SCIENCE OLYMPIAD FOUNDATION

SAMPLE PAPER SYLLABUS 2019-20

IMO

CLASS 7

IMO

SOF INTERNATIONAL MATHEMATICS OLYMPIAD

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

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.

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

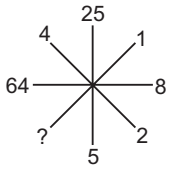


Fig. (X)

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) ƨTЯOЖE (B) EKORTS

(C) ROKETS (D) ƎЖOЯTƨ

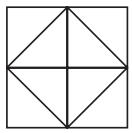
4. Count the number of triangles in the given figure.

(A) 8

(B) 10

(C) 12

(D) 14



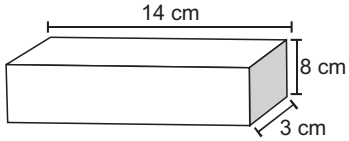
MATHEMATICAL REASONING

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) $2\frac{3}{4}$

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

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

(A) $25n$

(B) $25 - n$

(C) $25 + n$

(D) $25 \div n$

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 × 2.7 = _____.

(A) 29.31

(B) 29.51

(C) 30.31

(D) 30.51

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 $50\frac{3}{5}$ m high. Ayan can throw the same ball $48\frac{1}{3}$ m 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 1st and 2nd prizes only are to be given. 1st and 2nd 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 1st prizes are

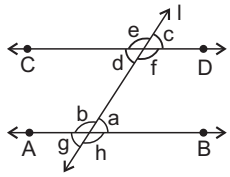
(iii) The number of 2nd prizes are

	(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

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)