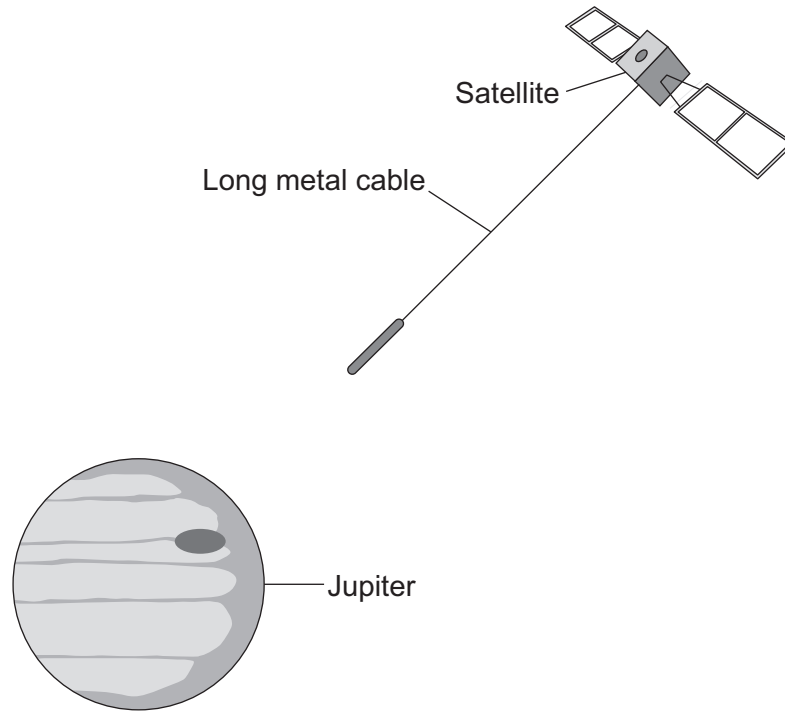


7 Jupiter has a magnetic field which is more powerful than the magnetic field of any other planet in the Solar System.

Some scientists have suggested that, in the future, a long metal cable could hang from a satellite which orbits Jupiter. The cable would be part of a complete circuit. This arrangement would produce electricity for the satellite.



7 (a) (i) What is the name of the effect that would produce electricity for the satellite?

.....  
(1 mark)

7 (a) (ii) Describe how a potential difference is produced across the ends of the metal cable.

.....  
.....  
.....  
.....  
(2 marks)



7 (a) (iii) Why will the potential difference produce an electric current?

.....  
.....

(1 mark)

7 (b) Other satellites in the Solar System could use the same effect to produce electricity in a similar way.

Suggest **two** reasons why the potential difference produced for another satellite might be **smaller** than the potential difference for the satellite in the diagram.

1 .....

.....

2 .....

.....

(2 marks)

|   |
|---|
|   |
| 6 |

Turn over for the next question

Turn over ►

