
 SPACE FOR ROUGH WORK

## ANSWERS

IMO – 1. (D) 2. (A) 3. (D) 4. (C) 5. (C) 6. (D) 7. (A) 8. (B) 9. (D) 10. (A) 11. (B) 12. (D) 13. (D) 14. (A) 15. (C)