SOF SCIENCE OLYMPIAD FOUNDATION

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 : Patterns, Analogy and Classification, Geometrical Shapes, Mirror and Water Images, Direction Sense Test, Ranking Test, Alphabet Test, Logical Sequence of Words, Puzzle Test, Coding-Decoding.
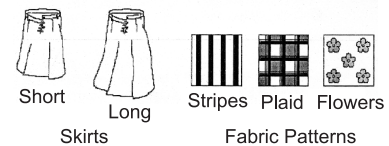
Section – 2 : Numerals, Number names and Number Sense (7 and 8 digit numbers), Computation Operations, Fractions and Decimals, Measurement of Length, Weight, Capacity, Volume, Time, Temperature and Money, Conversions, Geometrical Shapes and Solids, Angles, Perimeter of Various Shapes & Area of Rectangle and Square, Symmetry, Data Handling

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.
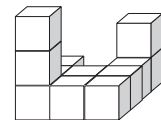
LOGICAL REASONING

1. Shelley is ordering a skirt from a catalog. She can choose one of two lengths: a short skirt or a long skirt. Then she can choose one of three fabric patterns: stripes, plaid or flowers. At most how many different combinations could Shelley order choosing a length and a fabric pattern?

Short | Long
Skirts

Stripes | Plaid | Flowers
Fabric Patterns

(A) 2   (B) 3   (C) 5   (D) 6

2. The number of cubes in the given figure is _____.

(A) 11   (B) 12
(C) 13   (D) 14

3. Find the odd numeral out.

(A) 7   (B) 9   (C) 4   (D) 6

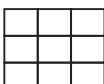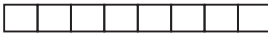**4.** Which of the following is ninth to the right of the seventeenth from the right end of the given arrangement?

M 4 E T % J 9 I B @ U 8 © N # F 1 V 7 ★ 2 A H 3 Y 5 $ 6 K
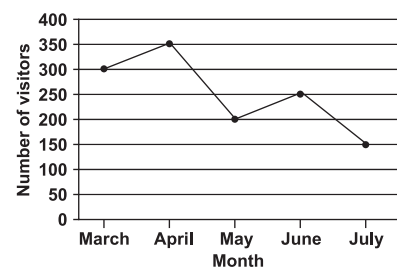
(A) A   (B) %   (C) I   (D) Y

MATHEMATICAL REASONING

5. Which figure has an area of 8 sq. units and a perimeter of 12 units? (Each square block is of side 1 unit).

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

6. The line graph shows the number of people who visited a museum from March to July. How many more visitors were there in April than in June?
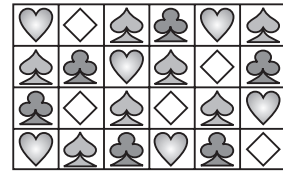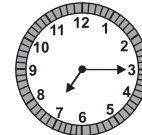
(A) 200
(B) 350
(C) 150
(D) 100

7. How many angles inside the figure are greater than a right angle?
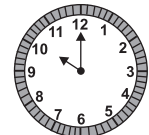(A) 5   (B) 6
(C) 7   (D) 8

8. What fraction of the figures are [♡] ?
(A) 1/4
(B) 1/3
(C) 1/5
(D) 1/2

9. Katrina went to watch a movie. The time at which the movie started and ended are shown on the two clocks given. How long did the movie last ?
(A) 1 hr 45 mins
(B) 2 hrs 45 mins
(C) 2 hrs 15 mins
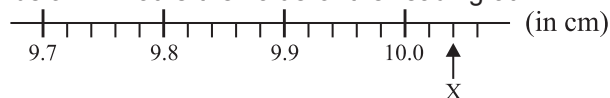(D) 3 hrs

Starting Time   Ending Time

10. If 'White' is called 'Blue', 'Blue' is called 'Red', 'Red' is called 'Yellow', 'Yellow' is called 'Green', 'Green' is called 'Black', 'Black' is called 'Violet' and 'Violet' is called 'Orange', then what would be the colour of human blood?
(A) Red   (B) Yellow   (C) Green   (D) Violet

EVERYDAY MATHEMATICS

11. Harry had 500 coins in a jar. He sorted the coins into 25 different stacks. Each stack had the same number of coins. How many coins were in each stack?
(A) 20   (B) 45   (C) 25   (D) 12

12. There are 914 students enrolled in Elementary School. Middle School has 276 fewer students than elementary school. How many students are enrolled at Middle School?
(A) 642   (B) 762   (C) 1,190   (D) 638

13. Tom left home at 7 : 15 a.m. to go to work. He returned home at 4 : 45 p.m. For how long Tom was away from home?
(A) 7 hours 30 minutes   (B) 9 hours 30 minutes
(C) 3 hours 30 minutes   (D) 8 hours 30 minutes

ACHIEVERS SECTION

14. Part of a scale is shown below. What is the value of the reading at X?

9.7   9.8   9.9   10.0   (in cm)
X

(A) 10.02 cm   (B) 10.04 cm   (C) 10.2 cm   (D) 10.4 cm

15. Vivek rented a bicycle for 3 hours. How much did he pay?
(A) ₹ 13
(C) ₹ 22
(B) ₹ 19
(D) ₹ 30

Bicycle for Rent
First hour : ₹ 7
Every additional $\frac{1}{2}$ hour : ₹ 3

SPACE FOR ROUGH WORK

ANSWERS

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