Science Mastery

Read the exam style question carefully, then fill in each section below.

Question:

An electromagnetic wave has a frequency of 950 000 Hz.

Calculate the wavelength of the electromagnetic wave.

Give the unit.

Give your answer to 1 decimal place. **(6)**

Section 1: At first glance

1. What **command words** are used in this question? Circle them clearly.

2. **Underline the key information** in the question above.

2. **How many marks** is this question worth?

Section 2: Thinking ahead

Read the question again.

What do you need to know in order to answer this question really well?

Can you split the question into two or more parts?

What are the units you need to include in your answer?

Section 4: Space to plan

Use this space to plan your answer.

Section 4: Answer the question – show all your workings

Section 5: Check your answer

Check that your answer has included

- ☑ Showing your workings
- ☑ Recall the velocity of electromagnetic waves
- ☑ Included units

Mark Scheme:

Marking point	**Why does this get a mark?**	**Marks**
Velocity = 300,000,000 m/s	Stating the velocity of EM waves	1
Velocity = frequency × wavelength **or** $v = f \lambda$	Stating the equation that links velocity, frequency and wavelength	1
300,000,000 = 950,000 x wavelength	Substituting in the values	1
Wavelength = $\frac{300,000,000}{950,000}$ Wavelength = 315.7894…	Rearranging to solve for wavelength and calculating answer	1
Wavelength = 315.8	Giving answer to 1 decimal place	1
m **or** metres	Including the unit	1