

16 After an atom of hydrogen has been exposed to suitable electromagnetic radiation, the atom can emit visible light. The emitted light contains a small number of different wavelengths of visible light.

\*(a) Explain the process that results in the emission of different wavelengths of visible light. Your answer should include reference to energy levels in atoms.

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(b) It is also possible to make the atoms in a sample of air emit visible light.

Explain why the light emitted by the air has a large number of different wavelengths.

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**(Total for Question 16 = 8 marks)**