NATIONAL CYBER OLYMPIAD (NCO) NATIONAL SCIENCE OLYMPIAD (NSO) INTERNATIONAL MATHEMATICS OLYMPIAD (IMO)

## Logical Reasoning Sample Test Class-4

Total-Question:15
Time:15.0 Mins

| PATTERN \& MARKING SCHEME |  |
| :---: | :---: |
| Section | (1) Logical Reasoning Sample Test Class-4 |
| No. of Questions | 15 |
| Marks per Ques. | 1 |

## Logical Reasoning Sample Test Class-4

## Q 1.

The number of unit squares in Figure 10 in the given figure pattern is $\qquad$ .


Figure 1


Figure 2


Figure 3

A 66
B 45
C 55
D 36

## Q 2.

Which of the following is the correct mirror image of Figure ( X ), if mirror is placed along MN?


Figure ( X )

B


D


Q 3.
Which of the following options is NOT embedded in the given Figure $(X)$ ?


Figure ( X )



## Q 4.

There are number of cubes in the given figure.


A 8
B 10
C 12
D 15

## Q 5.

In a certain code language, if BOARD is written as $\$ 3 \%$ \# 6 and ROPE is written as $\# 35 @$, then PEAR will be written as $\qquad$ -.

A $5 \% 6 \#$
B $5 \wedge \% \#$
C $\# 6 \% 5$
D 5@\%\#

## Q 6.

If $P$ and $Q$ as well as $R$ and $S$ interchange their positions, then what is the position of $T$ with respect to $P$ ?


A East
B West
C North
D South

## Q 7.

Garima goes to office everyday in July 20XX. If each Sunday and all multiples of 5 are holidays, then how many days she will go to office?

## July 20XX

| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 1 | 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 |  |  |

A 21
B 23
C 22
D 24

Q 8.
The Vanilla cake is larger than the Coconut cake. The Chocolate cake is larger than the Vanilla cake but smaller than the Mango cake. Which of the following is the correct order of cakes from the largest to the smallest?

A Vanilla > Coconut > Chocolate > Mango
B Mango > Chocolate $>$ Coconut $>$ Vanilla
C Mango > Vanilla $>$ Chocolate $>$ Coconut
D Mango > Chocolate $>$ Vanilla $>$ Coconut

## Q 9.

If the given clock is 45 minutes slow, then the correct time after half an hour will be .


A 6 O'clock
B 6:30
C 7 O'clock
D 5:30

## Q 10.

A dog is chasing a cat as shown here.

-The cat starts from 8 m and jumps 3 m every time.
-The dog starts from 5 m and jumps 5 m every time.
If they both start at the same time, in which jump will the dog overtake the cat?
A 1
B 2
C 3
D 4

## Q 11.

Mohit was facing the library. He made a $3 / 4$ turn anticlockwise. Where would he be facing?


A Park
B Home
C Hospital
D Office

## Q 12.

Given below is the folded form of paper. Which of the following is the correct figure when the paper is unfolded along the dotted line?


## A



B


C


D


Q 13.

Which of the following figures will continue the given figure pattern?


A


B


C


D


## Q 14.

Find the missing number, if a certain rule is followed in the given figure.

| 25 | 26 |  |
| ---: | ---: | ---: |
| 24 | 27 |  |
| $?$ | 318 |  |
|  | 332 | 325 |

A 342
B 339
C 456
D 135

## Q 15.

Find the mirror image of figure $(X)$, if the mirror is placed along the dotted line $M N$. Figure $(\mathrm{X}) \quad \mathrm{M}$ BMOE

A BWOE
в $\exists 0 \mathrm{MB}$
c 30M9
D 30以ध

## Answers

Logical Reasoning Sample Test Class-4
$\begin{array}{llllllllllllll}\text { 1.C } & 2 . B & 3 . A & 4 . A & 5 . D & 6 . A & 7 . C & 8 . D & 9 . A & 10 . B & 11 . C & 12 . D & 13 . C & 14 . B \\ 15 . C\end{array}$

## Solutions:

S 1.

Figure 1 --- 1 Box
Figure 2 --- $2+1$ Boxes
Figure 3 --- $3+2+1$ Boxes
That means -
Figure 10 --- $10+9+8+7+6+5+4+3+2+1=55$ Boxes
So, Option $C$ is the correct answer.

## S 2.

Mirror-image of Figure $X$ will have all the numbers in the same position, but facing in opposite direction. The hour hand will remain near 12 O'clock, but the minute hand will be on the opposite side - instead of between 3 and 6 , it would be between 6 and 9 .
So, Option B is the right answer.


## S 3.

Figure in Option A cannot be embedded in the given Figure X .


Figure (X)

## S 4.

Cross the cubes in the given figure one by one. Now count the number of crossed out shapes.


We have 8 cubes. So, Option A is the right answer.

## S 5.

BOARD $\rightarrow$ \$3\%\#6
ROPE $\rightarrow$ \#35@
Then, $\mathrm{P} \rightarrow 5, \mathrm{E} \rightarrow$ @, $\mathrm{A} \rightarrow$ \%, R $\rightarrow$ \# ---------- 5@\%
So, Option D is the right answer.

## S 6.

If we interchange $P$ and $Q$, then we get the following Picture -


In this new Picture, $T$ is in the East of $P$. So, Option A is the right answer.

## S 7.

Total Days in July $=31$ Days
No. of Sundays $=4(6,13,20,27)$
Days that are multiples of $5=6(5,10,15,20,25,30)$
But July 20 is same in both. So, total days when Garima won't go to office $=4+5=9$
Days
Days when Garima will go to office $=31$ Days -9 Days $=22$ Days
So, Option C is the right answer.

## S 8.

## We know that -

Vanilla Cake > Coconut Cake
Mango Cake > Chocolate Cake > Vanilla Cake
That means -

Mango Cake > Chocolate Cake > Vanilla Cake > Coconut Cake
So, Option D is the right answer.

## S 9.

The clock is showing the current time as $4: 45$.
If the clock is 45 minutes slow, that means the correct current time is $4: 45+0: 45$
Adding the minutes $=45+45=90$.
Now, if the minutes are 60 or more, subtract 60 from the minutes and add 1 to hours $=90$ $-60=30$.
Adding 1 to the hour $=4+1=5$.
So, the correct current time is $5: 30$.
That means after half an hour it will be - 6:00 O'clock.
So, Option A is the right answer.

## S 10.

Keep in mind the distances jumped by both cat and dog.
So in $1^{\text {st }}$ jump, cat will reach 11 m , and dog will reach 10 m . In the $2^{\text {nd }}$ jump, cat will reach 14 m , and dog will reach 15 m . That means dog will overtake cat in the $2^{\text {nd }}$ jump. So, Option B is the right answer,

## S 11.

Let's observe the given picture, and try to mark Mohit's position on it.
Mohit was facing the Library. Then, he made a 3/4 turn anticlockwise.

```
3/4 turn = 3/4 \times 3600}=3\times90=270'
```



So, Mohit is now facing the Hospital. Hence, the right answer is Option C.

S 12.

When the paper is unfolded along the dotted line, then we would have two exactly equal parts which are mirror images of each other. The dotted line will be the line of symmetry.


Now, let's see which of the options show us the complete image.


Option D is the correct answer.

## S 13.

Observe the given sequence carefully.


There is an 4 squares and an inner circle. The green scolour is moving clockwise in the squares. It is moving clockwise in the inner circle too, but in circular part opposite the green square.

That means the next figure in the sequence will have green colour in the top-left square. The opposite circular space in the bottom-right square will also be green.


So, Option C is the correct answer.

## S 14.

The upper half of the circle has 2-digit numbers, all starting with 2. They are in normal counting sequence $-24,25,26,27$.
Now, let's observe the numbers in lower half of the circle. All are 3-digit numbers, starting with 3 . Let's find out the difference between these numbers.
$325-318=7$
$332-325=7$
That means there would be same rule between 332 and ?
? $-332=7$
Or, ? $=7+332$
Or, ? = 339
So, the right answer is Option B.

We have to find the mirror-image of Figure $X$.

## Figure ( $X$ ) M <br> BMOE N

The mirror-image of Figure X will have the same letters, but in reverse sequence - E OMB. The letters will also be facing opposite direction. The letters will remain purple in the top-half and blue in the bottom-half.

Figure ( $X$ )<br>BMOE З0M8<br>So, the correct answer is Option C.

