

Q1. (a) State the origin of the colour of transition-metal complexes.

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(2)

(b) Give **three** changes to a transition-metal complex which result in a change in colour.

Change 1

Change 2

Change 3

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(3)

(c) You are provided with a 1.00 mol dm⁻³ solution of iron(III) ions and a visible-light spectrophotometer (colorimeter). Outline a plan for experiments using this solution and this apparatus which would enable you to determine the concentration of iron(III) ions in a solution of unknown concentration.

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(5)

(Total 10 marks)