NON VERBAL REASONING

1. Completion of Series.

This is the most important section of Non–Verbal Reasoning. In these questions a series of figures is given as problem figures and the candidates are asked to select one of the figure from the set of answer figures which will continue the given sequence.

In order to solve these questions, students are supposed to have a clear vision of different movement of a block (figure) around a fixed point is known as rotation. The simplest example of rotation is the movement of hour and minute hands of the clock. When a body rotates in the direction of the hands of the clock, the movement is known as clockwise movement and when a body rotates in the opposite direction of the hands of the clock, the movement is known as anti clockwise movement.

1. Select a figure which will continue the series given in the first picture

A. 1  B. 2  C. 3  D. 4  E. 5

Answer : B
2. Analogy

Analogy literally means similarity i.e., having similar features or characteristics. This section of non-verbal reasoning has been designed to test the ability of a candidate to understand the relationship between two figures, which follow a certain rule, and apply the same rule to select the figure which establishes the same relationship with the figures asked in the questions.

1. Select a suitable figure from the Answer Figures that would replace the question mark (?).

Problem Figures:

Answer Figures:

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

(1) (2) (3) (4) (5)

A. 1  B. 2  C. 3  D. 4  E. 5

Answer: Option A
Explanation: The figure gets vertically inverted.
3. Classification:

Questions on classification are designed to test the candidates ability to classify or segregate a group of objects from the given objects, on the basis of their common properties. i.e., it is a process of marking out a homogeneous group from a heterogeneous larger group.

1. Choose the figure which is different from the rest.

A. 1       B. 2       C. 3       D. 4       E. 5

Answer: Option D

Explanation: All other figures are divided into equal parts.
4. Counting of Figures

Items of non verbal reasoning of these types involve counting of geometrical figures in a given figure, which is a mixture of two or more types of complex figures. These are designed to test the analytical disposition of the Candidates. Few examples have been given below to illustrate the types of these questions.

1. 
(a) 5  (b) 6  (c) 8  (d) 10

Ans.(d)
Sol. Number of triangles = 10
2.

(a) 16  (b) 13  (c) 9  (d) 7

Ans. (a) Sol. Number of triangles = 16

5. Completion of figures

In these types of questions, a segment in a figure, generally a quarter, is left blank. This incomplete figure is followed by few choices showing the missing segment which, if fitted in the incomplete figure, completes the figure. Candidates are expected to be vigilant and be extra careful while selection the correct option as sometimes, the alternatives have very minute differences among them.
1. Identify the figure that completes the pattern.

A. 1  B. 2  C. 3  D. 4

Answer: Option D

6. Embedded Figure

In this chapter, a figure is given as an original figure followed by four answer figures. One of the answer figures is embedded or hidden in the original figure. Candidates are required to select the alternative that carries the correct figure which clearly shows the embedded portion in the original figures.

1. Find out the alternative figure which contains figure (X) as its part.

A. 1  B. 2  C. 3  D. 4

Answer: Option C

Explanation:
7. Paper cutting

This chapter deals with the questions related with paper cutting. In the questions based on paper cutting, few figures are given showing the manner in which a piece of paper is folded and then cut from a particular section. A cut may be of varying designs. The design on the paper, after the cut, which appears when the paper is unfolded is shown by four or five answer figures. One of the answer figures correctly represents the design that the paper have after it is unfolded. This option is the correct answer.

1. Choose a figure which would most closely resemble the unfolded form of Figure C).

   ![Figure Options]

   i. 2   ii. 1   iii. 3   iv. None of these

ANSWER: ii. 1

In this chapter we shall deal with the problems related with formation of triangles and squares by joining three figures out of a group of figures of different designs.

1. Locate the figure from the given figures which can be formed by pieces given in (X).

![Figure](image)

A.1  B.2  C.3  D.4

Answer: Option C

9. Mirror images

Reflection of an object into the mirror is called its mirror image. It is obtained by inverting an object laterally i.e., towards the sides.
1. Choose the alternative which is closely resembles the mirror image of the given combination.

```
EFFECTIVE
(1) EVITCEFFE
(2) EVITCEFFE
(3) EVITCEFFE
(4) EVITCEFFE
```

A.1   B.2   C.3   D.4

Answer: Option A

**Non Verbal Reasoning – Sample Questions**

1. Select a figure from amongst the Answer Figures which will continue the same series as established by the Problem Figures.

**Problem Figures:**

```
(A)   (B)   (C)   (D)   (E)
```

```
(1)   (2)   (3)   (4)   (5)
```

**Answer Figures:**

```
A.1   B.2   C.3   D.4   E.5
```
2. Select a figure from amongst the Answer Figures which will continue the same series as established by the five Problem Figures:

Problem Figures:
(A) (B) (C) (D) (E)

Answer Figures:
(1) (2) (3) (4) (5)

A.1 B.2 C.3 D.4 E.5

3. Choose the figure which is different from the rest.

A.1 B.2 C.3 D.4 E.5

4. Choose the figure which is different from the rest.

A.1 B.2 C.3 D.4 E.5
5. Choose the figure which is different from the rest.

(1) (2) (3) (4) (5)

A.1 B.2 C.3 D.4 E.5

6. Choose the figure which is different from the rest.

(1) (2) (3) (4) (5)

A.1 B.2 C.3 D.4 E.5

7. Choose the figure which is different from the rest.

(1) (2) (3) (4) (5)

A.1 B.2 C.3 D.4 E.5
8. Choose the figure which is different from the rest.

![Image of figures]

(1) (2) (3) (4) (5)

A.1 B.2 C.3 D.4 E.5

9. Choose the alternative which is closely resembles the mirror image of the given combination.

![Image of combinations]

(1) (2) (3) (4)

A.1 B.2 C.3 D.4 E.5

10. Choose the alternative which is closely resembles the mirror image of the given combination.

![Image of combinations]

(1) (2) (3) (4)

A.1 B.2 C.3 D.4

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11. Select a suitable figure from the four alternatives that would complete the figure matrix.

A. 1    B. 2    C. 3    D. 4
12. Select a suitable figure from the four alternatives that would complete the figure matrix.

A.1       B.2       C.3       D.4

13. Group the given figures into three classes using each figure only once.

A. 1,4 ; 2,3 ; 5,6   B. 1,5;2,6;4,3   C. 1,6 ; 2,3 ; 4,5   D. 1,2 ; 3,6 ; 4,5
14. Find the number of triangles in the given figure.

![Figure 1](image1.png)

A. 8     B. 10     C. 12     D. 14

15. Find the number of triangles in the given figure.

![Figure 2](image2.png)

A. 22     B. 24     C. 26     D. 28
16. Find the number of triangles in the given figure.

A. 12  B. 18  C. 22  D. 26

17. Find the number of triangles in the given figure.

A. 18  B. 20  C. 24  D. 27

Find the number of triangles in the given figure.
18.  

\[ \text{\begin{figure}[h] 
\centering  
\includegraphics[width=0.5\textwidth]{figure1.png}  
\end{figure}} \]

A. 16   B. 22   C. 28   D. 32

19. Choose the alternative which is closely resembles the water-image of the given combination.

NUCLEAR
(1) AbbCUN  
(2) NUCLEAR
(3) NUCREAB  
(4) NUCREAB

A. 1   B. 2   C. 3   D. 4

20. Choose the alternative which is closely resembles the water-image of the given combination.

bridge
(1) pIq|de  
(2) pl|qde  
(3) pl|qde  
(4) pl|qde

A. 1   B. 2   C. 3   D. 4
21. Choose the alternative which is closely resembles the water-image of the given combination.

GR98AP76ES
(1) GB98A619ES  (2) GR88A619ES
(3) GB98A610ES  (4) GB98A619ES

A.1       B.2       C.3       D.4

22. Choose the alternative which is closely resembles the water-image of the given combination.

A1M3b
(1) A1M3P  (2) A1M3P
(3) A1M3P  (4) A1M3P

A.1       B.2       C.3       D.4
1. **Answer:** Option C  
   **Explanation:**  
   In each step, element at the upper-right position gets enlarged, inverts vertically and reaches the lower-left corner; the existing element at the lower-left position, is lost and a new small element appears at the upper-right position.

2. **Answer:** Option D  
   **Explanation:**  
   In one step, the existing element enlarges and a new element appears inside this element. In the next step, the outer element is lost.

3. **Answer:** Option A  
   **Explanation:**  
   The figure gets vertically inverted
3. **Answer:** Option C  
**Explanation:**  
In all other figures, the two line segments are parallel to each other.

4. **Answer:** Option A  
**Explanation:**  
In all other figures, the lower-right quarter portion is shaded.

5. **Answer:** Option C  
**Explanation:**  
Only in fig. (3), the line segment is not a diameter of the circle.

6. **Answer:** Option C  
**Explanation:**  
Fig. (3) is formed by a combination of A-shaped elements while all other figures are formed by a combination of V-shaped elements.

7. **Answer:** Option E  
**Explanation:**  
All others are punctuation marks.
8. **Answer:** Option A  
**Explanation:**  
All other are vowels.

9. **Answer:** Option B

10. Answer: Option D

11. **Answer:** Option D  
**Explanation:**  
The third figure in each row comprises of parts which are not common to the first two figures.

12. **Answer:** Option C  
**Explanation:**  
The second figure is a part of the first figure (but is not exactly the same as the first figure).
13. **Answer:** Option A  
**Explanation:**  
(1, 4), (2, 3) and (5, 6) are three different pairs of identical figures

14. **Answer:** Option D  
**Explanation:**  
The figure may be labelled as shown.

![Diagram](image_url)  
The simplest triangles are AHG, AIG, AIB, JFE, CJE and CED i.e. 6 in number.  
The triangles composed of two components each are ABG, CFE, ACJ and EGI i.e. 4 in number.  
The triangles composed of three components each are ACE, AGE and CFD i.e. 3 in number.  
There is only one triangle i.e. AHE composed of four components.  
Therefore, There are $6 + 4 + 3 + 1 = 14$ triangles in the given figure.
15. **Answer:** Option D  
**Explanation:**

The figure may be labelled as shown.

![Diagram](image)

The simplest triangles are AGH, GFO, LFO, DJK, EKP, PEL and IMN i.e. 7 in number.
The triangles having two components each are GFL, KEL, AMO, NDP, BHN, CMJ, NEJ and HFM i.e. 8 in number.
The triangles having three components each are IOE, IFP, BIF and CEI i.e. 4 in number.
The triangles having four components each are ANE and DMF i.e. 2 in number.
The triangles having five components each are FCK, BGE and ADL i.e. 3 in number.
The triangles having six components each are BPF, COE, DHF and AJE i.e. 4 in number.
Total number of triangles in the figure = $7 + 8 + 4 + 2 + 3 + 4 = 28$. 
16. **Answer:** Option B  
**Explanation:**  
The figure may be labelled as shown.

![Diagram of a geometric figure](image)

The simplest triangles are AHB, GHI, BJC, GFE, GIE, IJE, CEJ and CDE i.e. 8 in number.
The triangles composed of two components each are HEG, BEC, HBE, JGE and ICE i.e. 5 in number.
The triangles composed of three components each are FHE, GCE and BED i.e. 3 in number.
There is only one triangle i.e. AGC composed of four components.
There is only one triangle i.e. AFD composed of nine components.
Thus, there are $8 + 5 + 3 + 1 + 1 = 18$ triangles in the given figure.
17. **Answer:** Option C  
**Explanation:**  
The figure may be labelled as shown.

The simplest triangles are IJO, BCJ, CDK, KQL, MLQ, GFM, GHN and NIO i.e. 8 in number.
The triangles composed of two components each are ABO, AHO, NIJ, IGP, ICP, DEQ, FEQ, KLM, LCP and LGP i.e. 10 in number.
The triangles composed of four components each are HAB, DEF, LGI, GIC, ICL and GLC i.e. 6 in number.
Total number of triangles in the figure = 8 + 10 + 6 = 24.

18. **Answer:** Option C  
**Explanation:**  
The figure may be labelled as shown.
The simplest triangles are AFJ, FJK, FKB, BKG, JKG, JGC, HJC, HIJ, DIH, DEI, EIJ and AEJ i.e. 12 in number.
The triangles composed of two components each are JFB, FBG, BJG, JFG, DEJ, EJH, DJH and DEH i.e. 8 in number.
The triangles composed of three components each are AJB, JBC, DJC and ADJ i.e. 4 in number.
The triangles composed of six components each are DAB, ABC, BCD and ADC i.e. 4 in number.
Thus, there are $12 + 8 + 4 + 4 = 28$ triangles in the figure.

19. **Answer:** Option D

20. **Answer:** Option B

21. **Answer:** Option C

22. **Answer:** Option C