

Environmental and Land-Based Science

General Certificate of Secondary Education

Unit **B495/02**: Livestock Husbandry (Higher Tier)

Mark Scheme for June 2011

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Mark schemes should be read in conjunction with the published question papers and the Report on the Examination.

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Annotations

Used in the detailed Mark Scheme:

Annotation	Meaning
/	alternative and acceptable answers for the same marking point
(1)	separates marking points
not/reject	answers which are not worthy of credit
ignore	statements which are irrelevant - applies to neutral answers
allow/accept	answers that can be accepted
(words)	words which are not essential to gain credit
words	underlined words must be present in answer to score a mark
ecf	error carried forward
AW/owtte	alternative wording
ORA	or reverse argument

MARK SCHEME: B495/02

Question			CBT Question Numbers	Answer	Mark	Guidance															
1	a		1	A a hybrid	1																
	b		2	C the physical improvements produced by crossing two genetically different parents	1																
2			3	<table border="1"> <thead> <tr> <th>example</th> <th>description of food</th> <th>class of food</th> </tr> </thead> <tbody> <tr> <td>B</td> <td>lower nutrient content, high volume</td> <td>bulk feed</td> </tr> <tr> <td>A or B</td> <td>high in fibre</td> <td>roughage</td> </tr> <tr> <td>D</td> <td>high in water</td> <td>succulent</td> </tr> <tr> <td>C</td> <td>high nutrient content, low volume</td> <td>concentrate</td> </tr> </tbody> </table>	example	description of food	class of food	B	lower nutrient content, high volume	bulk feed	A or B	high in fibre	roughage	D	high in water	succulent	C	high nutrient content, low volume	concentrate	2	1 mark for each correct column
example	description of food	class of food																			
B	lower nutrient content, high volume	bulk feed																			
A or B	high in fibre	roughage																			
D	high in water	succulent																			
C	high nutrient content, low volume	concentrate																			
3			4	ovary; testis;	2																
4			5	D less energy is used	1																
5	a		6	oestrogen	1																
	b		7	link between decreasing day length and hormone release	1	allow reference to changing food / temperature; coming into season															
6	a		8	gaining weight and losing weight	1																

Question		CBT Question Numbers	Answer	Mark	Guidance
	b	9	any 1 from: move onto fresh ground; quarantine new stock; remove bi-host species eg snails by drainage/spraying	1	accept vaccination; retreatment
7	a	10	the yield increases initially as the calf's demands increase with growth; then decline as it eats more solid food	2	
	b	10	initially very high fat and protein content (colostrum); a) In normal milk fat; protein and lactose gradually increase then decline gradually over the lactation	2	
8	a	11	to induce super ovulation / production of many embryos	1	
	b	11	no genetic material from surrogate mother; owtte	1	
	c	12	any 2 from: Inbreeding; Susceptibility to disease of the national herd; Loss of valuable genes	2	accept loss of certain breeds
9		13	poorer growth rates/yield; poorer food conversion; less fecund; less suited to intensive conditions; max 3	3	only 1 mark for examples of improved yield ie not more meat and more milk

Question		CBT Question Numbers	Answer	Mark	Guidance
10		13	contagious mastitis has declined while environmental has increased (as a proportion)	1	
11	a	15	74%	1	
	b	15	£30 000	1	
12		16	contagious infection has two peaks at the start and end of the dry period; environmental increases rapidly at the start of the lactation/end of the dry period; has a higher background level; both do not occur in the middle of the dry period; decline as the lactation progresses	3	max 1 mark if differences between contagious and environmental not covered
13		17	any 2 from; contagious – teat dipping; disinfection of clusters; use of antibiotics; use disposable udder wipes; segregation / culling of infected cows	2	allow homeopathic treatments; dry wipes; more frequent milking
14		18	two populations , one of each breed; sufficient numbers of each; same sex; weigh at start; weigh regularly throughout; keep in same environmental conditions; feed the same; weigh at end; calculate average increase of mass for each breed	4	level of response marking – expect 8 valid points for full marks 1 valid point = 0 marks 2/3 valid points = 1 mark 4/5 valid points = 2 marks 6/7 valid points = 3 marks 8 valid points = 4 marks

Question			CBT Question Numbers	Answer	Mark	Guidance
15			19	genotype arrangements of chromosomes/ genes/alleles. phenotype physical expression of these genes owtte	2	reject what they get from their parents
				Total	36	

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