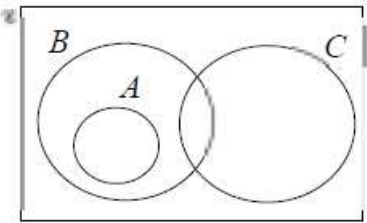
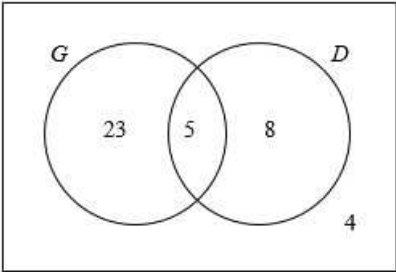
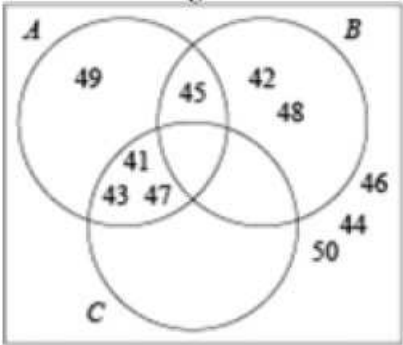
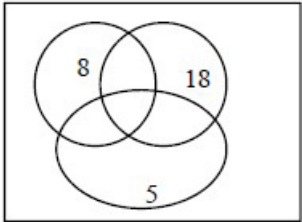
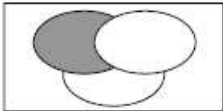
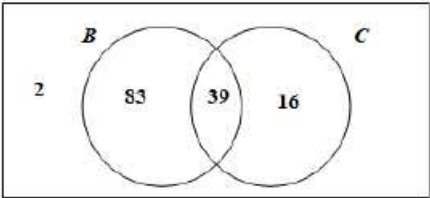


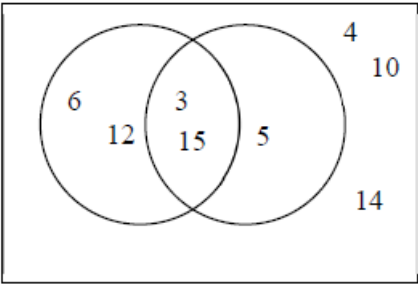
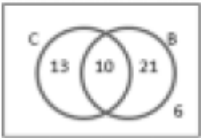
Question	Answer	Marks	AO Element	Notes	Guidance
1(a)	3, 5, 28, 14 correctly placed	2		B1 for 28 in the intersection	
1(b)	$\frac{28}{50}$ oe	1		FT <i>their</i> 28 where <i>their</i> $28 < 50$	
1(c)	$\frac{123}{175}$ oe	2		M1 for $\frac{42}{50} \times \frac{41}{49}$	
1(d)	$\frac{63}{88}$ oe	2		FT <i>their</i> 28 M1 for $\frac{\text{their}28}{33} \times \frac{\text{their}28 - 1}{32}$	
2(a)	Even square numbers oe	1			
2(b)		1			

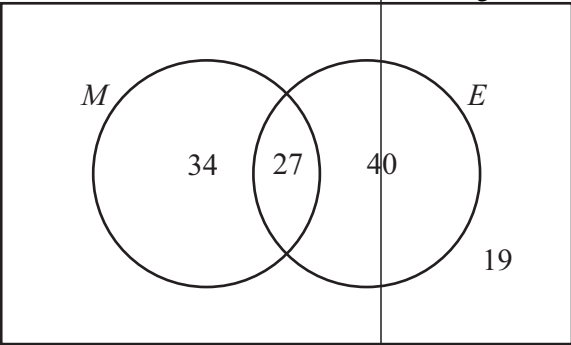
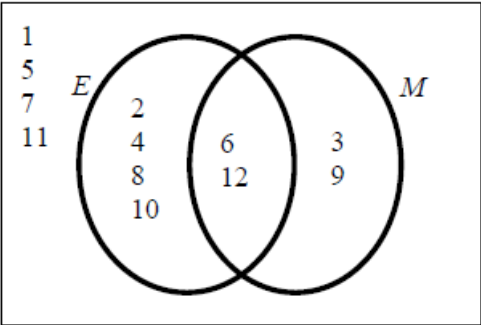
Question	Answer	Marks	AO Element	Notes	Guidance
3(a)		2		B1 for two correct	
3(b)	$G \cup D'$ oe	1			
4(a)	Correct Venn diagram 	3		B2 for 8 or 9 numbers correct or B1 for 6 or 7 numbers correct	
4(b)(i)	41, 43, 47	1		FT <i>their</i> Venn diagram	
4(b)(ii)	44, 46, 49, 50	1		FT <i>their</i> Venn diagram	

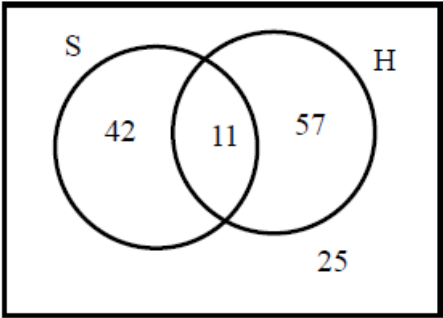
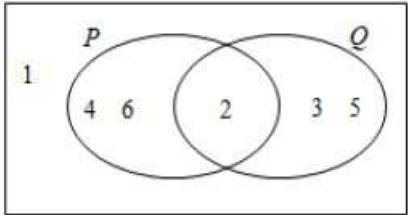
Question	Answer	Marks	AO Element	Notes	Guidance
4(c)	0	1		FT <i>their</i> Venn diagram	
5(a)	M1 for $3x + 7 = 19$ oe A1 for $3x = 19 - 7$ or better leading to $x = 4$	2		must see 19 and 7 with no errors seen	
5(b)		2		B1 for 2 correct	
5(c)	$\emptyset$ or $\{ \}$	1			
5(d)	15	1			
6(a)	14	1			
6(b)	16	1			
6(c)	$\frac{20}{462}$ oe	3		M2 for $\frac{5}{22} \times \frac{4}{21}$ or M1 for $\frac{5}{22}$ seen	

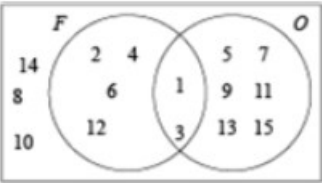
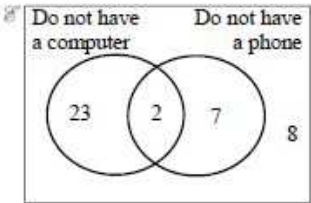
Question	Answer	Marks	AO Element	Notes	Guidance
6(d)	Correct shading 	1			
7(a)	10	1			
7(b)	$P \cup Q$ oe	1			
8(a)	14	2		M1 for any two of 1, 11, 14, 4 correctly placed on Venn diagram or for $1 + 25 - x + x + 18 - x = 30$ oe	
8(b)	$\frac{11}{30}$ oe	1		FT $\frac{25 - \text{their (a)}}{30}$ or $\frac{\text{their 11}}{30}$ from diagram	
9	40	1			
10	7	1			
11	$C \cap D = \{10\}$	1			
12(a)	16	1			

Question	Answer	Marks	AO Element	Notes	Guidance
12(b)	50	1			
12(c)	$\frac{4}{50}$ oe	2		FT <i>their (b)</i> for 1 or 2 marks B1 for $\frac{4}{k}, k > 4$ or $\frac{k}{\text{their } 50}, k < 50$	
12(d)	19	1			
13(a)		2		B1 for 2 or 3 correct values in the correct places or for the 2 correctly positioned and total in <i>B</i> equals 122 and total in <i>C</i> equals 55 provided $B \cap C \neq \emptyset$	
13(b)	$\frac{39}{140}$ oe	1		FT <i>their</i> $B \cap C$	
14(a)	1 4 9 16	2		B1 for 3 correct and none incorrect or for all correct and one extra incorrect	
14(b)	2, 3, 5, 7, 11, 13	2		B1 for 5 correct and none or one incorrect	

Question	Answer	Marks	AO Element	Notes	Guidance
14(c)(i)		2		B1 for 2 or 3 regions correct	
14(c)(ii)	7 11 13	1		FT <i>their</i> Venn diagram	
14(c)(iii)	2	1		FT <i>their</i> Venn diagram	
14(c)(iv)	$\frac{4}{16}$ oe	1		FT <i>their</i> Venn diagram for $\frac{n(F)}{16}$	
15(a)		2		B1 for at least 2 figures in the correct places	

Question	Answer	Marks	AO Element	Notes	Guidance
15(b)	44	1		FT their 3 values from (a) or 50 – <i>their</i> 6, provided answer is between 0 and 50	
16(a)		3		B2 for 2 or 3 numbers in the correct place or B1 for 1 correct number in the correct place	
16(b)	67	1		FT <i>their</i> diagram	
17(a)		2		B1 for 2 or 3 regions correct	

Question	Answer	Marks	AO Element	Notes	Guidance
17(b)	8	1		FT <i>their (a)</i>	
17(c)	$\frac{1}{6}$ oe	2		FT <i>their (a)</i> B1FT for 2 or <i>their</i> $n(E \cap M)$	
18(a)		3		B1 for 11 B1 for 25 B1 for total in S equals 53 and total in H equals 68 provided $S \cap H \neq \emptyset$	
18(b)	11	1		FT <i>their $S \cap H$</i>	
19		2		B1 for four or five numbers in the correct place	

Question	Answer	Marks	AO Element	Notes	Guidance
20(a)		2		B1 for 2 or 3 correctly completed regions	
20(b)	One of 5, 7, 9, 11, 13, 15	1		FT <i>their</i> Venn diagram	
20(c)	12	1		FT <i>their</i> Venn diagram	
20(d)	$\frac{8}{15}$ oe	1		FT <i>their</i> Venn diagram	
21(a)	$\frac{8}{15}$ oe	1			
21(b)		2		B1 for 2 or 3 correct out of 4 regions	
22	$A \cap B$	1			

Question	Answer	Marks	AO Element	Notes	Guidance
[Total: 82]					