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 : Knowing our Numbers, Whole Numbers, Playing with Numbers, Basic Geometrical Ideas, Understanding Elementary Shapes, Integers, Fractions, Decimals, Data Handling, Mensuration, Algebra, Ratio And Proportion, Symmetry, 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. Rearrange the following letters to make a single word and then choose the category to which it belongs.

F G O R

(A) City   (B) Animal
(C) Vegetable   (D) Person

2. Joy wants to save ₹ 50 to buy a pair of roller blades. He plans to save ₹ 2 in the first month, ₹ 4 in the second month, ₹ 6 in the third month, and ₹ 8 in the fourth month.

Month	Amount saved during month	Total savings
1	₹ 2	₹ 2
2	₹ 4	₹ 6
3	₹ 6	₹ 12
4	₹ 8	₹ 20
•	•	•
•	•	•
•	•	•

If Joy continues this savings pattern, how many months will Joy take to save ₹ 50 ?
(A) 5 months   (B) 7 months
(C) 9 months   (D) 13 months

3. △ △ = □ △ □ , △ □ = ○ ○ , △ = 50

Using the diagram above, which of the following statements is true?
(A) ○ < △   (B) □ > ○
(C) △ < □   (D) △ < ○

4. According to the diagram, how many students have more than one favourite type of book?

Favourite Book Types
Fantasy   Biography   Mystery
x = 1 student
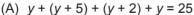
(A) 3   (B) 5   (C) 7   (D) 8

MATHEMATICAL REASONING

5. In Parul's garden, there are 25 rows of vegetables. She has five more rows of peppers than tomatoes and two fewer rows of cucumbers than tomatoes. If y represents the number of rows of tomatoes in the garden, which number sentence can be used to find how many rows of each vegetable were planted?
(A) $y + (y + 5) + (y + 2) + y = 25$
(B) $(y + 5) + y = 25$
(C) $(y + 5) + (y – 2) = 25$
(D) $(y + 5) + (y – 2) + y = 25$

6. Which of the following figures have at least two lines of symmetry?

P   Q   R   S

(A) Only P   (B) Both P and Q
(C) Both Q and R   (D) P, Q, R and S

7. Subtract 29.375 from the sum of 85.75 and 5.9.
(A) 62.275   (B) 63.275
(C) 64.275   (D) 65.275

8. The five-day forecast for the South Pole lists the low temperatures (in Fahrenheit) as –24°, –28°, –29°, –25°, and –30°. Which choice shows the temperatures in order from the lowest to the highest?

(A) –24°, –25°, –28°, –29°, –30°
(B) –30°, –28°, –29°, –25°, –24°
(C) –30°, –29°, –28°, –25°, –24°
(D) –30°, –29°, –28°, –24°, –25°

9. What is the value of the given expression?

$$3 + 3 \times 3(4 + 3)$$

(A) 38   (B) 42

(C) 45   (D) 66

10. Mohit is selling candy bars. He has chocolate bars, nut bars, and mint bars. If a customer buys two bars, and the bars are not of the same type, how many different combinations are possible?

(A) 3   (B) 6

(C) 9   (D) 12

EVERYDAY MATHEMATICS

11. Vinita can type 28 words per minute. At this rate, how many words can Vinita type in 5.5 minutes?

(A) 154   (B) 157

(C) 159   (D) 162

12. At a school, there are 704 desks to place into 22 classrooms. If the same number of desks is placed in each classroom, how many desks will be there in each room?

(A) 32   (B) 34

(C) 42   (D) 44

13. A vessel has 5 litres 120 millilitres of mango shake. How many glasses each of 40 ml capacity, can be filled with it?

(A) 122   (B) 130

(C) 118   (D) 128

ACHIEVERS SECTION

14. Fill in the blanks:

(i) The opposite sides of a parallelogram are ___P___ and ___Q___.

(ii) A quadrilateral having only one pair of opposite sides parallel is called a ___R___.

(iii) A parallelogram having all the sides equal is called a ___S___.

	P	Q	R	S
(A)	Equal	Parallel	Rectangle	Rhombus
(B)	Equal	Non-parallel	Trapezium	Kite
(C)	Equal	Parallel	Trapezium	Rhombus
(D)	Equal	Parallel	Trapezium	Kite

15. Study the statements given below and choose the correct answer.

Statement 1 : Numbers having more than two factors are known as composite numbers.

Statement 2 : A number for which sum of all its factors is equal to twice the number is called a perfect number.

(A) Statement-1 is true and statement-2 is false.

(B) Statement-1 is false and statement-2 is true.

(C) Both statements are true.

(D) Both statements are false.

SPACE FOR ROUGH WORK