![CREST Olympiads logo]

# REASONING WORKBOOK

**8**

## For the preparation of National & International Olympiads



- Chapter-wise practice exercises
- Previous year paper

## CREST Reasoning Olympiad (CRO)

# Reasoning Olympiad

## Exams Preparation Book

CRO | UCTO | iRAO

Grade 8

CREST
Olympiads

#CRESTInnovator

www.crestolympiads.com

**Disclaimer:** The information in the Workbook is to give you the path to success but it does not guarantee 100% success as the strategy is completely dependent on its execution. And it is based on previous year papers of CRO exam.

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# Preface

We are pleased to launch a thoroughly revised edition of this workbook. We welcome feedback from students, teachers, educators and parents. For improvements in the next edition, please send your suggestions at info@crestolympiads.com. Our team will make an effort to work on those suggestions. The status of the improvements can be checked at https://www.crestolympiads.com/corrections-class8-026

CREST Olympiads is one of the largest Olympiad Exams with students from more than 60 countries. The objective of these exams is to build a competitive spirit while evaluating students on conceptual understanding of the concepts.

We strive to provide a superior learning experience, and this workbook is designed to complement the school studies and prepare the students for various competitive exams including the CREST Olympiads. This workbook provides a crisp summary of the topics followed by the practice questions. These questions encourage the students to think analytically, to be creative and to come up with solutions of their own. There is a previous year's paper given at the end of this workbook for the students to attempt after completing the syllabus. This paper should be attempted in 1 hour to get an assessment of the student's preparation for the final exam.

*Publishers*

# Series Completion and Inserting the Missing Character

Series completion and inserting missing character is a topic under logical reasoning which deals with questions which judge our guessing capabilities and techniques. The better we understand the relation or logic between the given entities, the easier and quicker it becomes for us to solve such questions.

The student needs to predict the next term in the given series or the missing term in the series. This series can be of numbers, alphabets, letters or images.

**Example 1:** Select the figure which will come next in the following series:
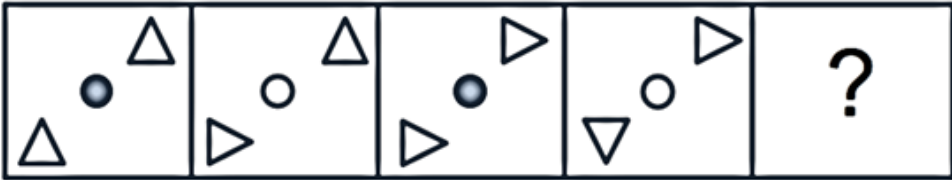




**Solution 1:** a

The circle is filled and hollow in every alternate step, so the upcoming step will be a filled circle.
The triangle at the left bottom gets rotated by 90 degrees in the clockwise direction in the first step.
In the second step, the triangle at the right top gets rotated by 90 degrees in the clockwise direction and the lower triangle remains constant.
This rotation continues in every alternate step.
Hence, option (a) is the next image in the series.

**Example 2:** A series is given below, with one term missing in it. Choose the correct alternative from the given ones that will complete the series:
TDE, RGG, PJI, **?** , LPM

    a.  MNK                     b.  MKN
    c.  NMK                     d.  NKM

**Solution 2:** c

The logic followed here is as follows:

$$T \xrightarrow{-2} R \xrightarrow{-2} P \xrightarrow{-2} N \xrightarrow{-2} L$$

$$D \xrightarrow{+3} G \xrightarrow{+3} J \xrightarrow{+3} M \xrightarrow{+3} P$$

$$E \xrightarrow{+2} G \xrightarrow{+2} I \xrightarrow{+2} K \xrightarrow{+2} M$$

Therefore, "NMK" is the missing term.

**Example 3:** Which number would replace question mark in the series?
7, 12, 19, ?, 39

    a.  29                                   b.  28
    c.  30                                   d.  32

**Solution 3:** b

The given sequence follows the pattern: + 5, +7, +9 ... i.e., 7 + 5 = 12, 12 + 7=19
Missing number = 19 + 9 = 28.
Hence, the answer is (b).

**Example 4:** In following letter series, some of the letters are missing which are given in that order as one of the alternatives below it. Choose the correct alternative.
b cab bc ab bca _____ bca

    a.  bbca                               b.  acba
    c.  cabc                               d.  cacc

**Solution 4:** a

We can observe that pattern bcab is repeated.
Hence, option (a) is correct.

# Practice Questions

    **1.**  Select the figure which will come next in the following series:

c.
```
N        ⌐
⌐        J
```
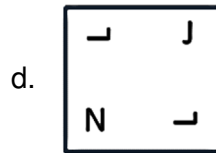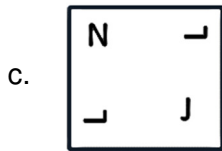
d.
```
⌐        J
N        ⌐
```

2.  Select the letter that can replace the question mark '?' in the following series:
    HP, KO, IM, LJ, ?

    a.  KE
    c.  JF

    b.  KF
    d.  JE

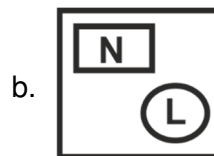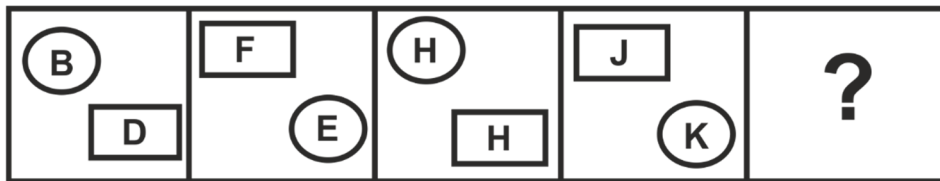3.  Select the number which can be placed at the sign of the question mark (?) from the given alternatives.

    ```
          18 | 60
       24 |      | 54
       30 |      | 48
          ?  | 42
    ```

    a.  27
    c.  30
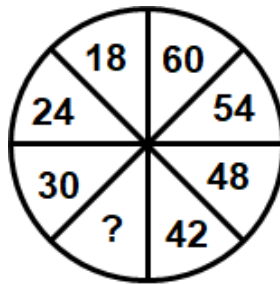
    b.  32
    d.  36

4.  Select the number that can replace the question mark '?' in the following series:
    77, 75, 78, 74, 79, 73, ?

    a.  84
    c.  81

    b.  80
    d.  85

5.  Select the figure which will come next in the following series:

    ```
    | B       | F       | H       | J       | ? |
    |    D    |    E    |    H    |    K    |   |
    ```

    a.
    ```
    L
    N
    ```

    b.
    ```
    N
      L
    ```

    c.
    ```
    N
      L
    ```

    d.
    ```
      N
    M
    ```

**6.** Select the element that can replace the question mark '?' in the following series:
J12, M15, P18, S21, ?

a. V22
b. V24
c. X22
d. X24

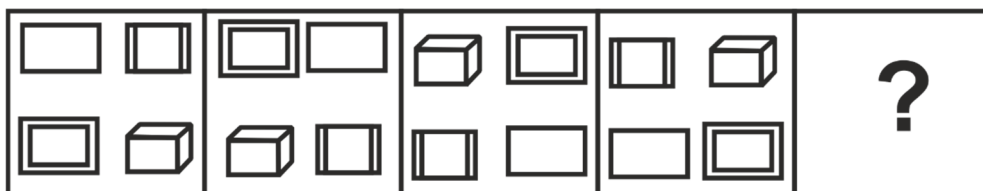**7.** Select the figure which will come next in the following series:



a.
b.
c.
d.

**8.** Select the letter that can replace the question mark '?' in the following series:
FUQ, ? , LQU, OOW, RMY

a. ISS
b. ISR
c. ITS
d. IRT

**9.** Select the number that can replace the question mark '?' in the following series:
25, 26, 54, 165, 664, ?

a. 3320
b. 3325
c. 6325
d. 6640

**10.** Select the figure which will come next in the following series:



a.
b.
c.
d.

**11.** Find the missing term in the matrix given below:

| 2 | 53 | 7 |
|---|----|---|
| 5 | 34 | 3 |
| 4 | ?  | 6 |

a. 52                          b. 50
c. 54                          d. 56

**12.** Select the number that can replace the question mark '?' in the following series:
34, 17, 68, 34, 136, 68, ?

a. 270                         b. 274
c. 276                         d. 272

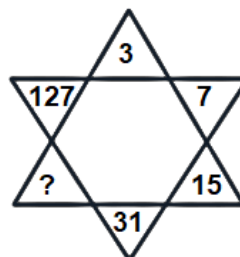**13.** Select the figure which will come next in the following series:



a.                        b.            

c.                        d.            

**14.** Select the letter that can replace the question mark '?' in the following series:
FC, JG, ? , OL, PM

a. NJ                          b. NL
c. MJ                          d. ML

**15.** Select the number which can be placed at the sign of the question mark (?) from the given alternatives:



a. 63                          b. 64
c. 60                          d. 65

**16.** Find the missing term in the matrix given below:

| 18 | 25 | 19 |
|----|----|----|
| 5  | 9  | ?  |
| 5  | 8  | 7  |

   a. 4

   c. 2

   b. 3

   d. 5

**17.** In following letter series, some of the letters are missing which are given in that order as one of the alternatives below it. Choose the correct alternative.
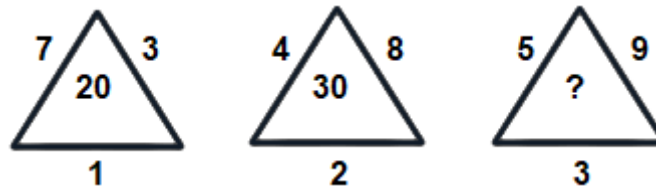
_____aba _____ ba _____ ab

   a. ab bb a

   c. ba ab b

   b. ab ba b

   d. bb ab a

**18.** Select the letter that can replace the question mark '?' in the following series:
BDEG, DGGJ, **?** , HMKP, JPMS

   a. FJIM

   c. EFJM

   b. FIMJ

   d. EJMI

**19.** Select the number which can be placed at the sign of the question mark (?) from the given alternatives:



   a. 44

   c. 33

   b. 42

   d. 32

**20.** Select the figure which will come next in the following series:



   a.

   b.

   c.

   d.