Question Number	Scheme	Marks
1. (a)	NNA: A – D – E – F – B – C – A 27+25+21+34+58+56 = 221 (km)	M1 A1 A1 **(3)**
(b)	RMST weight = 118 (km)	B1
	118 + 27 + 38 = 183 (km)	M1 A1 **(3)**
(c)	183 $\leqslant$ length $\leqslant$ 221	M1 A1 **(2)**
		8 marks

Notes for Question 1

a1M1: Nearest neighbour A – D – E – F – B or accept 1 5 6 2 3 4 across the top of the table
a1A1: Route correctly stated, must return to A, accept link back to A
a2A1: Length correctly stated. Do not ISW if candidates then go on to double the route length

b1B1: CAO for RMST weight (either 118 or 34 + 21 + 25 + 38) – maybe implied by later working
b1M1: Adding 27 + 38 (the two least weighted arcs) to their RMST length – this mark maybe implied by the correct value for the lower bound – note that their RMST must contain only four arcs
b1A1: CAO - if 183 seen without working then award all 3 marks in **(b)**

c1M1: Their answers from **(a)** and **(b)** correctly used, accept any inequalities or any indication of an interval from their 183 to their 221 (so 183 – 221 can score this mark). Please note that UB > LB for this mark
c1A1: CAO (no follow through on their values) including correct inequalities or equivalent set notation (but condone 183 < length $\leqslant$ 221)