

## Leaving Certificate Higher Level Beef Production Questions

### 2012

1. (e) Roughage must be included in the diet of a calf.
  - (i) Suggest a reason for including roughage.
  - (ii) When is roughage introduced?
  - (iii) Name a suitable food that could be used as roughage.
  
6. (a) (i) Construct the typical growth curve graph for the two-year 'calf-to-beef' production system.
  - (ii) On your graph show clearly:
    1. Target weights at first winter housing **and** second winter housing.
    2. Where compensatory growth begins.
  - (iii) Suggest a suitable diet for the beef cattle in the first **and** second winter.

[Marking Scheme2012](#)

### 2011

Option One

3. (a) Compare summer grazing and winter fattening as systems for finishing beef animals.

[Marking Scheme2011](#)

### 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.

**2012 Marking Scheme**

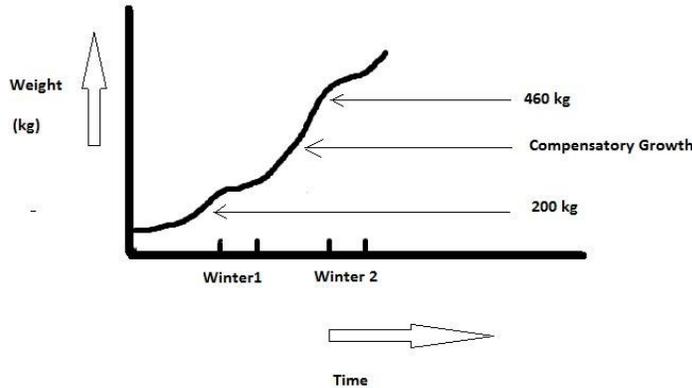
1. (e) (i) To develop rumen/ scratch factor  
 (ii) After 7 days  
 (iii) Hay/straw/haylage

4m+3m+3m

6. (a) (i) Growth Curve:  
 Labelled axes  
 Growth curve

2 x 2m

6, 3, 0m



- (ii) 1. First winter housing: 200kg (190-210kg)  
 Second winter housing: 460kg (450-470kg)  
 2. Compensatory growth (all shown on graph)

3 x 2m

- (iii) 1<sup>st</sup> winter: (Good quality) silage and concentrates  
 2<sup>nd</sup> winter: (Good quality) silage and concentrates

2 x 2m

**2011 Marking Scheme**

Option One

3. (a) Summer grazing; involves sing all the grazing to finish cattle/ no hay or silage saved/  
 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 x 4m

**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)/ colostrum/ 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) First summer – 80kg/ leader follower system/ disease protection e.g. fluke 2m + 2m  
First winter – 200kg/ housed in open sheds or slatted house/ well ventilated/ fed  
high quality silage, if hay feed meal also/ disease control 2m + 2m  
Second summer – 280kg going out/ yearling/ rotation on good quality grass, not the  
pick of the grass/ dosed for lice, stomach worms, hoose. 2m + 2m  
Second winter – 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 **any** 4 (4m)
9. (a) Babesiosis (*Babesia bovis*), / parasite spread by common tick/ destroys RBC's  
**red water fever** 2 (6m)  
**6m only**