Question Number	Scheme	Marks
2(a)	$\frac{115\times130}{250}=59.8$	M1A1
		(2)
(b)	H_0 : There is no association between **salary** and university **education** H_1 : There is an association between the **salary** and university **education**	B1
	Observed: 52; Expected: "59.8"; $\frac{(O-E)^2}{E}$: $\frac{(52-"59.8")^2}{"59.8"}=1.017...$	M1
	$\sum\frac{(O-E)^2}{E}=2.908+"1.017"=3.925$	M1A1
	$\nu=(2-1)(2-1)=1$	B1
	$\chi^2_1(0.05)=3.841 \Rightarrow$ CR: $X^2 \geqslant 3.841$	B1ft
	[In the CR/Significant/Reject H_0] There is evidence of an association between the **salary** and **education**	A1ft
		(7)

	Notes	**Total 9**
(a)	**M1**	for use of $\frac{\text{Row total}\times\text{Column total}}{\text{Total}}$ May be implied by 59.8
	A1	Cao
(b)	**B1**	both hypotheses correct with salary and education. May be written in terms of independence
	M1	for use of $\frac{(O-E)^2}{E}$ ft their expected value in part (a) May be implied by 3.925 or 3.93
	M1	for 2.908 + 1.017 ft their $\frac{(O-E)^2}{E}$ May be implied by 3.925 or 3.93
	A1	for 3.925 Allow 3.93
	B1	$\nu=1$ Implied by 3.841
	B1ft	for 3.841 or ft their DoF [For reference $\nu=2$: 5.991 $\nu=3$: 7.815 $\nu=4$: 9.488]
	A1ft	This mark is independent of the hypotheses. The conclusion must be consistent for the correct hypotheses. For a correct contextual conclusion ft their $\sum\frac{(O-E)^2}{E}$ **and** their CV. Must include salary and education. May be in terms of independence.