



Section 1 of 2

# Design Aptitude Test (DAT)- Part 1: Spatial Thinking - Instructions



It is mandatory that you fill out your Name, Application No., Contact No., Aadhaar No. and Email ID.

Part 1 has two sections, both the sections are compulsory.

Section 1, Mathematical Thinking has FOUR questions. Answer any TWO from these.

Section 2, Spatial Thinking has SIX questions. ALL are compulsory.  
Questions 1 and 2 carry TEN marks each. ALL other questions carry FIVE marks each.

Carefully follow the Instructions for writing each answer.

Make sure that you click the submit button before the form closes down automatically at the end of the time limit.

Full Name \*

Short answer text

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Application No. \*

Short answer text

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Contact No. (Mobile) \*

Short answer text

Aadhaar No. \*

Short answer text

Email ID \*

Short answer text

After section 1 Continue to next section



Section 2 of 2

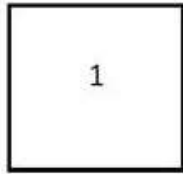
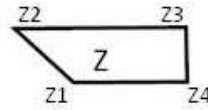
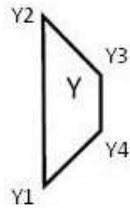
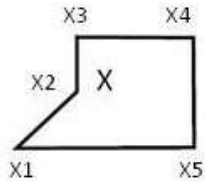
## Spatial Thinking\_ Mock Test



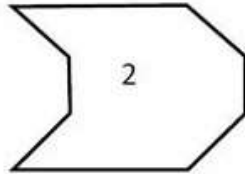
There are SIX questions in this part, ALL of which are to be attempted.

All the questions are worth 5 marks each.

Q1: Use all the shapes X, Y and Z only once, without changing their size and proportion, to compose the shape 1. Repeat the same for shape 2. Write, as shown in the example, about the final arrangements to explain whether your effort was successful or not, separately for shape 1 and shape 2. (Max. 150 words)



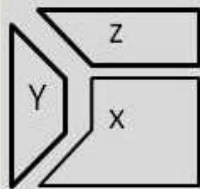
(a)



(b)

(c) Both 1 & 2

(d) Neither 1 nor 2



**Steps in construction**

Align edge X1-X2 of shape X with edge Y1-Y4 of shape Y such that  $X1-X2 = Y1-Y4$

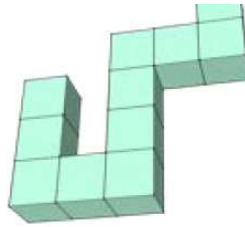
Align edge Z1-Z4 of shape Z with edge X3-X4 of shape X such that  $Z2-Z1-Z4 = Y2-(Y3)X3-X4$

Long answer text

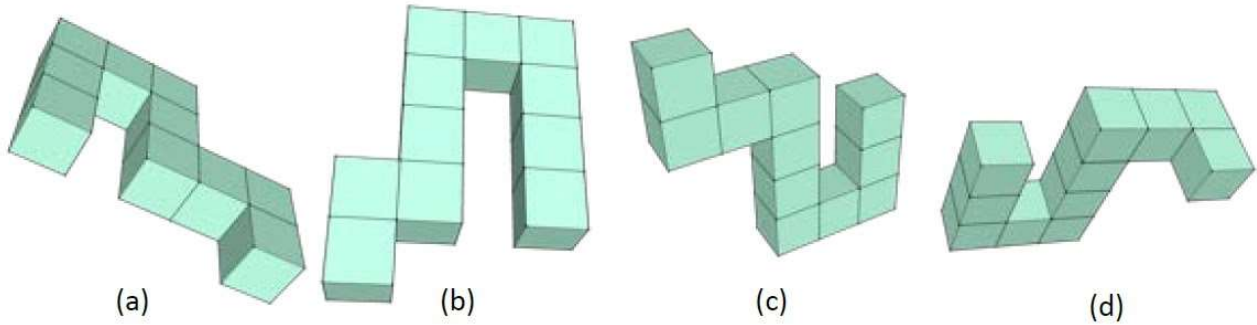
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Q2: You are given an image of a 3D object. Select from the pictures (a) to (d), the correct 3D view that can be obtained by 3D rotation of the object. Explain the rotation process, as shown in the example, for the selected options. Also explain why the other options were rejected. (Max. 150

Object

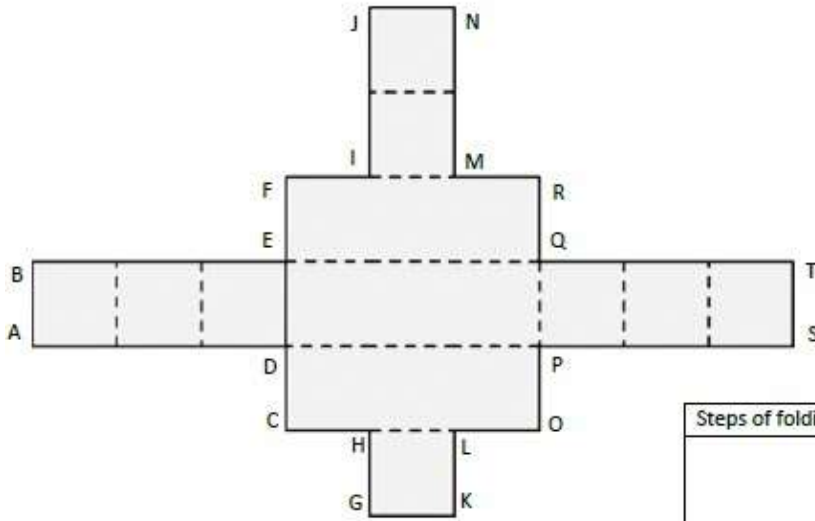


Alternative views

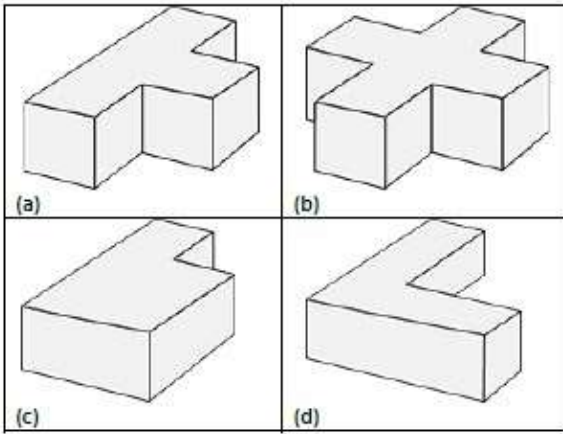


Long answer text

Q3: The 2D pattern given below can be folded along the dotted lines into a 3D shape. Four alternative 3D shapes (a)-(d) are also given. Select the correct one from the four alternatives (a)-(d) [1 mark]. Explain the steps in the folding process, as shown in the example [3 marks]. List the edges on the top horizontal surface of the derived shape [1 mark]. (Max. 150 words)



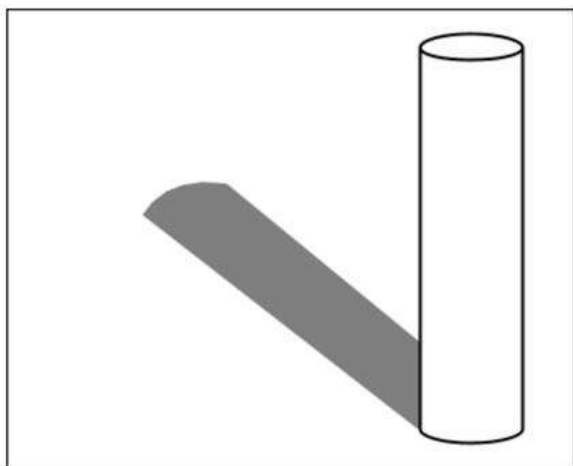
Steps of folding



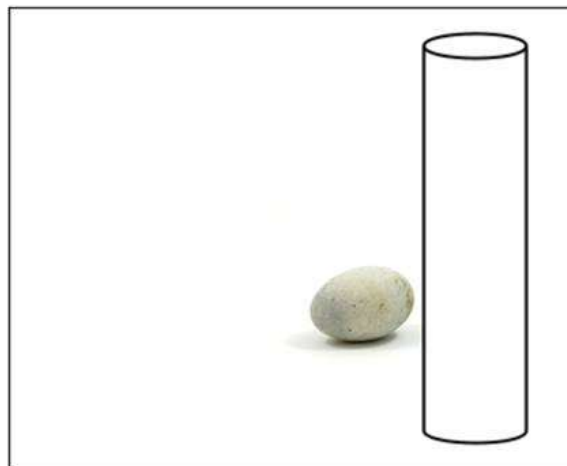
Long answer text

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Q4m: (a) With reference to shadow of the cylinder in image. Now if an egg is added to the scene as shown in Image 2, explain how the overall shadow will be effected.



(1)



(2)

Long answer text

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Q5: In an exam, candidates get 50 marks for each correct solution and -30 for each incorrect problem. If a candidate gets 2200 marks after 100 problems. How many problems were solved correctly?

- 30
- 35
- 45
- 60

Q6: The angle (in degrees) between two vectors  $a = (\sqrt{3}/2) i + (1/2)j$  and  $b = -(\sqrt{3}/2)i + (1/2)j$  is:

- 30

60

90

120