The Gen X Series

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NSO National Science Olympiad
NCO National Cyber Olympiad
IEO International English Olympiad

OLYMPIAD SAMPLE PAPERS 10

Useful for Olympiads Conducted at School, National & International Levels

Compiled By
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Strictly According to the Latest Syllabus of Olympiad

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Head Office
F-2/16, Ansari Road, Daryaganj,
New Delhi-110002 ☎ 23240026, 27, 28
✉ info@vspublishers.com
🌐 www.vspublishers.com

Regional Office
5-1-707/1, Brij Bhawan (Beside Central
Bank of India Lane) Bank Street, Koti,
Hyderabad - 500 095 ☎ 040-24737290
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P.S. While every care has been taken to ensure correctness of content, if you come across any error, howsoever minor, anywhere in the book, do not hesitate to discuss with your teachers while pointing that out to us in no uncertain terms.

We wish you All the Best!

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INTERNATIONAL MATHEMATICS OLYMPIAD (IMO)

Mock Test Paper 1

Total Questions : 50 Time : 1 Hour

I M O
INTERNATIONAL MATHEMATICS OLYMPIAD

PATTERN AND MARKING SCHEME				
Section	**(1) Logical Reasoning**	**(2) Mathematical Reasoning**	**(3) Everyday Mathematics**	**(4) Achievers Section**
No. of Questions	15	20	10	5
Marks per Questions	1	1	1	3

SYLLABUS

Section – 1: Verbal and Non-Verbal Reasoning.

Section – 2: Real Numbers, Polynomials, Pair of Linear Equations in Two Variables, Quadratic Equations, Arithmetic Progressions, Triangles, Coordinate Geometry, Introduction to Trigonometry, Some Applications of Trigonometry, Circles, Constructions, Areas Related to Circles, Surface Areas and Volumes, Statistics, Probability.

Section – 3: The Syllabus of this section will be based on the syllabus of Mathematical Reasoning and Quantitative Aptitude.

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

LOGICAL REASONING

1. In a row of 40 girls, Sarika was shifted 10 places to the right of Reena and Kirti was shifted 10 places to the left of Vibha. If Vibha was twenty-sixth from the left and there were three girls between Kirti and Sarika after shifting, then what was the position of Reena in the row?
   (A) 19th from the right end
   (B) 20th from the left end
   (C) Data insufficient
   (D) 11th from the right end

2. There were 4 sticks of different heights P, Q, R and S displayed in a shop. S is neither as tall as P nor as short as R. Q is shorter than S but taller than R. If Maya wants to purchase the tallest stick, which one should she purchase?
   (A) Only S (B) Either P or S
   (C) Only P (D) Either Q or S

3. There are six balls A, B, C, D, E and F placed in a hexagonal shape. The length of all the sides of the hexagon are same. A is not adjacent to B or C; D is not adjacent to C or E; B and C are adjacent; F is in the middle of D and C. Which of the following is not a correct neighbour pair?
   (A) F and D (B) E and B
   (C) A and F (D) None of these

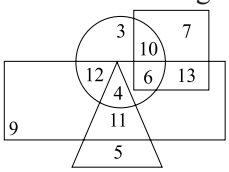
4. Aashima tells Punit, showing a frame hanging on wall, "I am the only daughter of this lady and her son is your maternal uncle." Identify how Aashima is related to Punit's father?
   (A) Sister-in-law
   (B) Wife
   (C) Either (A) or (B)
   (D) Neither (A) nor (B)

5. If ROSE is coded as 6821, CHAIR is coded as 73456 and PREACH is coded as 961473, what will be the code for SEARCH?
   (A) 214673
   (B) 246173
   (C) Insufficient data
   (D) None of these

6. A delivery boy was returning to the shop, which was in front of him to the North. When the shop was 100 metres away from him, he turned to the left and moved 50 metres to deliver the last packet. He then moved in the same direction for 40 metres, turned to his right and moved 100 metres. How far is he from the shop?
   (A) 150m (B) 100m
   (C) 90m (D) None of these

7. Some of the letters are missing, which are given in that order as one of the options below it. Choose the correct option.
   _____ _____ded _____ _____ ed ____ de
   (A) deeed (B) deede
   (C) eddee (D) eeded

8. See the Venn diagram given below:



   (1) Rectangle represents females.
   (2) Triangle represents educated.
   (3) Circle represents villagers.
   (4) Square represents doctors.

   Among the following who is neither a doctor nor educated but is villager and a female?
   (A) 3 (B) 12
   (C) 6 (D) None of these

9. From the following equations which one is correct if '+' stands for division, '÷' stands for multiplication, '×' stands for subtraction and '–' stands for addition.
   (A) $18 \div 6 - 7 + 5 \times 2 = 20$
   (B) $18 + 6 \div 7 \times 5 - 2 = 18$
   (C) $18 \times 6 + 7 \div 5 - 2 = 16$
   (D) None of these

10. If A + B means A is the mother of B; A − B means A is the brother B; A % B means A is the father of B and A × B means A is the sister of B, which of the following shows that P is the maternal uncle of Q?
   (A) Q − N + M × P
   (B) P + S × N − Q
   (C) P − M + N × Q
   (D) Q − S % P

11. Introducing a boy, a girl said, "He is the son of the daughter of the father of my uncle." How is the boy related to the girl?
   (A) Cousin (B) Nephew
   (C) Uncle (D) Son-in-law

12. All the faces of a cube are painted with red colour. Then it is cut into 125 small equal cubes. How many small cubes will be formed having no face coloured?
   (A) 27 (B) 8
   (C) 16 (D) 24

13. Choose the suitable water image of the given Fig. (X)

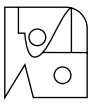
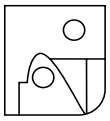
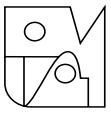
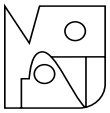


   Fig. (X)

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

14. Pointing to a photograph of a boy Suresh said, "He is the son of the only son of my mother." How is Suresh related to that boy?
   (A) Brother (B) Uncle
   (C) Cousin (D) Father