

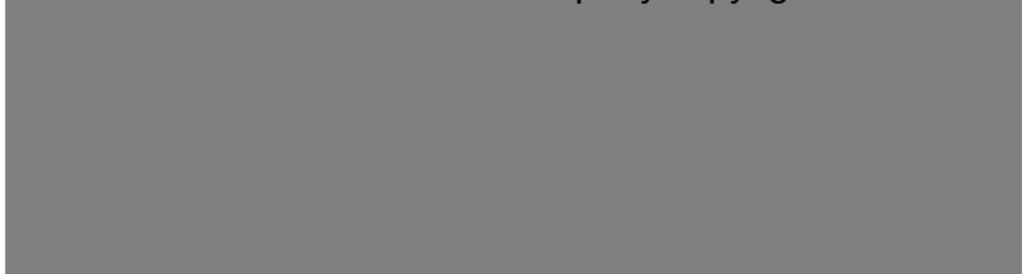
GCSE Physics B (Twenty First Century Science)
J259/04 Depth in physics (Higher Tier)

Question Set 21

1 James is an astronomer and he observes light from distant galaxies on Earth.

The diagram shows the spectral lines of hydrogen in the visible part of the electromagnetic spectrum, as seen on Earth, and for two galaxies at different distances away from Earth.

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(a) James makes a conclusion from this data.

Complete the sentences to finish James's conclusion.

Use words from the list.

You can use each word once, more than once, or not at all.

further nearer more less red blue
wavelength frequency faster slower

The away the galaxies are from Earth, the
the spectral lines are shifted towards theend of the spectrum.

This suggests that theof the light coming from galaxies
further away is stretched. I can conclude that more distant galaxies must be
moving away from the Earth, than galaxies that are closer to
Earth, which suggests that the universe is expanding.

[4]

(b) James discovers a new galaxy and writes an article about it in a scientific journal.

Before it is published it must be peer reviewed.

Explain why and how the article is **peer reviewed**.

[2]

Total Marks for Question Set 21: 6

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