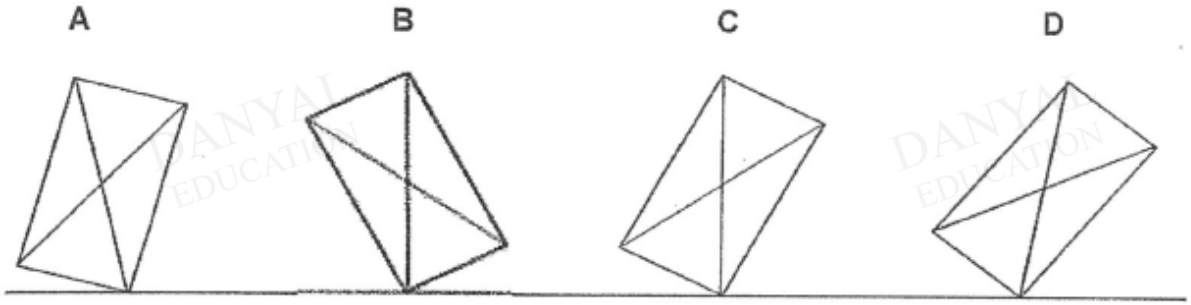
O Level Combined Physics MCQs

Moments Test 1.0

Q1

Four identical metal blocks are tilted at different angles as shown below.

Which metal block will topple to the left when released?



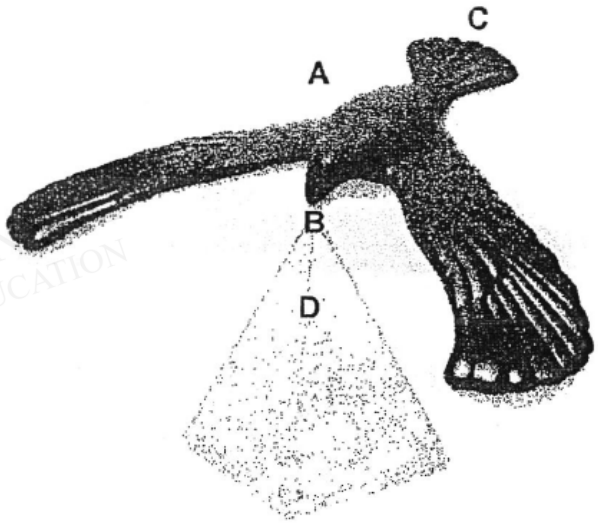
Q2

The following diagrams show the initial positions of three identical Bunsen burners. Which row best describes the states of equilibrium of the objects?

(A)	neutral	stable	unstable
(B)	neutral	unstable	stable
(C)	stable	unstable	neutral
(D)	stable	neutral	unstable

Q3

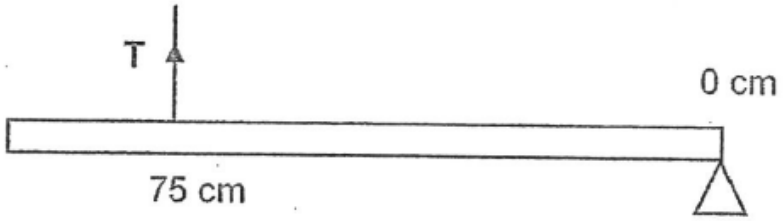
The following diagram shows a stability toy bird. When displaced, it will always rock back to its original position.



Which one of the above points shows the position of its centre of gravity?

Q4

A uniform metre rule of mass 54 g is pivoted at the 0 cm mark and kept horizontal by a string attached at the 75 cm mark.

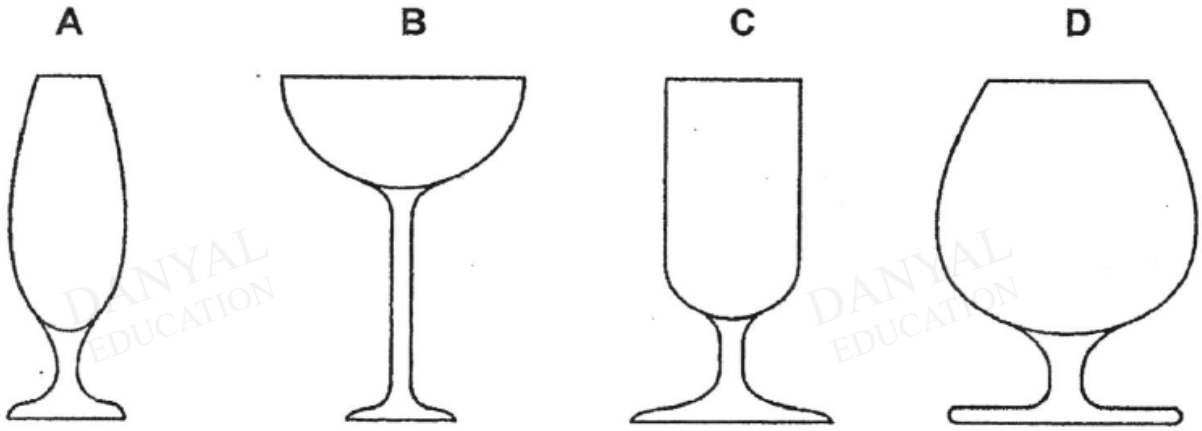


Calculate the tension T in the string.

A 0.18 N B 0.36 N C 18 N D 36 N

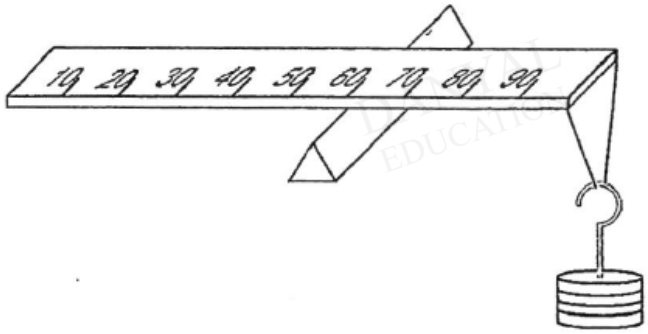
Q5

The diagrams show the cross-sections of different glasses. Which one is the **least** stable when filled with water to the brim?



Q6

A uniform ruler is pivoted at the 60 cm mark. A 4.0 N weight is suspended from one end to keep the ruler horizontal.



Calculate the weight of the ruler.

A 4.0 N **B** 4.8 N **C** 16.0 N **D** 24.0 N

Q7

The diagram below shows a man in a small boat.

Why does the boat become less stable when the man stands up?

A The centre of gravity of the man and boat is higher.

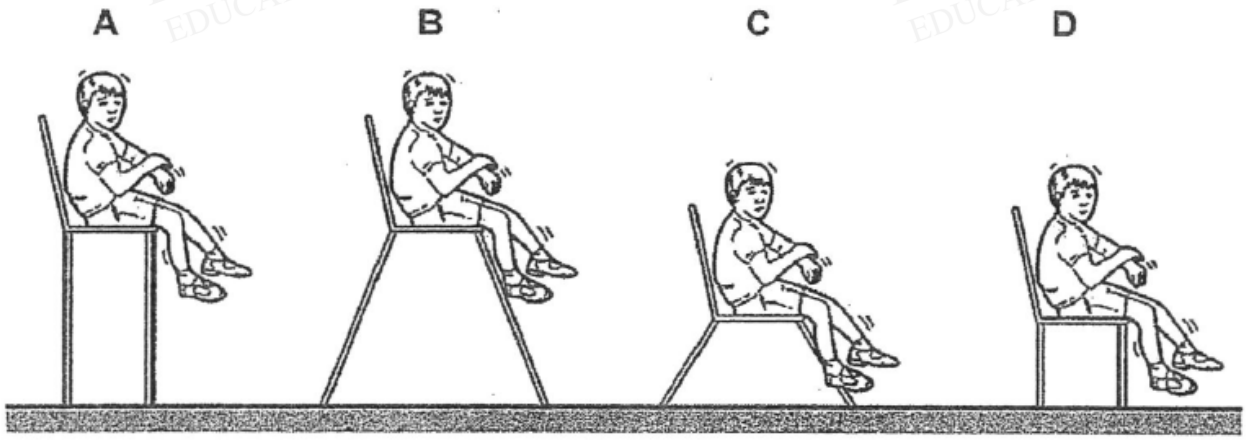
B The centre of gravity of the man and boat is lower.

C The total weight of the man and boat becomes higher.

D The total weight of the man and boat becomes lower.

Q8

Which chair is the most stable if the child moves in his seat?



Q9

In order to increase the stability of a body, what should the relationship between its base area and the height of its centre of gravity be?

	base area	height of centre of gravity
A	decreased	increased
B	decreased	decreased
C	increased	increased
D	increased	decreased

Q10

Fig. 6.1 shows four objects that are uniformly made of the same material but of different shapes.

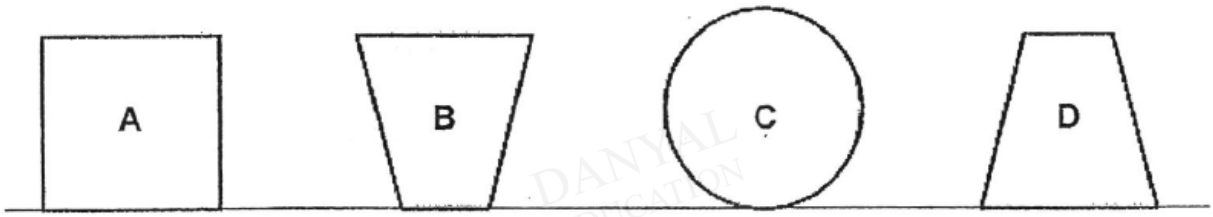


Fig. 6.1

Which object has the lowest stability?

Answers

Moments Test 1.0

Q1 A

Q2 C

Q3 D

Q4 B

Q5 B

Q6 C

Q7 A

Q8 C

Q9 D

Q10 B

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