**SOF OLYMPIADS**

**I M O**

**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**

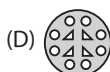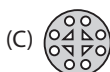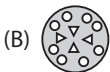**Section – 1 :** Verbal and Non-Verbal Reasoning.

**Section – 2 :** Patterns in Mathematics, Lines and Angles, Number Play, Data Handling and Presentation, Prime Time, Perimeter and Area, Fractions, Playing with Constructions, Symmetry, The Other Side of Zero.

**Section – 3 :** Syllabus as per Section – 2.

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

## LOGICAL REASONING

1. The given question consists of a set of three figures X, Y and Z which shows the sequence of folding of a piece of paper. Fig. Z shows the manner in which the folded paper has been cut. Select a figure from the options which shows the unfolded form of Fig. Z.



(A)    (B)    (C)    (D)

2. Megha walks 120 m towards East, then takes a left turn and walks 60 m. She then turns left again and walks 80 m. She then takes a right turn and walks 40 m. Finally, she walks 40 m after turning to her left. How far is she now from her starting point?

(A) 60 m    (B) 100 m    (C) 140 m    (D) 40 m

3. Find the number of squares formed in the given figure.



(A) 9                 (B) 10

(C) 11               (D) More than 11

## MATHEMATICAL REASONING

4. How many of the given letters have pairs of perpendicular lines?

F M A H I E

(A) 4    (B) 5    (C) 6    (D) 3

**5.** Which of the following is the correct representation of the number of story books sold in the month of May, if 1 ▭ = 150 books?
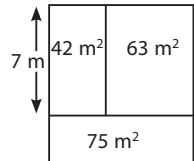
| Months | Number of books sold |
|--------|------|
| May | |
| June | 600 |
| July | 450 |
| August | 300 |
| Total | 2100 |

(A) ▭▭▭▭▭▭▭

(B) ▭▭▭▭▭

(C) ▭▭▭▭

(D) ▭▭▭▭▭

**6.** Which of the following clock timings forms a palindrome?
(A) 06:56  (B) 12:12  (C) 10:22  (D) 10:01

## EVERYDAY MATHEMATICS

**7.** Riddhi joined three rectangular pieces of cloth to make a big rectangular table cloth (as shown in the given figure). Area of each rectangle is given inside. Find the cost of lacing the table cloth formed at the rate of ₹ 32 per m. (Ignore the stitching margins).

7 m | 42 m² | 63 m² | 75 m²

(A) ₹ 1800  (B) ₹ 1728
(C) ₹ 1290  (D) ₹ 1350

**8.** If the price of diesel was ₹ 68 in 2017, increased to ₹ 70 in 2018, decreased by ₹ 6 in 2019, increased by ₹ 16 in 2020, then what is the price of diesel in 2020?
(A) ₹ 80  (B) ₹ 79  (C) ₹ 64  (D) ₹ 68

## ACHIEVERS SECTION

**9.** Read the given statements carefully and select the CORRECT option.

**Statement-I :** $\dfrac{4}{9}$ of the animals at the farm were cows. $\dfrac{1}{2}$ of the remaining animals were goats and rest were chicks. The fraction of the animals at the farm that were chicks is $\dfrac{5}{18}$.

**Statement-II :** Jyoti had a collection of 640 round, rectangular and triangular stickers. $\dfrac{3}{8}$ of the stickers were round, $\dfrac{1}{4}$ of remaining were triangular and rest were rectangular. She had 200 more rectangular stickers than triangular stickers.
(A) Both Statement-I and Statement-II are true.
(B) Statement-I is true but Statement-II is false.
(C) Both Statement-I and Statement-II are false.
(D) Statement-I is false but Statement-II is true.

**10.** Which of the following options is INCORRECT?
(A) 755712 is divisible by 2, 4 and 8.
(B) 1183 and 1792 are not co-prime numbers.
(C) Prime factors of 255 are 1, 3, 5 and 17.
(D) 7th multiple of greatest factor of 144 is 1008.

## ANSWER KEY

1. (C)  2. (B)  3. (B)  4. (B)  5. (D)  6. (D)  7. (B)  8. (A)  9. (A)  10. (C)