Q1.

A car has an oil leak. Every 5 seconds an oil drop falls from the bottom of the car onto the road.

(a) What force causes the oil drop to fall towards the road?

_____

(1)

(b) The diagram shows the spacing of the oil drops left on the road during part of a journey

Describe the motion of the car as it moves from **A** to **B**.

_____

Explain the reason for your answer.

_____

_____

_____

_____

(3)

(Total 4 marks)

Q2.

Figure 1 shows an electric wheelchair.

Figure 1

(a) The wheelchair moves at a constant speed of 2.4 m/s for 4.5 seconds.

Calculate the distance moved by the wheelchair.

Use the equation:

distance = speed × time

_____

_____

_____

_____

Distance = _____ m

(2)

(b) What could be a reason for the speed of the wheelchair decreasing?

Tick **one** box.

It started going downhill.	☐
It started going uphill.	☐
Its store of kinetic energy increased.	☐
It used more power from its battery.	☐

(1)

(Total 3 marks)

Mark schemes

Q1.

(a) gravitational / gravity / weight

*do **not** accept gravitational potential*

1

(b) accelerating

accept speed / velocity increases

1

the distance between the drops increases

1

but the time between the drops is the same

accept the time between drops is (always) 5 seconds
accept the drops fall at the same rate

1

[8]

Q2.

(a) distance = 2.4 m/s × 4.5 s

1

distance = 10.8 (m)

*an answer of 10.8 m scores **2** marks*

1

(b) It started going uphill.

1

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