

CLASS

6

SAMPLE PAPER

Science  
Olympiad  
Foundation

For Excellence in Science, Maths & IT

## INTERNATIONAL MATHEMATICS OLYMPIAD

The actual test paper has 50 questions. Time allowed : 60 minutes. There are 3 sections, 20 questions in section I, 20 in section II and 10 in section III.

**Section I** : Logical Reasoning, **Section II** : Mathematical Reasoning &

**Section III** : Everyday Mathematics

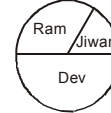
### SYLLABUS

Number operations, Indian and International System, Bodmas Rule, Factors and Multiples, divisibility tests, HCF and LCM, Natural and whole numbers, Integers and operations on integers, Fraction and Decimal Algebraic Expressions, Linear equations, Solving an Equation, Line, Line Segment and Ray, Angle, Triangle, Quadrilateral, Circles, Types of triangles, Types of quadrilaterals, Symmetry, Perimeter and Area, Frequency diagram, Pictograph, Bar Graphs.

## LOGICAL REASONING

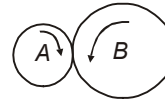
1. The following are the results from the class election.  
If 150 students voted, about how many votes did Ram receive?  
(A) 25                      (B) 38                      (C) 50  
(D) 75                      (E) None of these.

Class President Results



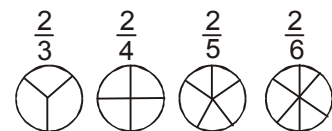
2. The weekly milk order for the New Guest house includes 40 litres of low-fat milk and 15 litres of chocolate milk. What is the ratio of the number of low-fat litres to chocolate litres in the New Guest house's weekly milk order?  
(A) 3 : 1                      (B) 5 : 1                      (C) 5 : 3                      (D) 8 : 3                      (E) None of these.

3. When wheel B turns 2 revolutions, wheel A turns 5 revolutions.  
when wheel A turns 40 revolutions,  
how many revolutions does wheel B turn?



- (A) 4                      (B) 16                      (C) 80                      (D) 100                      (E) None of these.

4. Sita studied these pictures of fractions.  
What pattern might she correctly notice in the fractions?



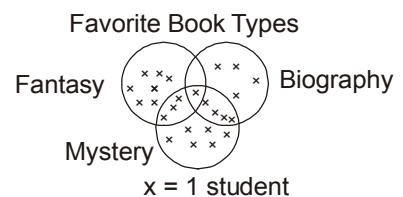
- (A) Increasing the denominator increases the value of the fraction  
(B) If the denominator stays the same and the numerator increases, the fraction names as smaller amount  
(C) Increasing the denominator by 2 cuts the size of the fraction in half  
(D) If the numerator stays the same and the denominator increases, the fraction names a smaller amount.  
(E) None of these.

5. Joy wants to save Rs. 50 to buy a pair of roller blades.  
He plans to save Rs. 2 the first month,  
Rs. 4 the second month,  
Rs. 6 the third month, and Rs. 8 the fourth month.  
If Joy continues this savings pattern,  
how many months will it take Joy to save Rs. 50 ?  
(A) 5 months                      (B) 7 months                      (C) 9 months  
(D) 13 months                      (E) None of these.

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

6.  $\triangle \triangle = \square \triangle \square$ ,  $\triangle \square = \bigcirc \bigcirc$ ,  $\triangle = 50$   
Using the diagram above, which of the following statements is true?  
(A)  $\bigcirc < \triangle$                       (B)  $\square > \bigcirc$                       (C)  $\triangle < \square$                       (D)  $\triangle < \bigcirc$   
(E) None of these.

7. According to this diagram,  
how many students have more than one favorite type of book?  
(A) 3    (B) 5  
(C) 7    (D) 8  
(E) None of these.



## MATHEMATICAL REASONING

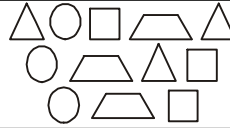
8. In Parul's garden, there are 25 rows of vegetables. She has five more rows of peppers than tomatoes and two fewer rows of cucumbers than tomatoes. If y represents the number of rows of tomatoes in

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)  $(y + 5) + (y - 2) + y = 25$  (E) None of these.

9. What percent of these shapes are triangles?

- (A) 0.25% (B) 3% (C) 12%  
 (D) 25% (E) None of these.



10. Which of the following statements is true?

- (A)  $2 > -2$  (B)  $2 < -4$  (C)  $-2 < -4$  (D)  $-4 > 4$  (E) None of these.

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

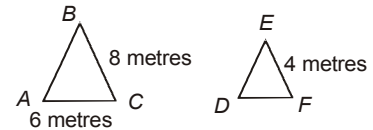
- (A)  $-24^\circ, -25^\circ, -28^\circ, -29^\circ, -30^\circ$  (B)  $-30^\circ, -28^\circ, -29^\circ, -25^\circ, -24^\circ$   
 (C)  $-30^\circ, -29^\circ, -28^\circ, -25^\circ, -24^\circ$  (D)  $-30^\circ, -29^\circ, -28^\circ, -24^\circ, -25^\circ$  (E) None of these.

12. Which of the following fractions is closest to 0 ?

- (A)  $\frac{5}{12}$  (B)  $\frac{2}{3}$  (C)  $\frac{5}{6}$  (D)  $\frac{3}{4}$  (E) None of these.

13.  $\triangle ABC$  is similar to  $\triangle DEF$ . What is the length of  $\overline{DF}$  ?

- (A) 2 metres (B) 3 metres (C) 5 metres  
 (D) 10 metres (E) None of these.



14. What is the value of the following expression?  $3 + 3^2(4 + 3)$

- (A) 38 (B) 42 (C) 45 (D) 66 (E) None of these.

15. Jyoti got  $1\frac{1}{2}$  times as many problems right as she did wrong on her science test. If she answered 20 questions incorrectly, how many questions were on the test?

- (A) 10 (B) 30 (C) 50 (D) 70 (E) None of these.

16. Sheena began her book by reading five pages the first day, eight pages the second day, eleven pages the third day, 14 pages the fourth day, and so on. How many pages will she read on the twelfth day if she continues this pattern?

- (A) 35 pages (B) 38 pages (C) 41 pages (D) 44 pages (E) None of these.

17. 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 (E) None of these.

### EVERYDAY MATHEMATICS

18. 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 (E) None of these.

19. 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 in each room?

- (A) 32 (B) 34 (C) 42 (D) 44 (E) None of these.

20. The students in a wood working class were building birdhouses. It takes four pieces of wood (each piece  $\frac{3}{4}$  of foot long) to build a birdhouse. At most, how many birdhouses can be made from 4 feet of wood?

- (A) 1 (B) 3 (C) 4 (D) 5 (E) None of these.

### ANSWERS KEY

1. (C) 2. (D) 3. (B) 4. (D) 5. (B) 6. (A) 7. (D) 8. (D) 9. (D) 10. (A)  
 11. (C) 12. (A) 13. (B) 14. (D) 15. (C) 16. (B) 17. (A) 18. (A) 19. (A) 20. (A)