A-LEVEL PAPER 3 PP13 MS

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| **1.** |  |
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|  | **[18]** |
| **2.** |  |
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|  | **[6]** |
| **3.** |  |
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|  | **[13]** |
| **4.** |  |
|  | **[5]** |
| **5.** |  |
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|  | **[15]** |

**6.** (a)     (i)      EDTA4−  +  [Cu(H2O)6]2+  →  [Cu(EDTA)]2−  +  6H2O

**1**

(ii)     (Mol EDTA = (6.45/1000) ×0.015 = )9.68 ×10−5 mol Cu(II)

**1**

Conc. Cu(II) = ((9.68 ×10−5) / 0.025 =) 0.00387 mol dm−3

*Correct answer without working gains M2 only.*

**1**

(b)     Samples may not be consistent throughout the river  
OR  
Concentration may vary over time

*Ignore comments on technique.*

**1**

(c)     [Ag(NH3)2]+

*Accept name eg diamminesilver(I) ion.*

**1**

aldehyde

*Allow CHO.*

**1**

**[6]**

**7.** C

1

**8.** D

1

**9.** A

1

**10.** D

1

**11.** D

1

**12.** C

1

**13.** D

1

**14.** C

1

**15.** D

1

**16.** D

1

**17.** D

1

**18.** D

1

**19.** A

1

**20.** B

1

**21.** C

1

**22.** D

1

**23.** C

1

**24.** D

1

**25.** D

1

**26.** D

1

**27.** C

1

**28.** C

1

**29.** D

1

**30.** D

1

**31.** A

1

**32.** A

1

**33.** C

1