VISUAL REASONING – I

SESSION – 10

ABSTRACT REASONING

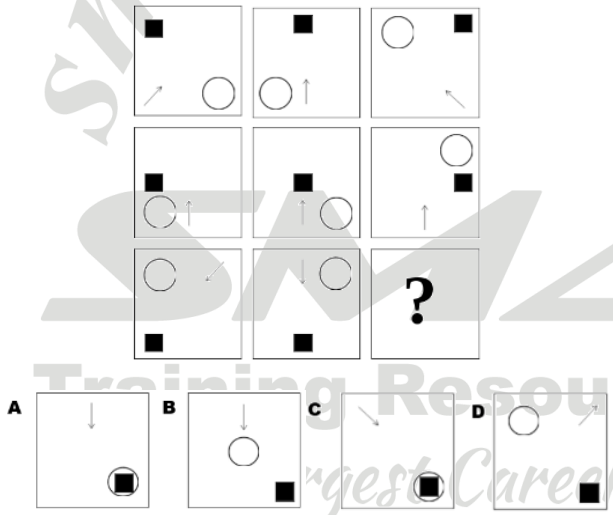
The abstract reasoning test is also called the conceptual reasoning test (also known as inductive reasoning or diagrammatic reasoning tests). It measures your lateral thinking skills, which are your ability to quickly identify patterns, logical rules and trends in new data, integrate this information, and apply it to solve problems. You also need to see the relationships between shapes and figures, identify rules and similarities, and quickly apply these to identify the answer. It measures what most people would refer to as 'street smarts' and the ability to 'think on your feet'.

Generally, abstract reasoning tests measure non-verbal abilities. Abstract reasoning tests are almost always a part of any job assessment or intelligence testing setup.

While there are many permutations of question types and formats, there are some general concepts which are common, and it can be useful to familiarise yourself with these.

Common question types in abstract reasoning tests

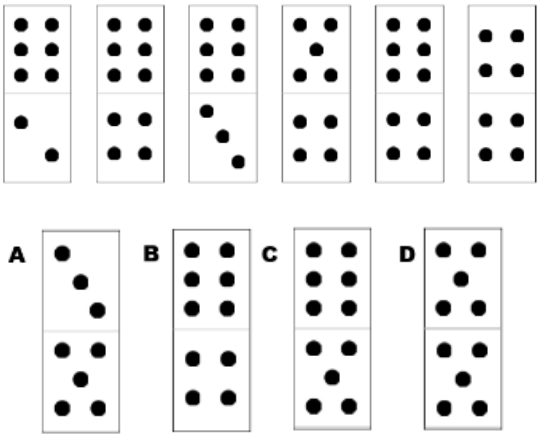
Question 1: Identify the missing square



This type of question requires you to look at the patterns in the squares and understand their relationship to one another, so as to identify the missing square.

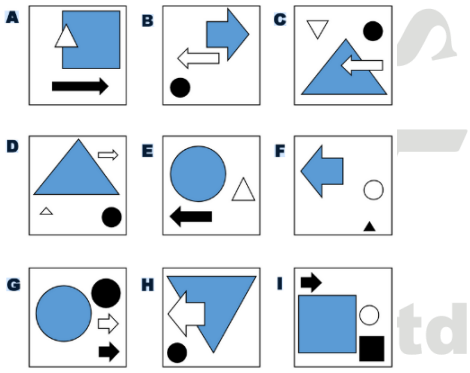
There are three rules to spot in this question. Firstly, there is a relative positional rule: the position of the black square corresponds to the position its square holds within the diagram. Secondly, there is a movement rule, in that the circle moves around the boxes in a clockwise position. Finally, the arrows in the first and third columns are reflections of one another. The correct answer is therefore C.

Question 2: Complete the sequence



This requires you to identify and understand the pattern behind the order in which the dominoes are presented. There are two patterns here. The first, third and fifth (and therefore seventh) dominoes have the rule that the number of the top is six and the number on the bottom is increasing by one each time. The second pattern includes the second, fourth and sixth dominoes, and has the rule that the number on the bottom is four and the number at the top is decreasing by one each time. The correct answer is therefore C.

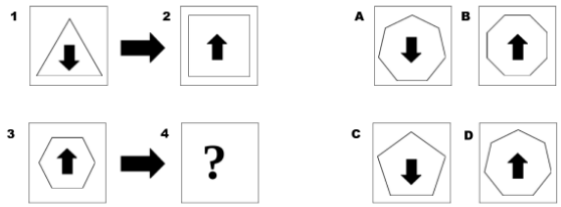
Question 3: Identify the odd one out



This type of question requires you to look at some data, identify the pattern or rules, and then spot which square does not meet those rules. Watch out for relative position, number of items, relationship between items, colour, shape, and orientation of shapes: there are many different variations on these rules and there may be some extraneous data in there that complicates the rules.

For example, in this question some of the squares have three items in and some have four – you need to work out whether or not that is important. In this particular case, there are two rules. The first is that the largest shape must be grey, and the second is that the bottom shape must be black. The odd one out is therefore C, as the bottom shape is stripey and not black.

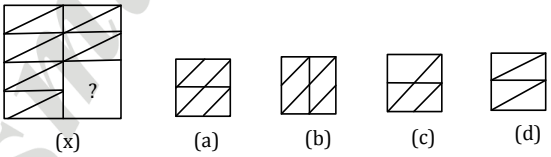
Question 4: 1 is to 2, as 3 is to 4

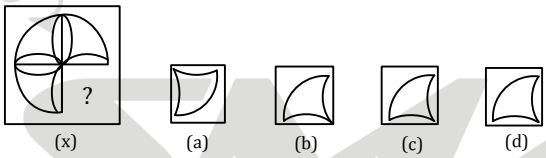


This type of question is all about relationships between data: being able to recognise what links two boxes together and then apply this rule to a new shape to solve the problem.

There are two rules here. First, the shape in box 2 has one more side that the shape in box 1. As the shape in box 3 has six sides, the correct shape for box 4 must have seven sides. The second rule is around the arrow and the rule is that for shapes with an even number of sides, the arrow points up. For shapes with an odd number of sides the arrow points down. The correct answer is therefore A.

Directions for Q1 to Q15: In each of the following questions, complete the missing portion of the given pattern by selecting from the given alternatives (a), (b), (c) and (d).

1. 

2. 

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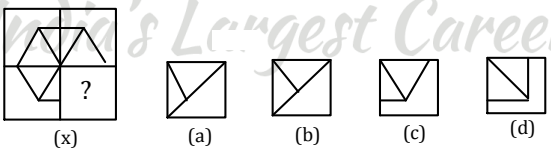
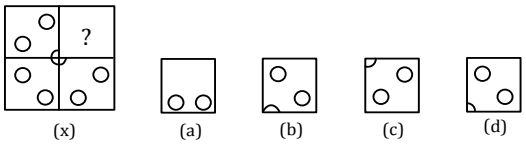
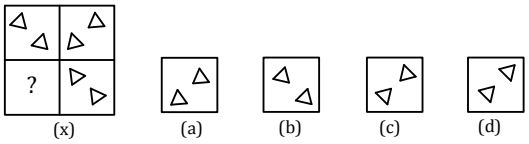
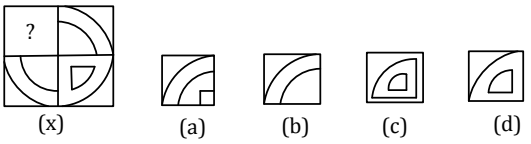
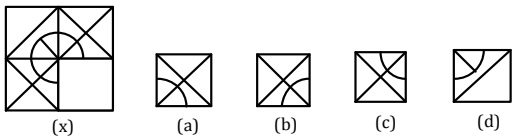
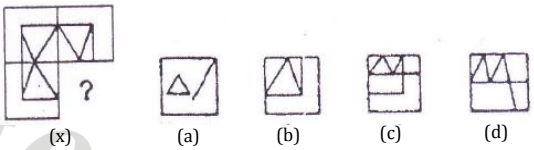
4. 

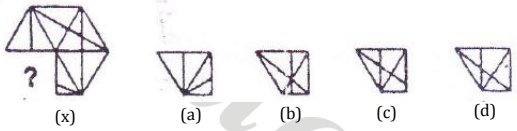
5. 

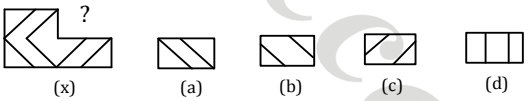
6. 

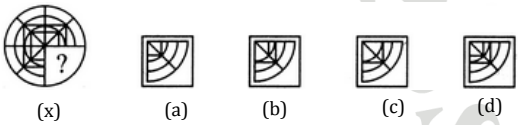
7. 

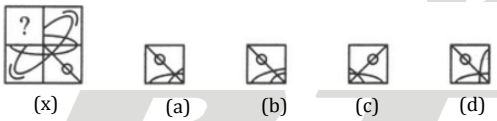
8. 

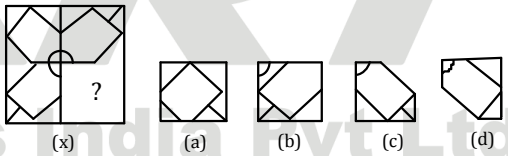
9. 

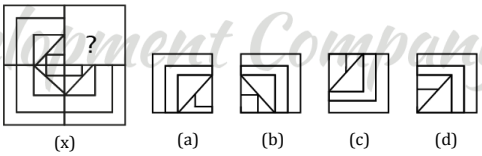
10. 

11. 

12. 

13. 

14. 

15. 

INPUT-TYPE DIAGRAMMATIC REASONING

Diagrammatic reasoning questions (also known as logical reasoning or inductive reasoning questions) are designed to assess your logical reasoning ability.

These tests involve rules that must be applied to a sequence of either shapes or letters. They may involve symbols that change either figures or objects. For example, a symbol may signify that triangles must be replaced with squares. Alternatively, they may involve shapes that apply rules to a sequence of letters. For

example, one shape will reverse the letters and another may signify that a letter must be dropped or added. These tests require you to visualize quickly how the sequence will change after a series of transformations.

Directions for Q16 and Q17: According to a certain code language, words in column 1 are written in capital letters and in column 2 their codes are given. The codes in column 2 are jumbled up. Decode the language and choose the correct code for the word given in each of the questions that follow.

Column 1	Column 2
CHAIN	acmvq
FRAIL	pnqal
TEAM	wjqd
DESTINY	xwtjazc
TOIL	ajgl
VARY	qbzn
NAUGHTY	iqcfvzj

16. DAILY
(a) aqzla (b) alzqi (c) izqat (d) aqtzc

17. TEAR
(a) nqjw (b) qwmc
(c) jwqc (d) fjcw

Directions for Q18 and Q19: Answer the questions based on the code given below.

AB Delete the last character

BC Replace the third character with the next in the alphabet

CD Insert the letter P between the third and fourth characters

DE Exchange the first and last characters

EF Replace the second character with the previous letter in the alphabet

FG Replace the fifth character with the next in the alphabet

GH Reverse the whole sequence of letters

HI Delete the third character

18. MOZLUCK → AB + FG + CD →
(a) MOZPLVK (b) MOZLVC
(c) MOZPLVCK (d) MOZPLVC

19. CNPTTBM → HI + EF + DE →
(a) MMTTBC (b) MMTTBM
(c) MNTTBC (d) CMTTBC

Directions for Q20 and Q21: Answer the questions based on the information given below.

¿ Remove all shading

@ Switch the top and middle shapes

Σ Add a vertical line to the shape at the bottom of the series

♪ Switch the top and bottom shapes

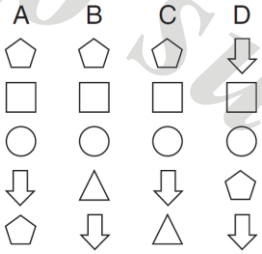
Ω Replace the top shape with ▲

✞ Shade the second shape

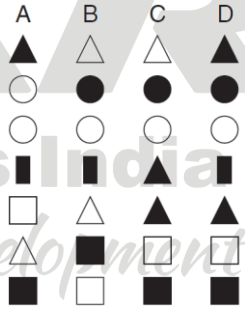
£ Replace the middle shape with ■

® Switch the fourth and last shapes

20.  → ¿ + ♪ + ® →



21.  → ✞ + Ω + £ →



Directions for Q22 and Q23: Answer the questions based on the information given below.

□ Reverse the whole sequence

△ Drop all Ts

○ Add TE to the end of the sequence

⇩ Exchange the first two and last two characters

☆ Add an A between the fourth and fifth characters

Swap the first and second characters

Drop the first A

Replace Es with Is

Drop the second and fourth characters

22. EYLLOHA → □ + □ △ + △ ○ →

(a) HOLLY (b) HOLYE

(c) HALLY (d) D HAOLLYE

23. STNEMIN → ○ + ⇩ + ☆ →

(a) TENEMINST (b) STNEMINTE

(c) TENEAIMNST (d) TENEAMINST

Directions for Q24 and Q25: Answer the questions based on the information given below.

Cancel all shading

Shade the second and last shapes

Exchange the second and fourth shapes

Reverse the sequence of shapes

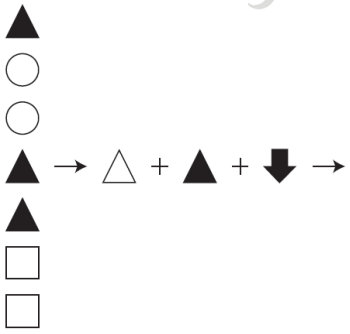
Change all circles to shaded squares

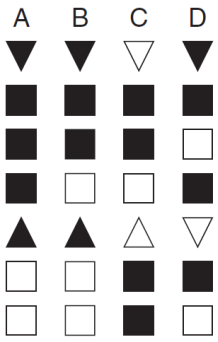
Replace all shaded shapes with unshaded triangles (with the apex at the top)

Replace the first shape with a shaded triangle with its apex pointing downwards

Change the middle shape to an unshaded circle

24.





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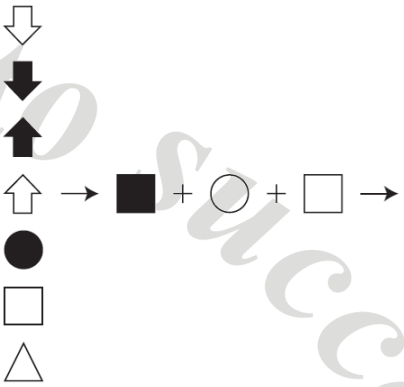
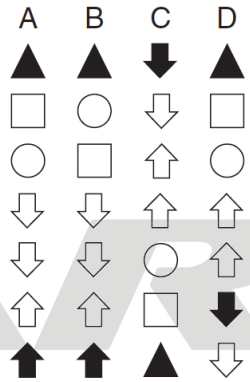




VISUAL REASONING – II

SESSION – 11

SPATIAL REASONING

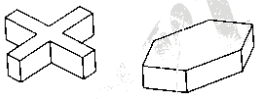
Spatial reasoning is a category of reasoning skills that refers to the capacity to think about objects in three dimensions and to draw conclusions about those objects from limited information. Someone with good spatial abilities might also be good at thinking about how an object will look when rotated. It's sometimes called a 'spatial awareness test'. Regardless of the terminology, the test assesses the same skill: your ability to manipulate two and three dimensional shapes and your capacity to spot patterns or relationships between them. Typical question types involve mirror images, three-dimensional cubes and matching similar types of shapes.

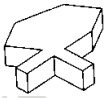
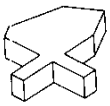
Example

Which image can be made from the three shapes shown?

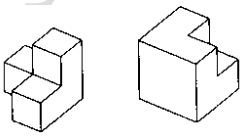
The answer is (C).

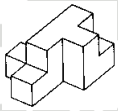
Directions for Q1 to Q15: Identify the new shape that could be constructed if the two example shapes were combined.

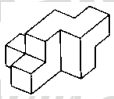
1. 

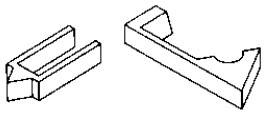
(a)  (b) 

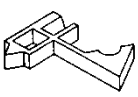
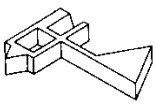
(c) 

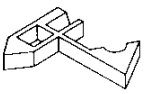
2. 

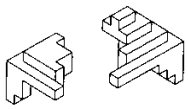
(a)  (b) 

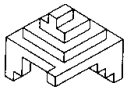
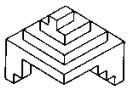
(c) 

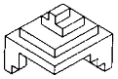
3. 

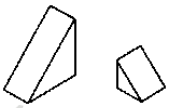
(a)  (b) 

(c) 

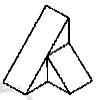
4. 

(a)  (b) 

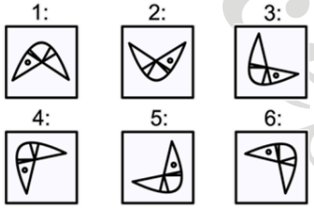
(c) 

5. 

(a)  (b) 

(c)  (d) 

6. Find the odd one out.

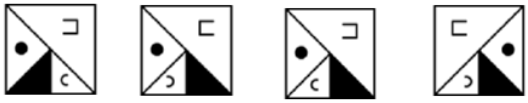


(a) 2 (b) 3 (c) 1 (d) 5

7. The figure below is a part of one of the figures given as option. Find that figure.

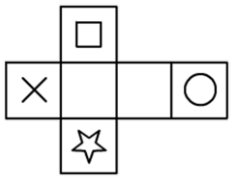
(a) (b) (c) (d)

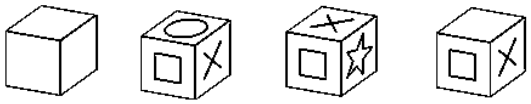
8. Find the mirror image of the figure given below.



(a) (b) (c) (d)

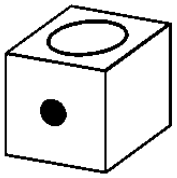
9. Find the object that the pattern below can fold into.

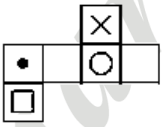


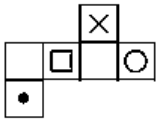


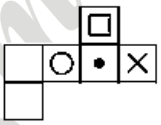
(a) (b) (c) (d)

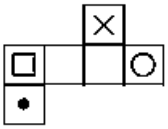
10. Find the pattern that can be folded into the object below.



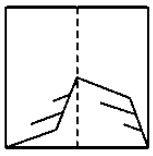
(a) 

(b) 

(c) 

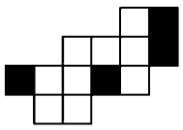
(c) 

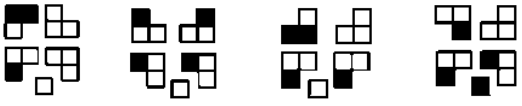
11. How would the pattern appear when the transparent sheet is folded along the dotted line?



(a) (b) (c) (d)

12. Which of the five groups below can be combined to make the figure given below?

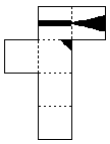


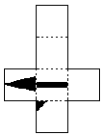


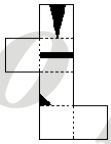
(a) (b) (c) (d)

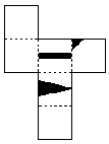
Directions for Q13 to Q15: Choose the correct figure of the three-dimensional question shape from the four suggested answer.

13. 

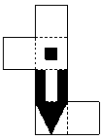
(a) 

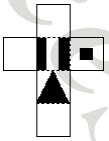
(b) 

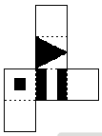
(c) 

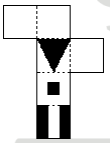
(d) 

14. 

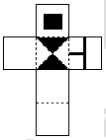
(a) 

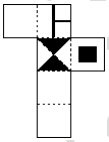
(b) 

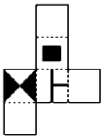
(c) 

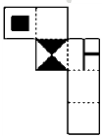
(d) 

15. 

(a) 

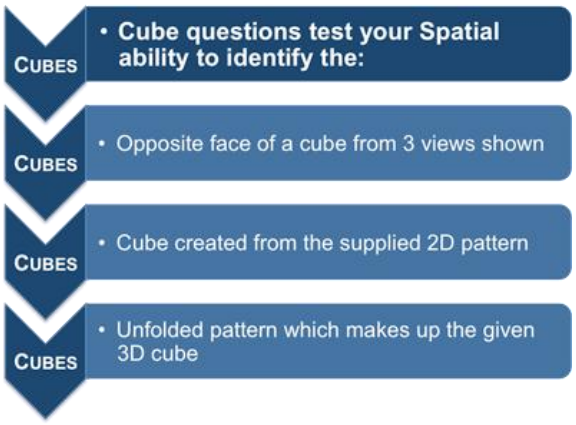
(b) 

(c) 

(d) 

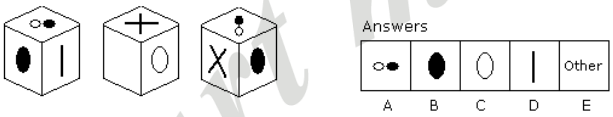
CUBES

These questions show you several (usually 3) views of a 3-dimensional cube with unique symbols or markings on each face and then asks you a question about it.



Example

Three views of the same cube are shown above. Which symbol is opposite the X?

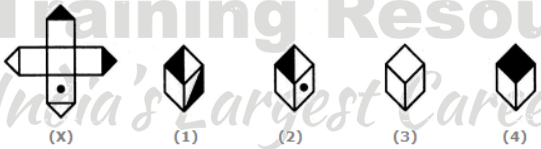


Answer: [D]

In the question above for example, you can simply use a process of elimination. If you can see a symbol on the same illustration as the 'X' then it cannot be opposite. The second and third cubes eliminate A, B and C. This leaves only D and 'other' as possibilities. D has edges shared with A and B which would be consistent with the third cube illustrated. Therefore D is correct.

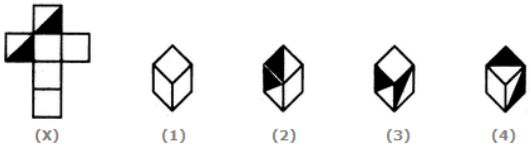
Directions for Q16 and Q17: The sheet of paper shown in the figure (X) given on the left hand side, in each problem, is folded to form a box. Choose from amongst the alternatives (1), (2), (3) and (4), the boxes that are similar to the box that will be formed.

16. Choose the box that is similar to the box formed from the given sheet of paper (X).



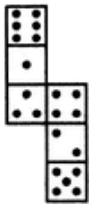
(a) 1 and 2 only (b) 2 and 4 only
(c) 2 and 3 only (d) 1 and 4 only

17. Choose the box that is similar to the box formed from the given sheet of paper (X).



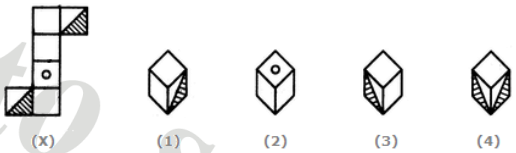
(a) 1 and 4 only (b) 3 and 4 only
(c) 1 and 2 only (d) 2 and 3 only

18. How many dots lie opposite to the face having three dots, when the given figure is folded to form a cube?



(a) 2 (b) 4 (c) 5 (d) 6

19. Choose the box that is similar to the box formed from the given sheet of paper (X).

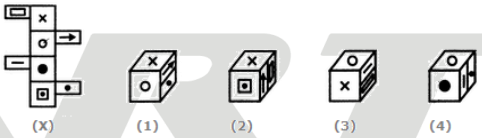


(a) 1 and 3 only (b) 1 and 4 only
(c) 2 and 4 only (d) 3 and 4 only

20. Choose the box that is similar to the box formed from the given sheet of paper (X).

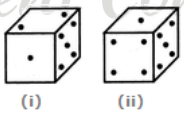
(a) 1, 2 and 3 only (b) 2 and 3 only
(c) 1, 3 and 4 only (d) 2, 3 and 4 only

21. Choose the box that is similar to the box formed from the given sheet of paper (X).



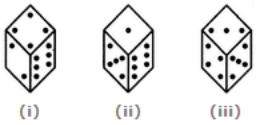
(a) 1 and 2 only (b) 1 and 3 only
(c) 3 and 4 only (d) 1, 2, 3 and 4

22. Observe the dots on a dice (one to six dots) in the following figures. How many dots are contained on the face opposite to that containing four dots?



(a) 2 (b) 3
(c) 6 (d) Cannot be determined

23. Three different positions of a dice are shown below. How many dots lie opposite 2 dots?



(a) 1 (b) 3 (c) 5 (d) 6