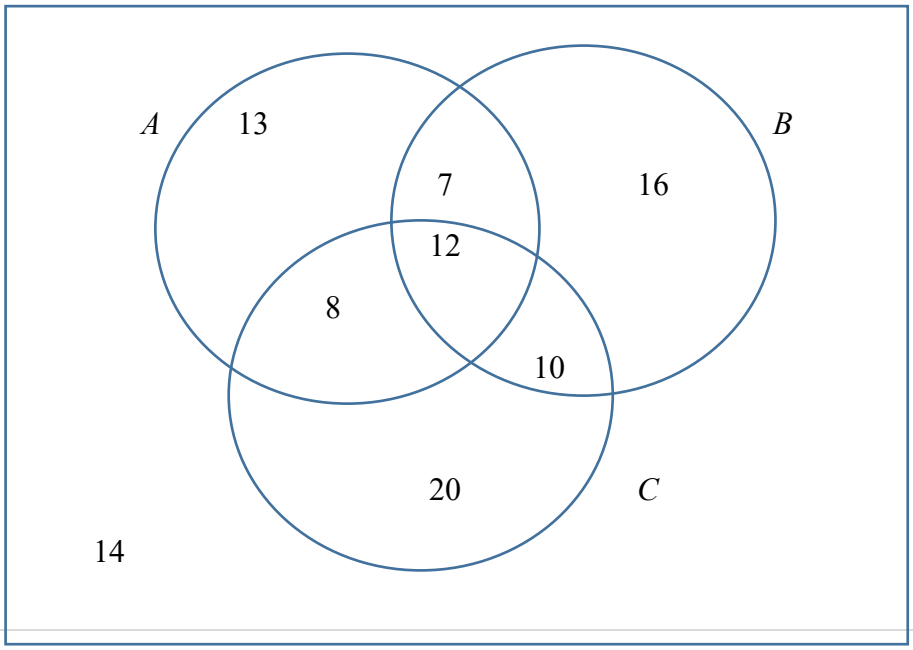
Question Number	Scheme	Marks
4(a)		B1 B1 B1ft B1 (4)
(b)	$P(A)=\frac{40}{100}$ $P(C)=\frac{50}{100}$ $P(A\cap C)=\frac{20}{100}$ $P(A)\times P(C)=P(A\cap C)$ therefore (A and C are) independent $P(A)=\frac{40}{100}$ $P(A\mid C)=\frac{20}{50}$ $P(A)=P(A\mid C)$ therefore (A and C are) independent	M1 A1 (2)
(c)(i)	$\left[\frac{'13'+'16'+'20'}{100}=\right]\frac{49}{100}$	B1ft (1)
(ii)	$P(\text{likes } B\mid\text{likes } C)=\frac{'12'+'10'}{'12'+'10'+'8'+'20'}$ $=\frac{22}{50}$	M1 A1 (2)
	Notes	**Total 9**
(a)	In part (a) allow the numbers in the Venn diagram written as probabilities eg 0.12, 0.07, 0.08 etc.	
	B1 12 correct in the centre of the Venn diagram	
	B1 At least **two** of 7, 8 and 10 correct	
	B1ft Any **one** of 13, 16 or 20 correct ft their 7,8,10 and 12 (must be positive) such that the 4 regions of A = 40 or the 4 regions of B = 45 or the 4 regions of C =50 Do not accept blank regions as 0 for ft.	
	B1 All correct including the 14	
(b)	**M1** Labelling all of the probabilities needed for a test of independence (probabilities must be correct or correct ft from their Venn diagram). Must use A and C Either $P(A), P(C)$ and $P(A\cap C)$ or eg $P(A)$ and $P(A\mid C)$	
	A1 Stating correct test with correct values $P(A)\times P(C)=P(A\cap C)$ or eg $P(A)=P(A\mid C)$ and correct conclusion of independence	
(c)(i)	**B1ft** Ft their "13", "16" and "20" provided the answer is a probability	
(ii)	**M1** Correct method for conditional probability using all appropriate regions of their Venn Diagram Condone $\frac{n}{50}$ (provided it does **not** come from simplification of $\frac{2n}{100}$) or $\frac{\frac{n}{100}}{\frac{50}{100}}$ with n „ 34 $\frac{\frac{22}{100}}{\frac{50}{100}}$ scores M1 Assuming independence is M0 eg $\frac{\frac{45}{100}\times\frac{50}{100}}{\frac{50}{100}}$	
	A1 0.44 oe	