Question Number	Scheme	Marks
3(a)(i)	B(60, 0.1)	B1
	$[\mathrm{P}(Y=0)+\mathrm{P}(Y=1)=](0.9)^{60}+60(0.1)^{1}(0.9)^{59}$ oe	M1
(ii)	=0.013777... awrt 0.0138	A1
		(3)
(b)	Po(6)	B1
	$[\mathrm{P}(Y\leq 1)=]0.01735....$ or 0.0174 from tables awrt 0.0174	B1
		(2)
(c)	N(6, 5.4)	B1
	$[\mathrm{P}(Y\leq 1)\approx]\mathrm{P}\left(Z<\frac{1.5-6}{\sqrt{5.4}}\right)$	M1M1
	$=\mathrm{P}(Z<-1.936...)$	A1
	$=1-0.9738=0.0262$ (or from calc 0.02640...)	A1
		(5)
(d)	[Poisson approximation is more suitable since] *p* is not close to 0.5 or *n* is large and *p* is small or (b) is closer to the true value	B1
		(1)
	Notes	**Total 11**

(a)(i)	**B1**	For writing or using B(60, 0.1) Allow if used in (ii)
	M1	For a correct expression oe Allow use of $^{60}C_0$ oe and $^{60}C_1$ oe ISW after a correct expression. Allow if seen in (ii)
(ii)	**A1**	Awrt 0.0138 **NB** SC answer only scores B1M0A0
(b)	**B1**	For writing or using Po(6)
	B1	Awrt 0.0174
(c)	**B1**	For writing or using N(6, 5.4) May be seen in a standardisation NB 5.4 = $\left(\frac{3\sqrt{15}}{5}\right)^2$
	M1	For continuity correction 1 ± 0.5
	M1	For standardising using 1, 0.5 or 1.5 with their mean and their standard deviation Allow ±
	A1	Awrt ±1.94 May be implied by awrt 0.026
	A1	Awrt 0.026
(d)	**B1**	For a correct reason (No need to mention Poisson) Ignore any reference to $np < 10$ oe e.g. the rate is small. Do not accept mean ≈ variance since 6 is not approximately 5.4 but ignore if alongside a correct answer