

## Leaving Certificate Higher Level Beef Production Questions

**2011**

### Option One

3. (a) Compare summer grazing and winter fattening as systems for finishing beef animals.  
(c) Food Conversion Efficiency (FCE) decreases with age in farm animals.  
(i) Explain the underlined term **and** give an example of FCE for a **named** farm animal.  
(ii) Explain why FCE decreases with age in an animal.  
(iii) Explain how a farmer might improve the FCE of his herd.

### **Q.3 Option2**

- (b) (i) Explain why a young animal should receive colostrum in the first day of life.  
(ii) List three benefits of colostrum to the young animal.

[Marking Scheme 2011](#)

**2010**

8. (c) Highlight the main difference between the members of ... the following pair:  
(iii) *bull-beef production* and *heifer-beef production*

9. (a) The practice in abattoirs of fasting animals before slaughter **and** of allowing the carcasses to hang for some days before sale

[Marking Scheme2010](#)

**2008**

5. (c) Two criteria used to measure the breeding management of a suckler herd are;  
(i) reproductive efficiency, (ii) calving interval.  
Explain the above terms and outline how they can be optimised in a spring-calving suckler herd.

6. (a) Account for the different nutrient compositions of a dairy ration and a beef ration.

[Marking Scheme2008](#)

**2007**

6. (b) In a beef suckler system, describe the management practices necessary to achieve high levels of production.

9. Give a scientific explanation for ... the following:

- (c) Feeding bought-in calves only water and glucose for the first 24 hours on arrival on a farm.

[Marking Scheme2007](#)

**2006**

6. (c) Suckler cows can be fed for maintenance for much of the time but they must be fed on a higher plane of nutrition for 6-7 months of the year.

- (i) Explain the underlined term.
- (ii) Give **three** reasons for the “higher plane of nutrition”.

8. (a) (i) Describe **three** ways by which the health of a calf is influenced by its intake of colostrum after birth.
- (ii) Describe **two** environmental factors that need to be considered when housing farm animals.

[Marking Scheme2006](#)

### **2005**

1. (f) List the target weights for the efficient production of spring-born beef animals at the following stages of growth:
- (i) at housing for the first winter,
  - (ii) at the start of grazing for the second summer,
  - (iii) at slaughter at 24 months.
- (i) Give two reasons why most animals reared for beef in Ireland are steers (i.e. castrated males) and not bulls.

#### Option Two

3. (b) Write notes on the condition called bloat in a ruminant animal.
- (c) List **three** factors that determine the protein requirements of a farm animal.
6. (a) Write notes on the “leader-follower” grazing system when used in a calf to beef enterprise.

[Marking Scheme2005](#)

### **2004**

#### Option Two

3. (a) Write brief notes in each of the following:
- (i) Condition-scoring of farm animals.
  - (b) Compare the food requirements of a calf with that of an adult ruminant.
6. (b) Describe a beef suckler enterprise under the following headings:
- (i) breeding programme
  - (ii) feeding programme.
- (c) Describe the characteristics used when selecting female breeding stock for a **named** farm animal.

[Marking Scheme2004](#)

### **2003**

#### Option One

3. (c) Write brief notes on ... the following:  
(i) Importance of good body reserves in a cow at the time of calving

#### Option Two

3. (a) Explain how (1) grass yield and (2) stocking rate influence production in a summer grazing beef system.
- (b) Describe with the aid of labelled diagrams why a farmer would use rotational grazing instead of set-stocking in a beef rearing enterprise.
8. (c) Explain ... the following:  
(1) Performance testing of beef bulls

[Marking\\_Scheme2003](#)

### **2002**

5. (c) Describe the management facilities necessary to maximise the growth rate of beef weanlings when housed indoors during their first winter.

[Marking\\_Scheme2002](#)

### **2001**

5. (c) Discuss the rearing of a spring-born calf out on grass under the following headings:  
(i) disease control,  
(ii) growth rate,  
(iii) feeding principles.
6. (a) Outline the features of a well-managed two-year "calf-to-beef" system.
- (b) Describe the precautions necessary to minimise the mortality rate of cows at the time of calving.
9. Give a scientific explanation for ... the following:  
(a) The presence of a red colour in the urine of a bovine animal.

[Marking\\_Scheme2001](#)

### **2000**

1. (g) Explain what is meant by condition scoring of cows.

## Option Two

3. (a) Write notes on ... the following:  
(i) the principal factors which contribute to calf mortality on a farm.

### **1999**

5. (a) Explain how the systems of housing and feeding spring born calves may change between the first and second over-wintering periods.
- (b) Describe, with the aid of a simple diagram, the variation in the conformation characteristics of named breeds of beef and dairy cows.
6. (a) Explain why a rotational grazing system may be more productive than a set-stocking system in a beef rearing enterprise.

### **1998**

4. (c) Describe how good management influences the growth and development of individual animals in a beef herd.
9. Give a scientific explanation for ... the following:  
(d) Feeding 'beastings' to a calf after birth.

### **1997**

1. (j) Mention three housing requirements of a new born calf.
6. (a) Discuss the rearing of either replacement heifers or beef cattle under each of the following headings:  
(i) Selection of suitable calves  
(ii) Housing and feeding of weanlings  
(iii) Mean liveweight gain over the two-year period from birth.
- (b) Describe the various grazing management methods which might be used in a beef cattle enterprise.

### **1996**

6. In relation to a named farm enterprise with which you are familiar:-  
(a) describe the nature and extent of the production unit.
- (b) outline a strategy you would recommend for the following:-  
(i) Management;  
(ii) Feeding.

8. (b) Outline a suitable breeding and replacement programme for a dry stock beef enterprise with which you are familiar.

**2011 Marking Scheme**

Q.3

**Option 1**

A. Summer grazing; involves using all the grazing to finish cattle/ no hay or silage saved/little labour required/no housing/little or no concentrates/low cost (one point only for cost comparison) Winter fattening; most of grass is made into silage/ housing required /meal feeding needed/high labour requirement (at least one point from each)

4 x4 Marks

C. i. FCE; how efficiently an animal converts food consumed into weight gained/food to flesh/can be expressed as ratio e.g. pigs 1.75-3.25:1 cattle/sheep 8:1, poultry 2:1 4+ 4 Marks

ii. Body tissues develop in order/nerve-bone-muscle-fat/fat deposition increases with age/eg 24 months in cattle/depends on breed/the younger the animal the less fat it forms and more lean/fat less efficiently produced

4 Marks

iii. Improve FCE; changing high quality diet/increase concentrates/less roughage/buy in new animals/breeding/disease control/housing /high temperature for pigs 4 Marks

**Q. 3 Option 2:**

B. i Colostrum; /intestine changes after 24 hours/antibodies absorbed 2 Marks

(ii) Nutritious/laxative/good start in life/antibodies/immunity/warming/easily digested 8+3+3 Marks

**2010 Marking Scheme**

8. (c) (iii) BULL BEEF

male animals only/ reared without castration/ to about 16 months/ better growth rates/ because of testosterone/ high quality feed needed (barley beef)/ small market here (meat is strong)/ 1-1.25kg gain per day after weaning/ dangerous/ can breed with heifers

HEIFER BEEF

preferred by consumer/ heifers are smaller/ don't kill out as well as male/ take longer to mature/ heifer calves are cheaper than bull calves/ 0.6-0.7kg gain per day 2 (2m+2m)

9. (a) full gut (rumen) at slaughter/ increases meat hygiene risk/ E. coli risk on meat/ sugar (glycogen) in muscles turns to lactic acid/ especially if animals are stressed/ results in poor quality meat

Hanging carcass allows blood to drain/ enzymes/ break down tough fibres in meat/ better quality meat

3 (4m)

At least one reference each to fasting and hanging

### 2008 Marking Scheme

5. (c) (i) number of calves weaned per 100 cows served 3m  
Cows well fed before mating/ care at calving/ heat detection/ cull old cows 3m + 2m  
(ii) time elapsing between successive calvings 3m  
Accurate heat detection/ target of 12 months/ good condition at mating/  
feeding after calving 3m + 2m
6. (a) dairy ration – more protein/ cow in calf or producing milk  
More Ca/ prevent milk fever; more Mg/ prevent grass tetany (**any one difference  
+ explanation**) 6m + 6m

### 2007 Marking Scheme

6. (c) (i) examining animal by hand/ to assess the amount of fat cover under skin/  
score range 6m  
(ii) higher bcs gives greater yield 3m  
(iii) 1.74 3m  
(iv) age of cow/ breed/ genetics/ stage of lactation/ stage of milking 2 (3m)
9. (c) animals stressed after transport/ rehydration/ glucose for energy/ prevent scour/  
Weaning on to food 6m + 3m + 3m

### 2006 Marking Scheme

6. (c) (i) amount of food that allows cows maintain constant body weight (or condition) 3m  
(ii) good condition at mating/ development of calf/ milk production/  
prevention of disease/ development of udder **any three** 3 (3m)
8. (a) (i) antibodies/ disease resistance/ nutrients/ laxative **any three** 4m + 3m + 2m  
(ii) adequate space/ ventilation/ heat/ waste disposal/ water/ slats or  
straw/ hygienic conditions/ etc. **any two** 4m + 2m

### 2005 Marking Scheme

1. (f) (i) 200 – 220 kg  
(ii) 280 – 320 kg  
(iii) 550 – 700 kg 3m + 3m + 4m
- (i) bulls dangerous/ difficult to manage (more costly to fence in)/  
may serve heifers **any two** 4m + 6m

Option Two

3. (b) early grass (or leguminous crops) fed to animal/ large quantities of gas produced/ normal elimination of gas reduced/ rumen becomes inflated/ normal elimination of gas reduced/ rumen becomes inflated/ pressure on lungs and heart/ may result in death/ correct treatment **any three** 6m + 2 (3m)
- (c) species/ age/ milk or beef (production targets)/ male or female/ pregnancy/ lactation/ health **any three** 6m + 2 (3m)
6. (a) calves and weanlings first into paddock/ yearlings follow/ two year olds follow/ calves are selective grazers on young grass/ better use of grass/ level of parasitic worm infestation reduced **any four** 2 (3m) + 2 (6m)

**2004 Marking Scheme**

Option Two

3. (a) (i) good fat:lean ratio/ scale 0-5 cows and sheep/ 0=thin 5=fat/ sows 0-9/ feel along backbone to indicate fat. **any two** 2 (4m)
- (ii) **ratio of food to weight gain/ cost efficiency/ target ratio/** affected by breed/ health/ management/ housing/ diet **(one of first three compulsory + any other point)** **any two** 2 (4m)

(b)

<b>calf</b>	<b>adult</b>
milk/	
colustrums	
hay pencils	grass (hay, silage)
more protein	less protein
ration	cellulose
bacteria for rumen (probiotics)	high quality high dmd
minerals	minerals
vitamins	no vitamin additives

**any four comparisons** 4 (4m)

6. (b) (i) specified sire qualities/ specified dam qualities/ breed/ time of mating or spring calving **any three** 3m + 3m + 2m
- (ii) calf with cow (or suckle)/ colustrum/ grass/ good quality silage/

meals or creep feed **any three** 3m + 3m + 2m

(c) name

teeth/ feet/ mouth/ breed/ pedigree/ age/ udder/ no discharges/ healthy/  
condition score/ conformation etc. [allow one point only under each  
heading of conformation and condition scoring]

**any five** 5 (3m)

### **2003 Marking Scheme**

Option One

3. (c) (i) for energy/ for lactation/ to produce colostrum/ for development of calf/  
to prevent illness or death of cow (or calf)/ "milking off her back"

**any three** 3m + 3m + 2m

Option Two

3. (a) (1) greater yield gives greater production/ high quality grass produces  
maximum LWG/ higher dry matter yield from high value crop

**any two** 2 (4m)

(2) under-stocking leaves grass uneaten (wasted)/ more stemmy growth/  
more stemmy growth/ correct stocking rate/ livestock unit per area/  
increased stocking rate in summer/ overstocking leads to overgrazing/  
little growth overall/ weakens desirable species/ encourages rosette type  
weeds/ decreases production

**any two** 2 (4m)

3. (b) short leafy grass (vegetative stage)/ palatable/ very digestible/ rotation of  
stock around a series of grazing areas/ makes best use of this grass/  
parasite control

**diagram of strip/ paddock** 0m, 3m, 5m

3 points = 6m + 3m + 2m

8. (c) (1) Performance testing = keeping records of the animal's individual  
performance/ growth rate/ efficiency at converting feed/ comparing  
with records of other animals/ kept under similar conditions

(3m + 3m + 2m)

### **2002 Marking Scheme**

5. (c) *Beef weanlings housed indoors during their first winter*

Housed in open sheds bedded with straw or slatted house/ well ventilated/ draft free/  
not be over-crowded – animals with a minimum of 1.4m<sup>2</sup> of floor space/ and 7m<sup>3</sup> of air  
space per animal/ good silage quality made of young leafy grass with a high DMD value/  
e.g. silage with a DMD value of 73% gives a daily weight gain of 0.6kg (280kg by the  
end of the winter)/ supplement with meals where silage is poor/ ant health issue –  
dosing for worms, spray for lice or ectoparasites/ other valid point

4 (4m)

### **2001 Marking Scheme**

5. (c) (i) Disease control – colostrum is a natural form of immunity/ graze on fresh



	pastures/ head of older cattle less chance of infestation	5m
(ii)	Growth rate – born at 40kg/ grass at 80kg/ growth at a fast rate/ reasonable size to be housed in Autumn or sold	5m
(iii)	Feeding principles – mothers milk for colostrum / whole milk/ milk replacer/ hay or grass to help develop rumen/ fresh grass or hay/ creep feed	3m + 3m
6. (a)	<u>First summer</u> – 80kg/ leader follower system/ disease protection e.g. fluke	2m + 2m
	<u>First winter</u> – 200kg/ housed in open sheds or slatted house/ well ventilated/ fed high quality silage, if hay feed meal also/ disease control	2m + 2m
	<u>Second summer</u> – 280kg going out/ yearling/ rotation on good quality grass, not the pick of the grass/ dosed for lice, stomach worms, hoose.	2m + 2m
	<u>Second winter</u> – 460kg at start/ fed meals and good quality silage/ factory weight of 500kg	2m + 2m
(b)	Isolate cow 1-2 days before calving/ inspect regularly/ experienced person at hand/ assistance/ vet if needed/ calf not too big for heifer – selective breeding/ reduce feeding for last 2 months/ choice of bull/ cow in good condition	<b>any</b> 4 (4m)
9. (a)	Babesiasis (Babesia bvis), / parasite spread by common tick/ destroys RBC's <b>red water fever</b>	2 (6m) <b>6m only</b>