Question Number	Scheme	Marks
2 (a)	Mean = 1.98	B1
	Variance = 1.95	B1
	Mean and variance are similar [no reason to doubt the manager's belief]	B1
		(3)
(b)(i)	$P(X \geq 4) = 1 - P(X \leq 3) = 1 - 0.8571$	M1
	$= 0.1429$ (Calc 0.1428765…) awrt **0.143**	A1
(ii)	$P(X \leq 6) - P(X \leq 2) = 0.9955 - 0.6767$	M1
	$= 0.3188$ (Calc 0.318789…) awrt **0.319**	A1
		(4)
(c)	$H_0 : \lambda = 2 \quad H_1 : \lambda > 2$ Allow $H_0 : \lambda = 10 \quad H_1 : \lambda > 10$	B1
	$P(X \geq 17 \mid Po(10)) = 1 - P(X \leq 16) = 1 - 0.9730$ or $P(X \geq 16 \mid Po(10)) = 1 - P(X \leq 15) = 1 - 0.9513$	M1
	= 0.0270 (Calc 0.027041….) or CR $\geqslant$ 16	A1
	Reject H_0/In the CR/Significant	M1
	There is sufficient evidence to suggest that the **mean number** of **complaints** received is **greater** than 2 per day	A1
		(5)
		Total 12

		Notes
(a)	**B1**	cao do not allow fraction
	B1	cao
	B1	Allow mean = variance ignore extraneous non-contradictory comments
(b)(i)	**M1**	For $1 - P(X \leq 3)$ or $1 - 0.8571$
	A1	awrt 0.143 correct answer scores 2/2
(ii)	**M1**	For $P(X \leq 6) - P(X \leq 2)$ or $0.9955 - 0.6767$
	A1	awrt 0.319 correct answer scores 2/2
(c)	**B1**	Both hypotheses correct. Must be attached to H_0 and H_1 in terms of λ or μ
	M1	For writing or using Po(10) **and** $1 - P(X \leq 16)$ or CR: $1 - P(X \leq 15)$ implied by awrt 0.0487 from a CR method
	A1	awrt 0.027 or CR $\geqslant$ 16
	M1	A correct statement consistent with their *p*-value and 0.05 **or** 17 and their CR – no context needed but do not allow contradicting non contextual comments
	A1	(Dep on both M marks) Correct conclusion in context with bold

		words o.e. Must include the idea of rate so either: **mean number** or **number per day**