Qu	Scheme	Marks	AOs
3(a)	$\overline{t} = \dfrac{2876.7}{184} = 15.63...$ $\sigma_t = \sqrt{\dfrac{46797.3}{184} - \overline{t}^2} \quad \left[= \sqrt{9.903...} \right]$	M1	1.1b
	$= 3.1470...$ awrt 3.15	A1	1.1b
	$28.7 > 15.63... + 3 \times 3.1470...$ [or $28.7 >$ awrt 25.1]	B1ft	1.1b
		(3)	
(b)	e.g. values range from $0°$ to $360°$ as they are angles measured from North, very high or low values would indicate close to North for wind direction rather than being outliers	M1	2.4 [LDS]
	e.g. Wind direction	A1	2.2a [LDS]
		(2)	
(c)	$\left[2000 + \right]\dfrac{15}{32} \times 400$ [or $\dfrac{184}{4} = 46 \therefore$ in $[2000, 2400)$]	M1	2.1
	$= 2187.5$	A1	1.1b
		(2)	
(d)	$\overline{C} = 24.83...$	B1	1.1b
	$\sigma_c = 2.7$	B1	1.1b
		(2)	
		(9 marks)	

Notes:

(a) **M1**: For a correct expression for $\overline{t}$ and either σ_t or s_t ft an incorrect evaluation of $\overline{t}$

Condone missing square root. NB $s_t = \sqrt{9.95783...}$

A1: For $\sigma_t =$ awrt 3.15, may be implied by correct limit for outliers. [$s_t =$ awrt 3.16]

B1ft: For sight of the correct calculation and suitable comparison with 28.7 ft an incorrect evaluation of σ_t or s_t

(b) **M1**: For a suitable reason for not considering outliers

A1: Identifies an appropriate variable

(c) **M1**: Correct fraction $\dfrac{15}{32} \times 400$ allow a correct equation leading to a correct fraction

e.g. $\dfrac{x - 2000}{2400 - 2000} = \dfrac{46 - 31}{63 - 31}$ for M1 Use of $(n+1)$ with 46.25 allow $\dfrac{15.25}{32} \times 400$

A1: For 2187.5, allow 2190.626 from $(n+1)$ Accept awrt 2190

(d) **B1**: For value of $\overline{C}$ awrt 24.8

B1: For value of σ_c cao