



National Cyber Olympiad

The actual test paper has 50 questions. Time allowed : 60 minutes. There are 3 sections, 15 questions in section I, 15 in section II and 20 in section III.

SYLLABUS

Section – I (Mental ability) : Numerals and number names, Addition, Subtraction, Fractional numbers, Multiplication, Division, Time, Straight and curved lines, Calendar, Measurement of weight and capacity, Geometrical shapes, Money.

Section – II (Logical and analytical reasoning) : Problems based on figures, Find odd numeral out, Series completion, Coding-decoding, Mathematical reasoning, Analytical reasoning, Mirror images, Embedded figures.

Section – III (Computers and IT) : About computers (General information), Parts of computer, Input/Output/Processing devices, Hardware/Software, History of computer, LOGO (introduction), MS DOS/MS Paint.



National Science Olympiad

The actual test paper has 50 questions. Time allowed : 60 minutes. There are 2 sections, 20 questions in section I and 30 in section II.

SYLLABUS

Section – I (Mental ability) : Numerals and number name, Addition, Subtraction, Fractional numbers, Multiplication, Division, Time, Straight and curved lines, Calendar, Measurement of weight and capacity, Geometrical shapes, Money.

Section – II (Science) : Plant and Animal Life, Matter, Earth & its Surroundings, Human Body, Place to Live, Means of Transport.



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

Four digit Numbers, Addition, Multiplication, Division, Fractions, Money, Length (conversions), Weight, Capacity, Time, Point, Line and plane Figures.



National Cyber Olympiad

MENTAL ABILITY

1. The fraction of unshaded part is



(A) $\frac{2}{3}$

(B) $\frac{1}{3}$

(C) $\frac{1}{2}$

(D) $\frac{3}{2}$

2. 2 Rupees equals

(A) Four 50-paise

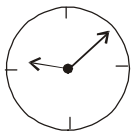
(B) Five 25-paise

(C) Ten 50-paise

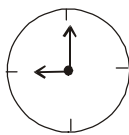
(D) Nine 25-paise

3. Which of the clocks is showing the time 10 minutes past 9 ?

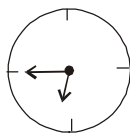
(A)



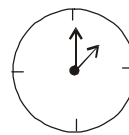
(B)



(C)



(D)



4. The square has

(A) Four equal sides

(B) Two equal sides

(C) Three equal sides

(D) One curved edge

5. In one trip a car can take 6 people. In how many trips can it take 30 people?

(A) 5 trips

(B) 6 trips

(C) 4 trips

(D) 10 trips

6. Raman had 28 balloons. In party 8 balloons were burst. How many are left with him?

(A) 20

(B) 21

(C) 25

(D) 18

7. 72 has

(A) 7 tens

(B) 70 tens

(C) 7 ones

(D) 20 ones

8. In which one of the following numbers, the digits cannot be rearranged to get another three digit number?

(A) 400

(B) 425

(C) 968

(D) 129

LOGICAL AND ANALYTICAL REASONING

9. If \oplus means +, \ominus means -, \uparrow means >, \downarrow means <, then which of the following is not true ?

(A) $2 \oplus 5 \uparrow 4$

(B) $5 \ominus 3 \downarrow 7$

(C) $10 \oplus 5 \uparrow 5$

(D) $4 \ominus 2 \uparrow 7$

10. Find the odd one out.

(A) Sunday

(B) January

(C) Wednesday

(D) Friday

11. Find the alternative which will replace the question mark :

Cobbler-Shoe; Barber-Hair; Carpenter-?

(A) Furniture

(B) Butcher



(C) Artist

(D) Painting

12. $2 + 3 + 16 = 10 + \square$

- (A) 9 (B) 21
(C) 10 (D) 11
-


13. Find odd one out.

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

COMPUTERS & INFORMATION TECHNOLOGY

14. Brain of computer is

- (A) CPU (B) UPC (C) PCU (D) Monitor
-

15.  represents which part of computer ?

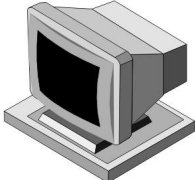
- (A) Keyboard (B) Mouse
(C) CD (D) CPU
-

16. Which of the statements about a computer is not correct?

- (A) You can watch movies on it (B) You can solve your sums on it
(C) You can play games on it (D) You can cook food with it
-

17. The key that erases characters towards the left is

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

18.  is also called

- (A) VDU (B) CPU
(C) ALU (D) CU
-

19. Find the odd term out.

- (A) Keyboard (B) Floppy disk
(C) Monitor (D) MS-Word
-

20. MS-Paint is a window program that is used for

- (A) Calculations (B) Writing letters
(C) Drawing purposes (D) Preparing presentations
-



National Science Olympiad

MENTAL ABILITY

1. If Rahul puts exactly 2 fish in each fishbowl, how many fish will he use to put in 20 bowls ?

- (A) 40 (B) 22 (C) 42 (D) 20

2. Which is true ?

- (A) $6,293 > 4,526$ (B) $4,521 < 4,297$
(C) $6,113 > 6,169$ (D) $6,750 = 6,150$

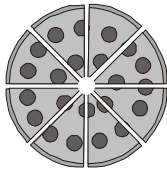
3. Which means seven hundred thousand five hundred ninety-two ?

- (A) 700,592 (B) 705,920 (C) 70,592 (D) 7,005,920

4. What is the value of the 2 in 652,814 ?

- (A) 20,000 (B) 200,000 (C) 2,000 (D) 200

5.



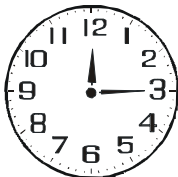
Reena ate $\frac{1}{8}$ of the cake. How much of the cake did she eat ?

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

6. Rajiv had 8 baseball cards. He got some more baseball cards for his birthday, then he had 17 in all. How many baseball cards did he get for his birthday ?

- (A) 7 (B) 8 (C) 6 (D) 9

7.



Which of these shows the same time as the clock above ?

- (A) 12 : 15 (B) 2 : 00 (C) 12 : 23 (D) 2 : 12

8. The chart shows the number of pages Mansi read during four days.

Day	Monday	Tuesday	Wednesday	Thursday
Pages Read	24	17	31	26

How many more pages did Mansi read on Wednesday than on Tuesday ?

- (A) 26 (B) 16
(C) 14 (D) 24

SCIENCE

9. _____ are known as food factories of a plant.
- (A) Green leaves (B) Roots
(C) Stem (D) Flower
-
10. Weather is caused by the
- (A) Sun (B) Night air
(C) Temperature (D) Clouds
-
11. Solar energy comes from
- (A) The sun (B) Tides
(C) Oil (D) Fossils
-
12. Water droplets that are too heavy to float make
- (A) Fog (B) Clouds
(C) Rain (D) Dew
-
13. Which of the following does not take the shape of the container it is in ?
- (A) Pencil (B) Oil
(C) Water (D) Milk
-
14. The bird that can never fly
- (A) Duck (B) Crow
(C) Bulbul (D) Kiwi
-
15. Ducks have
- (A) Short and broad beaks (B) Broad and flat beaks
(C) Slender beaks (D) Pointed beaks
-
16. In which Earth layer do most grasses grow?
- (A) Solid rock (B) Subsoil
(C) Topsoil (D) Bedrock
-
17. Which of these do people build to stop flooding?
- (A) Sidewalks (B) Dams
(C) Bridges (D) Streets
-
18. The birds that lays its eggs in the nest of a crow is
- (A) Cuckoo (B) Parrot
(C) Wood pecker (D) Pigeon
-
19. Which of the following will not dissolve in water?
- (A) Salt (B) Sugar
(C) Sand (D) Baking soda
-
20. Soil helps trees because soil —
- (A) Makes food for the trees (B) Moves the tree seeds to new places
(C) Gives nutrients to the trees (D) Turns the roots into new trees
-



International Mathematics Olympiad

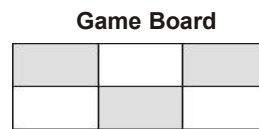
1. A class collected seven hundred fourteen box tops. Which number represents seven hundred fourteen?
 (A) 704 (B) 714 (C) 740 (D) 741

2. What is the standard form of $7,000 + 800 + 20 + 5$?
 (A) 7,285 (B) 7,825
 (C) 7,852 (D) 7,528

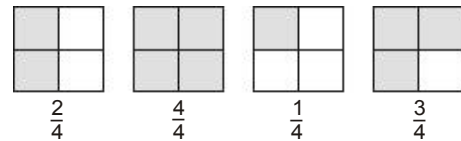
3. The students count 149 balls in the gym. What is another way of writing the number of balls in the gym?
 (A) Fourteen nine (B) One forty-nine
 (C) One hundred forty-nine (D) One hundred fourteen nine

4. Which place value is used to prove that 5,487 is less than 5,874?
 (A) Ones place (B) Tens place (C) Hundreds place (D) Thousands place

5. Tina shades in 3 spaces on a game board. What fraction of the game board is shaded?
 (A) $\frac{3}{6}$ (B) $\frac{3}{5}$
 (C) $\frac{3}{3}$ (D) $\frac{6}{3}$



6. Monty drew models of fractions on the board and asked his students to compare them. Which example shows the fractions listed in order from greatest to least?



- (A) $\frac{2}{4}, \frac{4}{4}, \frac{1}{4}, \frac{3}{4}$ (B) $\frac{4}{4}, \frac{3}{4}, \frac{1}{4}, \frac{2}{4}$
 (C) $\frac{4}{4}, \frac{3}{4}, \frac{2}{4}, \frac{1}{4}$ (D) $\frac{1}{4}, \frac{2}{4}, \frac{3}{4}, \frac{4}{4}$

7. What property of addition will help you find the answer to the problem: $6 + 0 = ?$
 (A) Zero plus any number equals zero
 (B) Zero plus any number equals that number
 (C) Zero minus any number equals that number
 (D) Zero minus any number equals zero

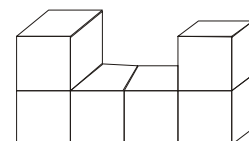
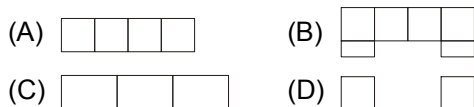
8. Together, Sara and 3 of her friends made a poster. They drew 8 rows of squares with 6 squares in each row. How many squares did Sara and her friends draw on the poster?
 (A) 48 (B) 42 (C) 40 (D) 17

9. Joy has 363 baseball cards. Mickey has 288, John has 412, and Kevin has 126. How many do they have all together?
 (A) 1,089 (B) 1,179 (C) 1,189 (D) 1,279

10. Which of the following has a curved surface and a flat surface?



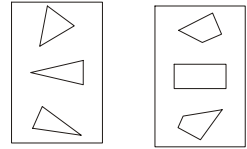
11. How would this block model look from the top?



12. Komal built a birdhouse at summer camp. What shape is the piece of wood that was cut out to make the door of his birdhouse?
 (A) Triangle (B) Diamond
 (C) Circle (D) Pentagon

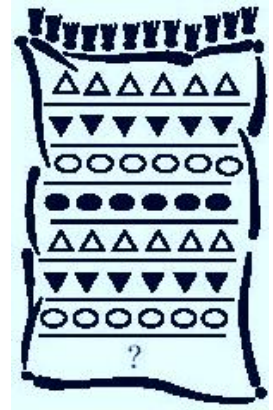


13. Mrs. Ryan shows her class two groups of shapes. Then she asks, "Which rule was used to sort these shapes into groups?"
- (A) Large things and small things
 (B) Triangles and squares
 (C) Circles and figures with 4 sides
 (D) Triangles and figures with four sides



14. Joshua is weaving a pattern into a rug. What would most likely come next?

- (A) ● ● ● ● ● ●
 (B) ○ ○ ○ ○ ○ ○
 (C) △ △ △ △ △ △
 (D) ▼ ▼ ▼ ▼ ▼ ▼



15. Meena made this pattern with balls:



Which of the following uses a rule most different from Meena's pattern?

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

16. If Pawan has baseball practice every fourth day in the month of March, starting with March 1, what date will be his last day of practice for the month?
- (A) March 28
 (B) March 29
 (C) March 30
 (D) March 31

MARCH						
S	M	T	W	Th	F	S
					2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

17. The rule for sorting is "has four or more corners." Which group has been sorted correctly?

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

18. Third-grade students went to a theatre in 8 buses. Each bus took 45 students. How many students went to the theatre?
 (A) 320 (B) 360 (C) 380 (D) 3240
19. On Friday, 1250 people visited the zoo. Three times as many people visited on Saturday than on Friday. How many people visited the zoo on Saturday?
 (A) 3615 (B) 3650 (C) 3750 (D) 3753
20. During Field Day, 1624 students from Shimla Hill School were equally divided into 8 different events. How many students were in each event?
 (A) 203 (B) 206 (C) 221 (D) 224

SAMPLE ANSWER SHEET

1. **NAME :** If your name is SACHITA IYER, then you should write as follows :

S	A	C	H	I	T	A	I	Y	E	R										
---	---	---	---	---	---	---	---	---	---	---	--	--	--	--	--	--	--	--	--	--

2. **FATHER'S NAME :** If your father's name is SATISH KUMAR SHARMA, then you should write as follows :

S	A	T	I	S	H	K	U	M	A	R	S	H	A	R	M	A				
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--	--	--	--

SCHOOL CODE

M	H	0	5	4	7
A	A	●	0	0	0
B	B	1	1	1	1
C	C	2	2	2	2
D	D	3	3	3	3
E	E	4	4	4	4
F	F	5	●	5	5
G	G	6	6	6	6
H	●	7	7	7	●
I	I	8	8	8	8
J	J	9	9	9	9
K	K				
L	L				
●	M				
N	N				
O	O				
P	P				
Q	Q				
R	R				
S	S				
T	T				
U	U				
V	V				
W	W				
X	X				
Y	Y				
Z	Z				

3. **SCHOOL CODE**
Write your school code i.e. if your school code is MH0547 darken as follows :

Darken the circle

6. **GENDER**
If you are a boy, then darken Male circle

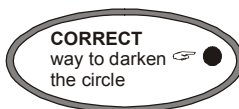
GENDER	
MALE ●	FEMALE ○

4. **CLASS**
If you are in Class 10, then you should darken as follows :

5. **ROLL NO.**
If your roll no. is 587, then you should write and darken the circles as follows :

CLASS			ROLL NO.		
1	0	5	8	7	
●	●	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	●	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	●	8
9	9	9	9	9	9

Darken the circle



7. If your choice for Answer 1 is C, then you should darken the circle as follows :

1. (A) (B) ● (D)

Darken the circle

MARK YOUR ANSWERS WITH HB PENCIL/BALL POINT PEN (BLUE/BLACK)

National Cyber Olympiad

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

National Science Olympiad

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

International Mathematics Olympiad

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

ANSWERS

National Cyber Olympiad

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

National Science Olympiad

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

International Mathematics Olympiad

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