Question Number	Scheme	Marks
6 (a)	$\alpha = 5.1$	B1
	$\beta = \sqrt{\dfrac{1694.65 - 65\times('5.1')^2}{64}}$	M1
	$= 0.25$	A1
		(3)
(b)	$H_0 : \mu_A = \mu_B$ $H_1 : \mu_A < \mu_B$	B1
	$z = \pm\dfrac{5.0 - '5.1'}{\sqrt{\dfrac{0.24^2}{70} + \dfrac{'0.25'^2}{65}}}$	M1 M1
	$= -2.367...$ awrt -2.37	A1
	One tailed c.v. $z = -1.6449$ **or** CR: $z \leqslant -1.6449$	B1
	In CR/Significant/Reject H_0	M1
	Sufficient evidence to support Roxane's claim	A1
		(7)
(c)	Since the sample is **large** the **CLT** applies.	M1
	No [need to assume that the fat content is normally distributed]	A1
		(2)
(d)	Assumed that $s^2 = \sigma^2$ in **both** groups	B1
		(1)

	Notes	**Total 13**
(a)	**B1**	cao
	M1	For a correct method to find β using their α
	A1	Cao
(b)	**B1**	Both hypotheses correct. Allow equivalent hypotheses. Must be in terms of μ
	M1	For correct standard error ft their *s* in part a
	M1	For an attempt to find the test statistic, ft their SE and their α
	A1	awrt –2.37 (Allow 2.37)
	B1	–1.6449 or better (seen) (Allow 1.6449 or better if comparing to their 2.37)
	M1	A correct statement – need not be contextual but do not allow contradicting non contextual comments. ft their CV and test statistic
	A1	A correct contextual statement e.g sufficient evidence to support that crisps from **brand A** have a **lower fat** content than the crisps from **brand B** (must include the words in bold)
(c)	**M1**	A suitable comment that mentions large and CLT
	A1	A correct answer, context not required.
(d)	**B1**	For the assumption that sample variance = population variance for **both** groups