

NAME  
SCHOOL

INDEX NUMBER  
DATE

## EQUILIBRIUM AND CENTRE OF GRAVITY

1. 1995 Q33 P1

What is meant by the centre of gravity of a body? (1 mark)

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2. 1998 Q7 P1

State one advantage of fitting wide tyres on a vehicle that moves on earth roads.

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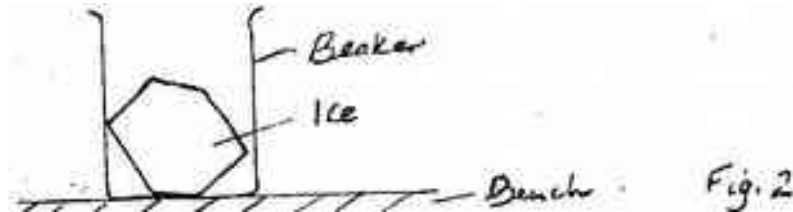
3. 1999 Q3 P1

State how the position of the centre of gravity of a body in stable equilibrium changes to that in the rest position when the body is slightly tilted and then released.

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4. 2000 Q3 P1

Fig. 2 shows a beaker placed on a bench. of ice is placed in the beaker as shown.

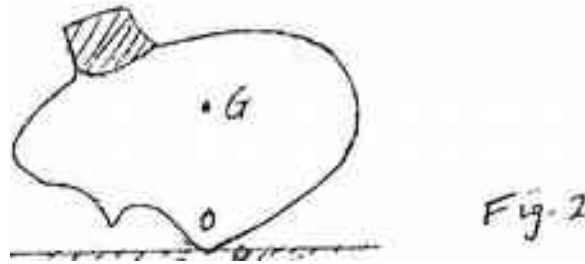


State and explain the change in the stability of the beaker when the ice melts.

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5. 2002 Q2 P1

Fig. 2 represents a rock balanced at point O. G is the centre of gravity of the rock. Use this information to answer questions 5 and 6.



Draw and label on the figure, the forces acting on the rock.

6. 2002 Q3 P1

If the portion of the rock represented by the shaded part is chopped off explain why the rock may topple to the right.

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7. 2003 Q3 P1

Figure 3 shows two identical trolleys with loads A and B. The loads are identical in shape and size.



Figure 3

Given that the density of A is greater than that of B, explain why the trolley in figure 3(ii) is more suitable.

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8. 2005 Q2 P1

Fig 2 shows a solid cylinder standing on a horizontal surface. The cylinder is in stable equilibrium.

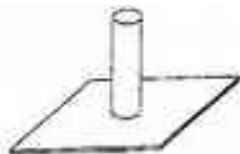
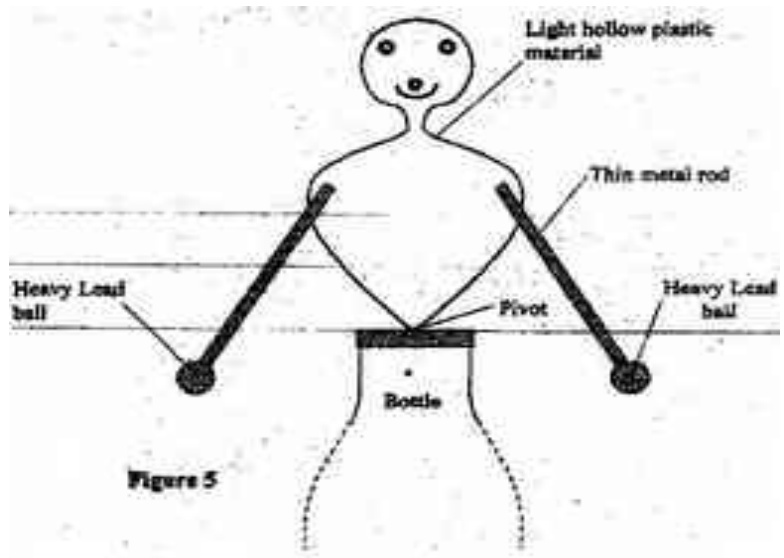


Fig 2

On the horizontal space provided, sketch the cylinder in neutral equilibrium.(1 mark)

9. 2008 Q10 P1

Fig. 5 shows a toy resting on top of a closed bottle. Use the information on the figure to answer questions 10 and 11.



Mark on the diagram, point Q, the approximate centre of gravity of the toy. (1 mark)

10. 2008 Q11 P1

Giving a reason, name the state of equilibrium of the toy. (2 marks)

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11. 2008 Q14 P1

The system in Fig. 8 is in equilibrium

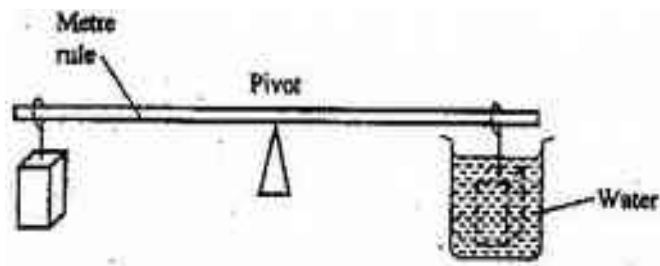


Figure 8

When the temperature of the water is raised the system is observed to tilt to the right, state the reason for this observation. (2 marks)

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12. 2009 Q9 P1

Figure 4 shows a uniform cardboard in the shape of a parallelogram



Figure 4

Locate the centre of gravity of the cardboard. (1 mark)

13. 2010 Q14 P1

Figure 6 shows an athlete lifting weights while standing with the feet apart.

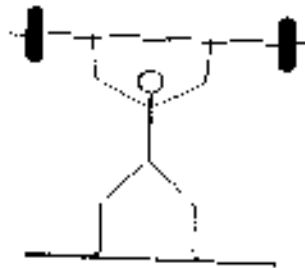


Figure 6

Explain why standing with the feet apart improves an athlete's stability. (1 mark)

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14. 2012 Q9 P1

State the reason why a steel sphere resting on a horizontal surface is said to be neutral equilibrium. (1mark)

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