Question Number	Scheme	Marks
2 (a)	$\frac{[0\times5]+1\times38+2\times32+3\times17+4\times7+5\times1}{100}\left[=1.86\right]$*	B1*
		(1)
(b)	[r = 1.203] because total **expected** frequency must equal 100	B1
		(1)
(c)	[The manager needed to do this] to ensure that [all] **expected** frequencies were greater than 5	B1
		(1)
(d)	H_0 : Poisson (distribution) is [a] suitable/ sensible (model) H_1 : Poisson (distribution) is not [a] suitable/ sensible (model)	B1
	$\nu = [5-1-1] = 3$	B1
	$c^2_3(0.01) = 11.345 \Rightarrow$ CR: $X^2 \ldots 11.345$	M1
	[Lies in the CR/Reject H_0] Sufficient evidence to say that **Poisson** is not a suitable model	A1ft
		(4)

	Notes	**Total 7**
(a)	**B1***	For a correct method to show the mean is 1.86 (Ignore use of 6 × 0) Allow $\frac{[0]+38+64+51+28+5}{100}$
(b)	**B1**	A correct explanation referring to the fact that total/sum **expected** frequency/ E_i must equal total observed frequency e.g. 100 – (15.567 + 28.955 +26.928 + 16.696 + 7.763 + 2.888) = r
(c)	**B1**	A correct explanation referring to the fact that [all] E_i /**expected** frequencies/values need to be greater than 5 e.g because **expected** 5 customers and [**expected]** 6 or more customers are both less than 5 Allow 2.88 < 5 and 1.203/r < 5 or 4.091 < 5
(d)	**B1**	Both hypotheses correct. Must mention Poisson/Po at least once.
	B1	$\nu = 3$ This mark can be implied by a correct critical value of 11.345 if no DoF given
	M1	For 11.345 or ft their degrees of freedom $\left[c^2_4(0.01) = 13.277\right]$
	A1ft	A correct conclusion based on their χ^2 critical value. Must mention Poisson