Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic: Magnetism And Electromagnetism (High Demand Questions)

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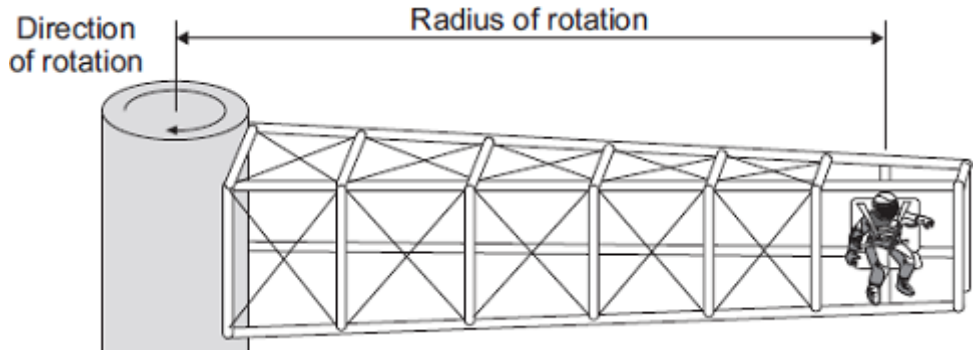
Name of the Student:_____
Max. Marks : 16 Marks **Time : 16 Minutes**

Q1.

The diagram shows a 'G-machine'. The G-machine is used in astronaut training.

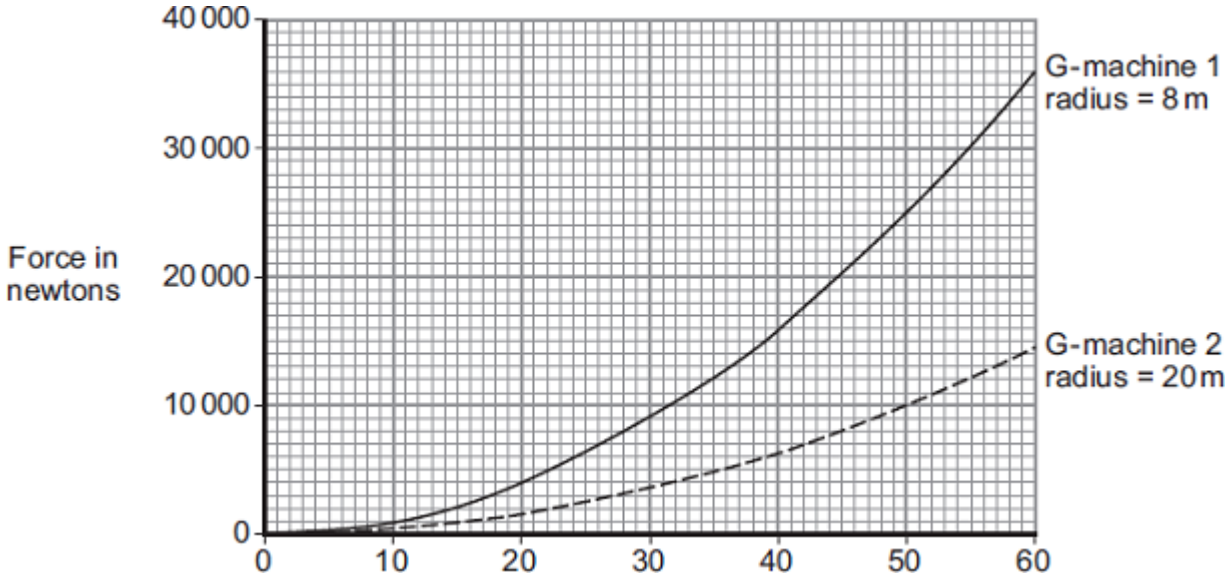


The G-machine moves the astronaut in a horizontal circle.

(a) The force causing the astronaut to move in a circle is measured.

The graph shows how the speed of the astronaut affects the force causing the astronaut to move in a circle for two different G-machines.

The radius of rotation of the astronaut is different for each G-machine.



(i) State **three** conclusions that can be made from the graph.

1. _____

2. _____

_____

3. _____

_____

(3)

(ii) The speed of rotation of G-machine 1 is increased from 20 m/s to 40 m/s.

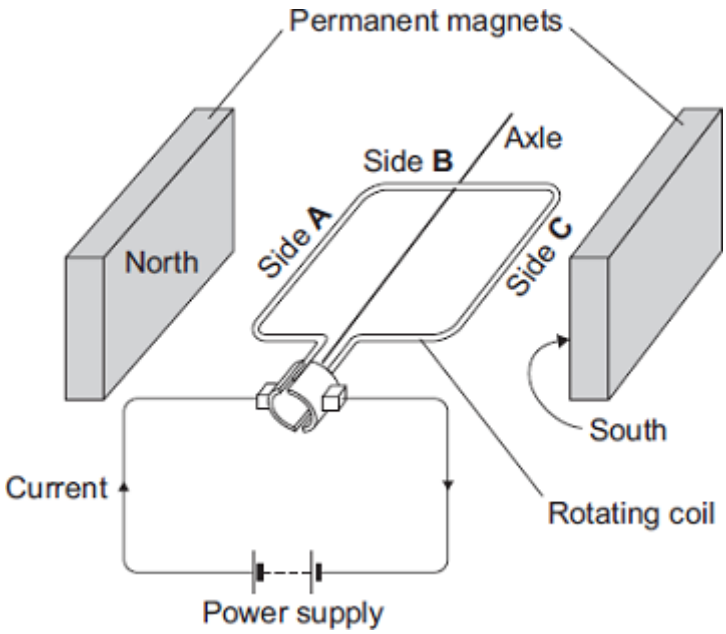
Determine the change in force on the astronaut.

_____

Change in force = _____ N

(1)

(b) Each G-machine is rotated by an electric motor. The diagram shows a simple electric motor.



(i) A current flows through the coil of the motor.

Explain why side **A** of the coil experiences a force.

_____

_____

_____

_____

(2)

(ii) Draw arrows on the diagram to show the direction of the forces acting on side **A** of the coil and side **C** of the coil.

(1)

(iii) When horizontal, side **B** experiences no force.

Give the reason why.

_____

_____

(1)

(c) While a G-machine is rotating, the operators want to increase its speed.

What can the operators do to make the G-machine rotate faster?

_____

_____

(1)

(d) The exploration of space has cost a lot of money.

Do you think spending lots of money on space exploration has been a good thing?

Draw a ring around your answer.

Yes **No**

Give a reason for your answer.

_____

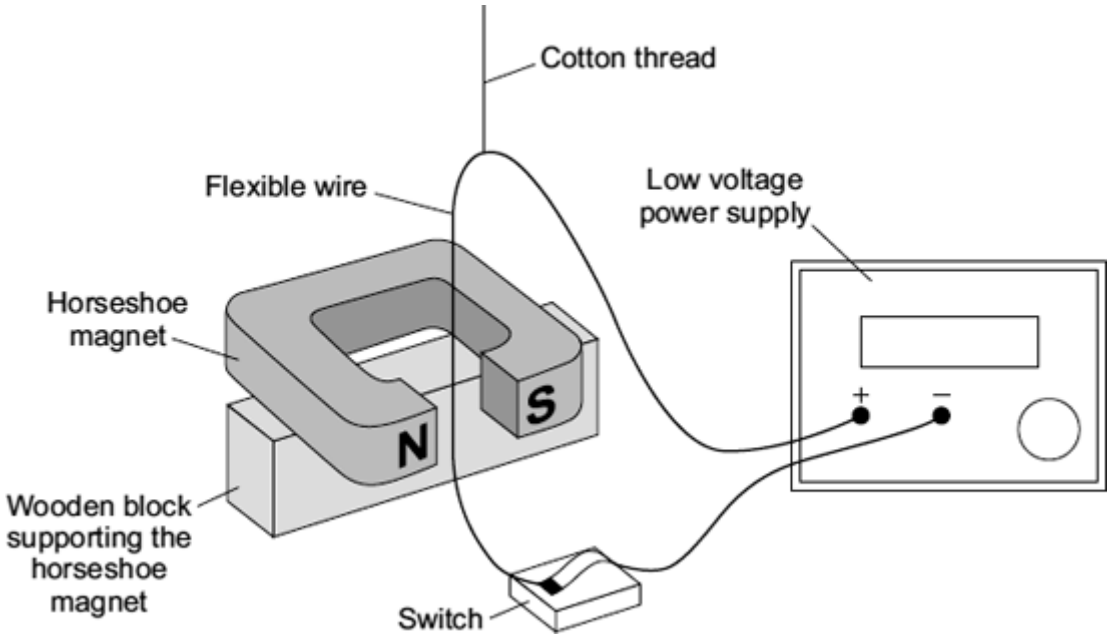
_____

(1)

(Total 10 marks)

Q2.

(a) A laboratory technician sets up a demonstration.



A flexible wire is suspended between the ends of a horseshoe magnet. The flexible wire hangs from a cotton thread. When the switch is closed, the wire kicks forward.

Identify the effect which is being demonstrated.

_____

(1)

(b) A teacher makes some changes to the set-up of the demonstration.

What effect, if any, will each of the following changes have?

(i) more powerful horseshoe magnet is used.

_____

_____

(1)

(ii) The connections to the power supply are reversed.

_____

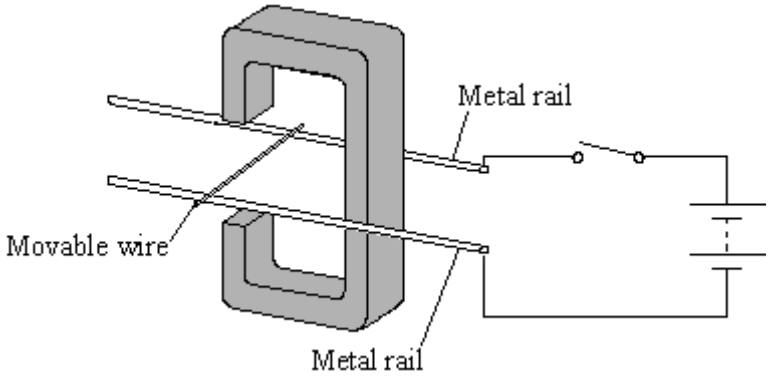
_____

(1)

(Total 3 marks)

Q3.

The diagram shows apparatus used to demonstrate the electric motor effect. When he switch is closed the wire moves.



(i) Draw an arrow on the diagram to show the direction the wire moves.

(1)

(ii) Explain why the wire moves.

_____

_____

_____

_____

(2)

(Total 3 marks)