| **Question** | **Scheme** | **Marks** |
| --- | --- | --- |
| **1(a)** |  | B1 |
|  | M1 |
|  | A1 |
|  |  | **(3)** |
|  | **Note that there are no marks in (b) for using an AP (or GP) sum formula unless their terms do form an AP (or GP).** |  |
| **1(b)** |  | M1 |
| or e.g. | M1 |
|  | A1 |
|  |  | **(3)** |
|  |  | **(6 marks)** |
| **2(a)** |    | B1 |
|  |  | **(1)** |
| **2(b)** |   | M1 |
|    | M1 |
|  |  |
|   | dM1 |
|   | A1 |
|  |  | **(4)** |
|  |  | **(5 marks)** |
| **3(i)(a)** |  | B1 |
|  |  | **(1)** |
| **3(i)(b)** |  | M1 |
| = 80 | A1 |
|  |  | **(2)** |
| **3(ii)(a)** |  | B1 B1 |
|  |  | **(2)** |
| **3(ii)(b)** |  oror | M1 |
|  | M1 |
| cao and cso | A1 |
|  |  | **(3)** |
|  |  | **(8 marks)** |
| **4(a)** |  *a* + 5 | B1 |
|  |  | **(1)** |
| **4(b)** |  | M1 |
|  =  **(\*)** | A1 cso |
|  |  | **(2)** |
| **4(c)** | 41 =   or  | M1 |
|  (*a* + 9)( *a* – 4) = 0 | M1 |
|  *a*  = 4 or  | A1 |
|  |  | **(3)** |
|  |  | **(6 marks)** |
| **5(a)** |   | M1 |
|    | A1 |
|  |  | **(2)** |
| **5(b)** |  | M1 |
|    |  |
|  = “2”+ “7”+ “32”+ “157” | dM1 |
|  = 198  | A1 |
|  |  | **(3)** |
|  |  | **(5 marks)** |
| **6(a)** |  , *c* is a constant |  |
|  |  | B1 |
|  |  | **(1)** |
| **6(b)** |  | M1 |
|   **(\*)** | A1 cso |
|  |  | **(2)** |
| **6(c)** |  | M1 |
|  | M1 |
|  or  | M1 |
|  or  | A1 cso |
|  |  | **(4)** |
|  |  | **(7 marks)** |
| **7(a)** |  (= 6*k*) | B1 |
|  |  | **(1)** |
| **7(b)** |  (=) | M1 |
|  | M1 |
|  | A1 |
|  Solves  to obtain *k* =  | M1 |
| *k* = 1/3 | A1 |
| *k* = 1 | B1 |
|  |  | **(6)** |
|  |  | **(7 marks)** |
| **8(a)** |  | M1 A1 |
|  |  | **(2)** |
| **8(b)** |  | B1 |
|  | M1 |
|   | A1 |
|  |   | **(3)** |
| **8(c)** | 500 | B1 |
|  |  | **(1)** |
|  |  | **(6 marks)** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Source paper** | **Question number** | **New spec references** | **Question description** | **New AOs** |
| 1 | C1 2017 | 3 | 4.2 and 4.3 | Iterative sequences | 1.1b and 1.2 |
| 2 | C1 June 2014R | 3 | 4.2 and 4.3 | Sequence defined by recurrence relation | 1.1b |
| 3 | C1 2015 | 4 | 4.2, 4.3  | Sequences and Series | 1.1b |
| 4 | C1 Jan 2012 | 4 | 4.2 and 2.3 | Sequences and series | 1.1b |
| 5 | C1 2014 | 5 | 4.2 and 4.3 | Sequences given by a formula | 1.1b |
| 6 | C1 2012 | 5 | 4.2, 4.3, and 2.5 | General sequences and series | 1.1b. 3.1a |
| 7 | C1 2013 | 4 | 4.2 and 4.3 | Sequences generated from simple relations | 1.1b, 2.2a, 2.4 |