10	**(a)**		**Allow 2 sf throughout** H_0: $p = 0.25$ where p = P(a packet contains gift) H_1: $p < 0.25$ B(20, 0.25) & $X = 1$ P($X \leq 1$) = 0.0243 comp 0.025 Reject H_0 Sufficient evidence that proportion containing gift is less than 0.25	**B1** **B1** **M1** **A1** **A1** **M1** **A1** **[7]**	**1.1** **2.5** **3.3** **3.4** **1.1** **1.1** **2.2b**	or p = proportion of packets containing gift One error, eg undefined p B1B0 soi Condone P($X = 1$) = 0.0243 but not P($X = 1$) = 0.0211 or other incorrect dep 0.0243 and 0.025 Allow eg "H_0 is incorrect" Dep 0.0243 or P($X \leq 1$) stated or 0.0211 Can be implied by correct conclusion as for A1 below In context, not definite, eg not "Proportion is less"

Question			Answer	Marks	AO	Guidance
10	(b)		EITHER whether a packet contains a free gift is not independent of whether other nearby packets contain the free gift OR eg The probability that a packet contains a gift is not the same for each packet or The proportion of packets with gifts in each box is not constant OR Free gifts not distributed randomly	B1 [1]	3.5b	Allow The probability of packet containing a gift is not independent Explanation, **in context** of why either the independence condition or the constant probability condition is not met. NOT The number of gifts in each box is not constant