

The Royal College of Veterinary Surgeons

**DIPLOMA EXAMINATION IN SHEEP HEALTH AND PRODUCTION**

**PAPER I**

**Wednesday 21 August 1996**

10.00 a.m. to 1.00 p.m.  
(3 hours)

*This Paper is in two Sections (A and B) and instructions relating to the number of questions to be answered are given at the head of each Section.*

**SECTION A**

*Answer TWO of the following FOUR questions.  
(Allow approximately 1½ hours)*

*If insufficient time is available to answer a question fully, it will be acceptable to complete in note form.*

**Candidates are warned that illegible handwriting may result in examiners being unable to award marks for information which candidates intended to convey**

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1. The development of anthelmintic resistance by sheep nematodes has stimulated the study of alternative methods for the control of parasitic gastro-enteritis, avoiding the use of drugs. Describe some of these methods and outline the advice you would give to a biotechnology company wishing to invest in research and development in this area, with a view to marketing a 'product' in 10 years' time.
2. Discuss in detail the nutritional requirements of a flock of housed lowland ewes during late pregnancy. Suggest rations based on (a) straw **and** (b) silage as the forage component, indicating the reasons for your recommendations. (Any assumptions should be clearly stated).
3. *"We therefore recommend that farmers, having considered carefully if both mutilations are necessary (castration and tail docking of lambs), should adopt timing and methods which, when combined, lead to the minimum of extra distress to the animal".*

Farm Animal Welfare Council  
Report on the Welfare of Sheep, April 1994

Comment on this statement as it affects both upland and lowland sheep.

How do you rank the welfare problems associated with these mutilations compared with others affecting the sheep industry?

4. A pedigree Suffolk flock lambing in January is experiencing difficulties with virulent footrot in adult ewes and shearling rams. The disease is posing welfare and management problems and is affecting the sale of shearlings at the Autumn sales.

Describe how you would investigate the problem and discuss the control procedures you might employ.

What factors would influence your advice regarding eradication of footrot from the flock?

**p.t.o for Section B**

The Royal College of Veterinary Surgeons

**DIPLOMA EXAMINATION IN SHEEP HEALTH AND PRODUCTION**

**PAPER I**

**Wednesday 21 August 1996**

10.00 a.m. to 1.00 p.m.  
(3 hours)

**SECTION B**

***ALL TEN questions to be answered  
(Allow approximately 1½ hours)***

***If insufficient time is available to answer a question fully, it will be acceptable to complete in note form.***

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1. Write short notes on freemartinism in sheep.
  2. "Live exports of sheep for slaughter should be banned". Comment on this statement.
  3. Describe the main characteristics of milking sheep systems in the U.K.
  4. **List** the causes of down-grading of wool and indicate how they may be avoided.
  5. What are your views on the use of dry-ewe therapy in the control of mastitis.
  6. **List** the most important enzymes which may be used in the diagnosis of ovine diseases, giving an example of a condition for each enzyme mentioned.
  7. Write **short notes** on the causes of infertility in rams in Britain.
  8. Describe the latest thinking on the prevention of urolithiasis in male lambs.
  9. **Briefly** describe a lamb finishing system based on root crops.
  10. Why is a specific diagnosis obtained in only half the sheep abortion incidents submitted to the Veterinary Investigation Services and what are the prospects for improvement in diagnosis?

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The Royal College of Veterinary Surgeons

**DIPLOMA EXAMINATION IN SHEEP HEALTH AND PRODUCTION**

**PAPER II**

**Wednesday 21 August 1996**

2.00 p.m. to 5.00 p.m.  
(3 hours)

***Answer FIVE of the following SIX questions***

***If insufficient time is available to answer a question fully, it will be acceptable to complete in note form.***

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1. Explain why genetic progress in the U.K. sheep industry has been limited compared with the cattle or pig industries. How might new approaches to breeding be employed to speed up the rate of progress?
  2. Describe the methods used to control blowfly strike in Britain and indicate how studies on the ecology of the sheep blowfly, *Lucilia sericata* have suggested improved methods of control.
  3. A flockmaster complains of a number of sick sheep showing neurological signs in the second half of pregnancy.  
  
Discuss the differential diagnosis and outline the possibilities for the treatment and prevention of each.
  4. You are the veterinary advisor to a grant awarding body whose income comes from a levy on the annual ewe premium and you have a total sum of £500,000 to spend on two projects, each of three years' duration. Describe the two areas of research on which you would seek proposals, indicating the reasons behind your choices. Outline the possible plans of research and the outcomes you hope to achieve.
  5. Write an essay on embryo mortality in sheep.
  6. Discuss the role of subsidies in hill sheep farming, explaining the possible impact of recent changes in support on the structure of the industry and the management practices employed.

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PAPER I

The Royal College of Veterinary Surgeons

**DIPLOMA EXAMINATION IN SHEEP HEALTH AND PRODUCTION**

**Thursday 1 September 1994**

**10.00 a.m. to 1.00 p.m.**

**(3 hours)**

*This Paper is in two Sections (A and B) and instructions relating to the number of questions to be answered are given at the head of each Section.*

**SECTION A**

*Answer TWO of the following FOUR questions.  
(Allow approximately 1 1/2 hours)*

*If insufficient time is available to answer a question fully, it will be acceptable to complete in note form.*

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1. Discuss the current and potential impact of new breeding technologies (AI, embryo transfer etc.) on the British sheep industry. Comment on the problems associated with such techniques and indicate areas for future research.
2. *"Peste des petits ruminants seen in South East Scotland"*. How likely do you think this headline will be seen in the next ten years?
3. The pathogenesis of pregnancy toxemia is still largely a mystery! Discuss this statement.
4. Describe the parasitological principles underlying the East of Scotland College of Agriculture's 'Clean—grazing system' and indicate why breakdowns are likely to occur.

**p.t.o for Section B**



The Royal College of Veterinary Surgeons

**DIPLOMA EXAMINATION IN SHEEP HEALTH AND PRODUCTION**

**PAPER II**

**Thursday 1 September 1994**

**2.00 p.m. to 5.00 p.m.**

**(3 hours)**

***Answer FIVE of the following SIX questions***

***If insufficient time is available to answer a question fully, it will be acceptable to complete in note form.***

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1. 'Watery—mouth' is presently prevented in many intensive lowland flocks by the blanket use of antibiotics. If such therapy were to be 'outlawed', what possible consequences might follow? How might any resulting problems be tackled?
2. Extensification i.e. a lowering of stocking rate, in hill sheep farming is being promoted to reduce overgrazing. What might the implications of this be for stock health and how might any deleterious effects be overcome?
3. Sheep farmers show very little interest in enzootic abortion of ewes until they encounter this problem in their own flock. If you were employed by MAFF (or an equivalent body in Scotland) to overcome this problem, what would you do? You can assume reasonable financial resources i.e. £100,000 p.a. for 5 years.
4. The Chief Veterinary Officer is recently reported in the '*Veterinary Record*' as saying that 'those who suggest that farmed livestock should be slaughtered as near as possible to their farm of origin, are not working in a real world'. Discuss.
5. "Castration of lambs is an unjustifiable mutilation and should never be undertaken". Discuss.
6. Compare and contrast the use of progestagen sponges plus PMSG with melatonin Implants for advancing the breeding season of the ewe, outlining the modes of action of each.

The Royal College of Veterinary Surgeons  
Part II (Diploma) Examination in Sheep Health and Production

PAPER I

Thursday 3 October 1991  
10.00 a.m. to 1.00 p.m.  
(3 hours)

This Paper is in two Sections (A and B) and instructions relating to the number of questions to be answered are given at the head of each Section.

SECTION A

Candidates are warned that illegible handwriting may result in examiners being unable to award marks for information which candidates intended to convey

Answer TWO of the following four questions  
(Allow approximately 1½ hours)

1. The consequences of intrauterine infection depends on the stage of immunological competence reached by the foetus.

Discuss this statement with particular reference to infection with Border Disease Virus, and Toxoplasma gondii.

2. Evaluate critically the evidence for anthelmintic drug resistance in sheep flocks in Britain, indicating its importance now and its possible importance in the future.

Discuss the methods you would recommend to reduce the rapidity with which anthelmintic resistance may spread throughout the country.

p.t.o.  
for questions 3 and 4

3. The transfer of the Sheep and Goat Health Scheme to the private sector, together with the removal of MAFF financial support at a time of recession, has placed a question mark against the survival of the scheme.

Give details of the programme you would provide to the industry to ensure the survival of the scheme.

The Enzootic Abortion of Ewes option has largely failed. Why is this?

4. A Client proposes spending £25,000 on the establishment of a new flock, and intends investing in Draft Scottish Black Face or two tooth North Country Mules.

The Client is requesting a detailed costing for the two alternatives together with projected return on working capital.

Detail your presentation.

The Royal College of Veterinary Surgeons  
Part II (Diploma) Examination in Sheep Health and Production

PAPER I

Thursday 3 October 1991  
10.00 a.m. to 1.00 p.m.  
(3 hours)

SECTION B

All TEN questions to be answered.  
(in approximately 1½ hours)

Candidates are warned that illegible handwriting may result in examiners being unable to award marks for information which candidates intended to convey

6. Describe the technique of synchronised parturition, and indicate the expected response and benefits.
7. Discuss "away-Wintering" of ewes during tupping and the first half of pregnancy.
8. Write short notes on the epidemiology and control of coccidiosis in lambs.
9. What agents may be involved in ovine kerato-conjunctivitis and how may this knowledge influence the success of treatment of affected sheep?
10. Comment on the role of ultrasonic scanning and laparoscopy in the selection of superior sires.
11. Erysipelas is now much more significant than simple "dipping lameness". Why should this be and how would you control an outbreak?

p.t.o. for questions 12, 13, 14, and 15

12. Recent evidence suggests that there may be residual loss of production extending to more than one generation in ewes which have been exposed to high copper intakes which have not precipitated a haemolytic crisis.

Can you suggest a mechanism for this?

13. What is the importance of infestation of sheep with Ixodes ricinus? Outline the methods available for the control of tick borne diseases.

14. "The use of Melatonin will supersede the use of "sponges plus PMSG". Comment on this statement.

15. EEC regulations on intercommunity trade indicate that an individual nation may specify an area or region as being free from specific diseases.

List those conditions for which the UK could make use of this rule to control disease.

The Royal College of Veterinary Surgeons  
Part II (Diploma) Examination in Sheep Health and Production

PAPER II

Thursday 3 October 1991  
2.00 p.m. to 5.00 p.m.  
(3 hours)

Answer FIVE of the following SIX questions.

Candidates are warned that illegible handwriting may result in examiners being unable to award marks for information which candidates intended to convey

1. Write an essay on "watery-mouth" in lambs.
2. Johnes disease is an increasing cause of concern to the UK sheep industry. Why is this? Detail the problems of diagnosis. Outline recent new laboratory techniques which may improve diagnosis.
3. Discuss the factors which may be of significance in causing a high incidence of cervico-vaginal prolapse in ewes. How would you influence these, and what is your preferred method of treatment?
4. "No sheep shall be subjected to a single journey of more than five hours or two hundred miles"!  
  
Discuss the probable effects of such a regulation on the structure and economics of the UK Sheep industry.
5. The haphazard use of continental breeds in upland and lowland flocks has significantly contributed to mongrelisation within these flocks. Discuss the consequences of this trend.
6. Discuss the effects of under-nutrition in the pregnant ewe, but excluding the major metabolic diseases.

The Royal College of Veterinary Surgeons  
Part II (Diploma) Examination in Sheep Health and Production

PAPER I      Thursday 4 October 1990

10.00a.m to 1.00 p.m.  
(3 hours)

This Paper is in two Sections (A and B) and instructions relating to the number of questions to be answered are given at the head of each Section.

SECTION A

Candidates are warned that illegible handwriting may result in examiners being unable to award marks for information which candidates intended to convey

Answer TWO of the following four questions  
(Allow approximately 1½ hours)

1. Describe the consequences of increases in stocking rates on lowland sheep farms over the last decade.

Discuss the problems associated with further increases in this criterion for assessing economic performance.

2. As Director of a research institute you have to allocate funds to produce either:

(a) A 50% reduction in ewe depreciation costs, or

(b) A 10% increase in lamb growth rates.

Indicate the choice you would make, supported by economic argument.

Indicate the lines of enquiry you would suggest to your staff for their work on that choice, and suggest a possible time scale for a full evaluation of those lines of enquiry.

p.t.o. for questions 3 and 4

3. 1992 will see the Single Market in the E.E.C., including a drastic reduction in disease monitoring at frontiers.

Discuss what effect this may have on disease control in the U.K., and what disease conditions you suppose could be added to our disease pattern.

4. In the interest of both animal husbandry AND national economics the Hill Livestock Compensatory Allowance should be terminated.

Discuss this statement.

The Royal College of Veterinary Surgeons  
Part II (Diploma) Examination in Sheep Health and Production  
PAPER I Thursday 4 October 1990  
10.00 a.m. to 1.00 p.m.  
(3 hours)

SECTION B  
All TEN questions to be answered.  
(in approximately 1½ hours)

Candidates are warned that illegible handwriting may result in examiners being unable to award marks for information which candidates intended to convey

6. Comment on the use of 'fine wool' breeds in the British Sheep Industry.
7. Assess the use of 'flat rate feeding' of ewes in pregnancy.
8. Outline the precise sequence of events which follows the introduction of a vasectomised ram to a flock of ewes in late anoestrus.
9. List the causes of scouring in young lambs from birth to six weeks of age.  
  
Outline the methods you would recommend for their prevention and the degree of success you would reasonably expect.
10. Describe the major zoonoses of sheep in the approximate order of incidence / significance.
11. Which plants are of significance as poisons in the U.K. Sheep Industry?

Indicate the clinical signs in each case.

p.t.o. for questions 12, 13, 14, and 15

12. Gross margin per ewe  
Return on total capital  
Gross margin per lamb  
Gross margin per hectare  
Return on working capital  
Gross margin per 100Kg of utilised ewe  
Lambs sold / 100 ewes put to the tup  
Gross output per ewe  
Gross margin on enterprise

Indicate which of these you consider to be, (a) good indicators, (b) poor indicators of the economic performance of an enterprise.

13. An eminent member of the Sheep Veterinary Society recently listed the major welfare concerns of sheep as "Lameness, Lameness, and Lameness". Is this a valid statement? What other welfare factors did he omit?
14. Comment on the statement "Barren ewes are a result of failure to breed, NOT of infertility".
15. Comment on the possibility of producing a more even distribution of U.K. "prime Lamb" marketing by late, as opposed to early, lambing.

The Royal College of Veterinary Surgeons  
Part II (Diploma) Examination in Sheep Health and Production  
PAPER II Thursday 4 October 1990  
2,00 p.m. to 5.00 p.m.  
(3 hours)

Answer FIVE of the following SIX questions.

Candidates are warned that illegible handwriting may result in examiners being unable to award marks for information which candidates intended to convey

1. Describe the biochemical changes which underlie the three 'metabolic disorders' pregnancy toxæmia, hypocalcaemia, and hypomagnesaemia of ewes. Indicate how you would differentiate these conditions in a sheep with suggestive neurological signs.

Outline your treatment for the three conditions.

2. List the infections which may be transmitted from Border Collie dogs to:
  - (a) sheep
  - (b) shepherds

Outline a health programme for the breeding dogs of a hill shepherd who travels widely as a top sheep dog trialist.

3. Describe a programme for the control of gastro-intestinal parasitism under 'dirty grazing' conditions.

Your programme should offer some hope of both short and long term benefit to the unit.

4. The proportion of ewe lambs retained for breeding which have been put to the ram in their first Autumn has increased in recent years. Discuss the advantages and disadvantages of this development, and draft an advisory circular highlighting the areas requiring particular care and attention.

5. Sire Reference Schemes are seen by many as the key to the improvement of performance.

How will this benefit the industry at the commercial level?

6. Discuss the epidemiology and neuro histo—pathology of Scrapie including the genetics of susceptibility. How do you visualise the future pattern of control/eradication?

**THE ROYAL COLLEGE OF VETERINARY SURGEONS**

**PART II (DIPLOMA) IN SHEEP HEALTH AND PRODUCTION EXAMINATION**

**PAPER I**

(Basic Sciences)

Thursday 6 October 1988

10.00 a.m. to 1 p.m. (3 hours)

**SECTION A**

Long-answer questions.

Answer one question only, allow approximately one and half hours

1. Selection of stock of superior genetic merit is hindered in this country by the entrenched attitudes of traditional sheep farmers.

Discuss in relation to the M.L.C. Scheme/Group Breeding Schemes and the possibility of speeding up the process by new technology.

2. Discuss in detail the nutritional requirements of housed 75Kg. ewes (scanned at 180% lambing rate) during late pregnancy and early lactation. Include alternative formulations to meet these requirements. Comment on the limitations of a 'cheapest is best' feed buying policy on the part of the owner.

**SECTION B**

Ten short-answer questions to be answered  
in approximately one and half hours

3. Comment on the limitations of silage as a basal diet for pregnant ewes.

Give minimum nutritional values of a silage sample suitable for a prolific flock.

4. Outline, in diagram form, the hormonal controls of the oestrous cycle in the ewe.

Indicate those which are open to manipulation on a commercially viable basis.

5. Comment on the varying response of sheep to the major serotypes of Salmonella in the field. Give examples.

6. The immune response to Contagious Pustular Dermatitis is not fully understood. Comment on the limitations this places on the development of a better vaccine.

P.T.O for questions 7, 8, 9, 10, 11 and 12.

PAPER I (continued) (Basic Sciences)

7. Outline the advantages of using 'complete feeds' for intensive lamb fattening.  
Include expected growth rates and gross margins for the finishing period.
8. Describe the mode of action of Levamisole/Benzimidazoles/Ivermectins. At what stage in the parasite control sequence would each be the drug of choice?
9. What metabolic pathways are affected in Cobalt deficiency? How can this information be used in the diagnosis of Cobalt Pine? What corrective therapy do you normally advise?
10. Comment on the value of the 'gross margin as an indicator of profitability and return on capital.
11. Define the relationship between Micron width and Bradford count. What range of measurement would you expect for:
  - a. Superfine Merino
  - b. Fine Down Breeds
  - c. Herdwick

For what uses would these wools be suitable?

12. 'Deviation from normal tissue values'  
'Response to therapy'  
'Deviation from normal tissue values plus evidence of diseases'

All three statements have been used as being valid indicators of nutritional deficiency.

Place them in order of significance with reasons.

**THE ROYAL COLLEGE OF VETERINARY SURGEONS**

**PART II (DIPLOMA) IN  
SHEEP HEALTH AND PRODUCTION EXAMINATION**

**PAPER II**  
(Clinical Aspects)

Thursday 6 October 1988  
2 p.m. to 5.00 p.m. (3 hours)  
Answer 5 questions out of 6

1. Political pressure may soon be exerted to prohibit routine three-weekly worm drenching as a preventive measure. How significant would this be?  
  
Outline an alternative strategy for parasite control where no clean pasture is available.
2. A post-mortem examination should not be carried out on a sheep carcase without examination of the brain. Discuss.  
  
Describe the aetiology; clinical signs; diagnosis; and differential diagnosis of Cerebrocortical Necrosis in the sheep.  
  
What advice would you give to a farmer with a perennial problem with this condition in his flock?
3. Frequent lambing systems have not been shown to be economically viable in the U.K.  
  
Discuss this statement with evidence.
4. Outline alternative management strategies for dairy ewes during the first three months of lactation together with the economic justification of each method.
5. A client has several 'hairy shaker' lambs from home-bred ewes six months after the purchase of additional four tooth ewes. On enquiry, it emerges that there have been some mummified lambs.  
  
Discuss the differential diagnosis of this episode.  
  
What should the client do to control further losses and outline a possible eradication programme.
6. Disease mortality (expressed as a percentage of total population annually) has been quoted as 17% for the sheep industry; 8% for the cattle industry and 5% for the pig industry. Why is this?  
  
What possibilities are there for an improvement in the sheep figures within economic and environmental limitations?