

The Royal College of Veterinary Surgeons
Specialisation and Further Education

THE DIPLOMA IN SHEEP HEALTH & PRODUCTION

SPECIFIC GUIDANCE NOTES FOR CANDIDATES

[These notes must be read in conjunction with the B1 General Guidance Notes to Candidates]

MEMBERSHIP OF THE ROYAL COLLEGE OF VETERINARY SURGEONS

1. It is a requirement of the Sheep Health & Production Board that ALL Candidates entering for the Diploma in Sheep Health and Production are Members of the Royal College of Veterinary Surgeons (MRCVS).

AIMS

2. The standard of this examination will be high and will prove a tough hurdle totally different in concept from the relatively straightforward Certificate examination. Candidates will need to engage in extensive private studies. Anyone contemplating enrolment should realise that it will entail organising their personal workload so that they can take time off to study, either on a regular basis each week, or for short periods throughout the year. This applies particularly to candidates in general practice.

SPECIFIC EXPERIENCE

3. Candidates must have spent periods of time, as defined in paras. 4 & 8 below, by the time of the examination, having substantial involvement in the field of sheep health and production.
4. '*Substantial involvement*' is defined as **at least 30 hours per week** dealing with and advising on sheep disease, health and production, visits to farms for this purpose, diagnostic work, epidemiological investigations, research, literature reviews, preparation of reports, papers and articles and time spent in related activities. The Board would expect that a candidate would be involved in a variety of these activities.
5. There is provision for a candidate to choose a subject for a dissertation to be submitted as part of the Diploma examination, and this would reflect any particular interests. Candidates will need to submit **application Form E1B** for approval of the proposed subject of the dissertation **at the time of enrolment**. Candidates are asked, when proposing a subject, to give an outline showing clearly what the dissertation will cover and how much of the work will be undertaken by the candidate personally.
6. It would be rare for the Diploma examination to be taken four years after graduation (the minimum time possible). Rather, it would normally be taken some four to five years from the time when the candidate began to become involved full-time in the field concerned—and this would probably have been two or three years (or more) after graduation.

Approved Centre Route

7. There is no approved centre route for the Certificate or Diploma in Sheep Health and Production.

Approved Practice Route

8. Candidates following the approved practice route will not be permitted to enter for the examination until they have been Members of the College or held an approved veterinary qualification for **at least five years** and are required to offer experience in the subject over **at least six years**.
9. **There is no separate application form for practice approval other than the candidate applications forms enclosed within this Information Pack. Practices are approved for each individual candidate.**
10. The Board has discretion to increase the requirements for experience for any candidate above the minimum specified if it is considered to benefit the candidate.
11. Experience accepted for the Certificate will count towards the experience required for the Diploma, at the discretion of the Board.

THE EXAMINATION

12. The examination consists of three Sections:
 - (a) A Dissertation
 - (b) TWO x 3 hour written papers, and
 - (c) a clinical, oral and practical examination.

SUBMITTED WORK FOR EXAMINATION

Dissertation

13. Application Form E1B for approval of the proposed subject of the dissertation and an outline of the proposal should be submitted at the time of enrolment (see also paragraph 5).
14. Candidates are required to submit a dissertation based on **original** material and data and incorporating personal observations, on a subject to be approved beforehand by the Board. The subject may be a research project in any aspect of sheep disease and management, or the evaluation of preventive medicine or disease control schemes in which the candidate is personally involved.
15. Candidates are required to submit **three copies**. The dissertation need not be bound but should be submitted in a cover in a secure manner. One copy of the dissertations of successful candidates may be placed in the RCVS Library. Each dissertation should include a **declaration** loosely inserted into the front (please see template declaration in B1 Guidance Notes).

16. Dissertations submitted by previously successful candidates are available on request from the RCVS Library and will give an indication of the standard, content and layout expected.
17. Candidates may **not** use all or part of the work prepared and submitted for another postgraduate qualification including Diploma of Fellowship, as all or part of their dissertation for an RCVS Diploma.
18. Candidates are also asked to submit an electronic version of their submitted work together with their hard copies. This will be retained at RCVS unless requested by the examiners for purposes such as checking the word count. The electronic version should be Microsoft Office 2000 or XP compatible and should be submitted on CD. Please ensure that the disks are easily identifiable by placing them in an envelope with your name, and 'Electronic version of submitted work for the `Diploma in Sheep Health and Production` marked clearly on the front.

Word Count

18. A word count must be shown on the front cover of the Dissertation. The Dissertation must be no more than **5000 words** in length (excluding references and appendices).

Grading Scheme

19. The submitted work will be graded "Good Pass"; "Pass"; or "Fail".
 - **Good Pass**—(60% or over) - the work will be lodged in the RCVS Library as a suitable example for future candidates.
 - **Pass (defined as 50%)**—The work is adequate to enable the candidate to proceed to the remaining sections of the examination, but the submitted work may need to be revised by the date of the clinical, oral and practical for lodging in the Library if the candidate is successful in the examination as a whole.
 - **Fail (below 50%)**—the work is not adequate to enable a candidate to proceed to the remaining sections of the examination for the year in question.

WRITTEN EXAMINATION

20. Candidates are warned that answers should be given specifically and that illegible handwriting may result in examiners being unable to award marks for information which candidates intended to convey. In addition, the examiners will take into consideration spelling and whether or not the question has been answered in the form requested.

Format

21. This Section consists of 2 three-hour written papers.

Paper I—consists of six questions of which five must be answered.

Paper II— *consists of two sections. Section A (1½ hours) consists of four essay-type questions of which two must be answered. Section B (1½ hours) consists of ten compulsory short answer questions.*

Marks Scheme

Paper I will be marked out of 50 marks

Paper II will be marked out of 50 marks

Total Mark for this Section (b) = 100 marks

CLINICAL, ORAL, AND PRACTICAL EXAMINATION

Format

22. The oral examination may last up to three hours for each candidate. It may include practical and/or clinical tests and questions may be asked in relation to the dissertation submitted, and on any part of the syllabus.

Marks Scheme

23. The clinical, oral, and practical examination will be marked out of 100.

TOTAL Mark for this Section (c) = 100 marks

SYLLABUS AND READING LIST

24. A detailed syllabus is provided, and candidates are also referred to the reading list issued to Certificate candidates (candidates should note that this list was frozen in 2002 and will eventually be withdrawn). The examination will be set at a level appropriate to a veterinary surgeon who has been engaged in sheep health and production to the extent indicated above.

ADVISERS

25. Applicants are asked to select a name from the enclosed list for informal advice on their studies and preparations for the examination. The Board will put the applicant in touch with an appropriate senior colleague if required.
26. Candidates should ensure that they copy the current information documents contained within this information pack for their respective advisers, in particular, they should ensure that their adviser receives a copy of the requirements on the submitted work (B2) and the Guidance Notes to Advisers.
27. Candidates may need to take advice in relation to the requirements of the syllabus and on any experience, which they may need to obtain in respect of certain aspects of the syllabus. Such experience might be gained by spending time in a veterinary school or other appropriate institute—coupled with work in the field.

28. Candidates may also need advice on the preparation of their dissertation, including advice on the use of literature and data and the format of the dissertation.
29. Advisers may also oversee candidates' private studies, and the writing of dissertations, and the use of literature and data and the preparation of reports.

MEMBERSHIP OF VETERINARY ASSOCIATIONS/SOCIETIES

30. Enrolled candidates are encouraged to become a Member of the Sheep Veterinary Society, Secretariat, Moredun Research Institute, 408 Gilmerton Road, Edinburgh EH17 7JH (Telephone 013 1664 3262) FAX: 013 1664 8001 and the SSAB Division of the BVA and attend meetings.

ABBREVIATION FOR QUALIFICATION

31. Successful candidates are permitted to use the abbreviation "**DSHP**" after their names in the RCVS Register of Members, and on practice plate, stationery, etc. Certificate holders who obtain the Diploma in the same subject cease to use the Certificate abbreviation.

Originated November 1995

Revised February 1997/ November 1997/ November 1998/ January 2002/ January 2003/ April 2007

SYLLABUS

Candidates should have a detailed knowledge of the following and are reminded that, at all times, welfare of sheep is paramount:

1. STRUCTURE AND ECONOMICS OF THE SHEEP INDUSTRY

- International distribution of sheep
- International economic importance of sheep and pattern of world usage of sheep products
- Historic native breeds and their value
- Imported breeds
- Stratification including interdependence
- Numbers and significance of main breeds of ewes in each system
- Performance recording for pedigree and commercial flocks
 - The use of records in sheep improvement
 - Use of computers
 - MLC recording schemes
- Targets of physical production for each system and methods for assessing economics of production.
 - Relationship to other farming systems, including alternative strategies
 - Factors affecting profitability
 - Marketing of sheep including EC support structure and effect of support structure on systems of sheep production
- Grassland management including pasture improvement on hill farms and grass production on intensive lowland farms
 - Place of beef/dairy cattle in grass use, including 'clean-grazing systems
 - Hay and silage production
 - Use of forage crops
 - Dry matter outputs; utilisation percentages
- Housing of sheep
 - Basic requirements and specifications
 - Types of housing including comparative costs/benefits
 - Alternative use of housing throughout year
- Growth and development of lambs
- Carcase quality and evaluation in live and dead lambs
 - Preparation of carcasses for slaughter and consumption
- Wool production
 - Embryonic and evolutionary development
 - Wool growth
 - Wool quality - uses and breed types
 - Grading of wool
- Systems of sheep management in the U.K. and elsewhere other than prime lamb and wool production
 - Feedlots
 - Milking ewes and systems of milk production and use of milk products
- International patterns of production
- Welfare aspect of sheep systems, marketing, trade and transport
- Lairage in abattoirs and points of embarkation for export.
- Implications of the import and export of Sheep.

2. REPRODUCTION AND BREEDING

- Anatomy and physiology of female reproductive system
 - Oestrous cycle, endocrinology, seasonal anoestrus
 - Artificial control of oestrous cycle by drugs and management practices
 - Synchronisation
 - Advancing breeding season
 - Frequent lambing flocks
 - Breeding from ewe-lambs
 - Increasing fecundity
- Physiology of pregnancy, foetal development, lambing and lactation
- Pregnancy detection and enumeration of foetuses - costs/benefits
- Normal parturition, induction of parturition
- Obstetrics including Caesarian section
- Anatomy and physiology of male reproductive system
 - Endocrine events in the ram
- Ram examination, semen collection, sperm examination
- Ram use under different breeding systems.
- Preparation and use of vasectomised rams
- Artificial insemination
 - Semen collection, preparation and processing
 - Insemination procedures
 - Frozen semen
 - Cost/benefits
- Embryo transfer
 - Cloning
 - Cost/benefits
- Genetic improvements
 - Principles of genetics
 - Defining selection objectives
 - Selection for carcase quality, reproduction performance, wool performance
 - Assessment of rams by group breeding schemes

3. THE NEW-BORN LAMB

- Neonatal physiology
- Causes of neonatal mortality, including postmortem differentiation
 - Hypothermia/hypoglycaemia
 - Abortion/stillbirth
 - Infectious disease
 - Accidents, etc.
 - Congenital defects
- Mothering problems; rearing ability
- Recording systems for lamb mortality
- Alleviation of major conditions
- Artificial rearing

4. NUTRITION

- Anatomy and physiology of the alimentary tract including teeth
- Modern systems of assessing foodstuffs, ME, protein, mineral, fat, fibre, digestibility
- Major constituents of diets
- Nutritional requirements of rams, ewes (maintenance, pregnancy, lactation) and growing lambs
 - Targets for growth rates and marketing policy
- Effect of nutrition on reproductive performance and disease incidence

Nutritional deficiencies
 Diagnosis, including metabolic 'profiles'
 Treatment including cost/benefits
Nutritional aspects of Internal systems of sheep production

5. DISEASE

Clinical examination of rams, ewes, lambs and case recording
Diagnosis and control of commonly encountered diseases in the U.K. and Europe, and major international disease patterns.
Significance of diseases in import/export trade
Therapeutics of specific diseases and understanding of principles of pharmaco-kinetics and problems of tissue residues; withdrawal times
Anthelmintics, timing and strategic use
Current concepts of immunity
Vaccination procedures for control of diseases
Knowledge of principles of diagnostic laboratory procedures
Knowledge of suitable chemical, enzyme and serological tests for diagnosis of disease and collection of suitable specimens
Postmortem examination, selection and collection of specimens for laboratory examination as an aid to diagnosis
Collection and preservation of samples for histological examination
Notifiable disease
Zoonoses and public health
Anaesthesia and surgical procedures
The recognition and control of significant overseas diseases

6. HEALTH PROGRAMMES

Statutory and voluntary control in U.K. and major overseas programmes
Farm health programmes
 Methods of assessing flock health
 Formulation of health programmes including economic evaluation of control principles for specific diseases
 Methods of presenting health programmes to farmers
 Methods for monitoring programme by visits
 Cost analysis of management for health

7. LEGISLATION AND WELFARE

Legislation relating to sheep and dogs
Legislation relating to MAFF welfare codes including transport and marketing
Legislation relating to sheep diseases
Lairage in abattoirs

November 1988
Revised March 1992
Revised November 1994
Revised December 1996

CERTIFICATE AND DIPLOMA IN SHEEP HEALTH AND PRODUCTION

READING LIST

Candidates should note that the reading list for the Certificate and Diploma in Sheep Health & Production was frozen in 2002 and will eventually be withdrawn.

Candidates are expected to research the literature for themselves and are recommended to make use of the RCVS Library and Information Service for this purpose (<http://www.rcvslibrary.org.uk/>, e-mail - library@rcvs.org.uk or telephone 020 7222 2021). Candidates should also seek advice on suitable reading matter from their advisers.

Certificate:

*British Wool Marketing Board. British Sheep and Wool. (1985)

*Brown, D and Meadowcroft, S (1989) Modern Shepherd. Farming Press.

Bryson, T. (1984) The Sheep Housing Handbook. Farming Press.

*Clarkson M J and Faull W B (1990) A handbook for the sheep clinician, 4th rev. ed. Liverpool University Press.

Croston, D. and Pollott, G. (1985). Planned Sheep Production. Collins.

Dalton, C. (1987) An Introduction to practical animal breeding. Oxford, Blackwells.

Eales A and Small J (1986) Practical lambing - a guide to veterinary care at lambing. London and New York, Longman.

Fraser A and Stamp John T (1987) Sheep husbandry and diseases, 6th edn., London. Collins, (revised by Cunningham J M M & Stamp J T).

(Husbandry good, diseases in too little detail for veterinary surgeons).

*Henderson D C (1990) Veterinary Book for Sheep Farmers. Farming Press.

*Hindson, J. C. and Winter, A. C. (1990) Outline of Clinical Diagnosis in Sheep. Wright.

Kimberling, Cleon V. DVM (1988) (3rd Ed) Jensen and Swift's Diseases of Sheep. Lea & Febiger.

Linklater, K. A. and Smith, M. C. Colour (1993) Atlas of Diagnosis and Disorders of the Sheep and Goat. Wolfe.

*Martin W B (Ed) and Aitken I D (1991) Diseases of sheep. Oxford. Blackwell Scientific. 2nd ed. (418pp).

National Sheep Association (1992) British Sheep, 8th edn., The Sheep Centre, Malvern Worcestershire.

*Olivia Mills (1982) Practical Sheep Dairying - The care and milking of the dairy ewe. Thorsons, Wellingborough Northants. (£3.95) ISBN 0722507313.

Owen J. B., Axford, R. F. E. (1991) Breeding for disease resistance in farm animals. CAB International.

*Speedy A W (1980) Sheep production—science into practice. London and New York, Longman.

***Key references**

THE ROYAL COLLEGE OF VETERINARY SURGEONS

DIPLOMA IN SHEEP HEALTH AND PRODUCTION

READING LIST

(in addition to those on the Certificate List)

Bruere, A. N. and West, D. M. (1993) *The Sheep—Health, Disease and Production*. Vet. Continuing Education, Massey University, Palmerston North, N.Z.

(*Whilst aimed at N.Z. veterinary, contains much useful and practical information*)

*Gordon, I. (1983). *Controlled breeding in farm animals*. Pergamon Press. Chapter

*Haresign W (Ed) (1983) *Sheep Production; Proceedings of the 35th Easter School in Agricultural Science*, University of Nottingham. London. Butterworths.

*Marai, I. Fayezm, and Owen, J. B. (Eds) (1987) *New techniques in sheep production*. Butterworths.

Plant, J—*Sheep*. Published by University of Sydney, Postgraduate Foundation in Veterinary Science.

Pollott, G. E. (Ed) (1986) *Efficient sheep production from grass*. British Grassland Society. Occ. Symposium No. 21.

Ryder M (1983) *Sheep and Man*. Duckworth (846pp)

(Fascinating for general background but far too detailed on history of breeds).

Ryder M and Stephenson S K (1968) *Wool growth*. Academic Press.

(Interesting and contains some useful facts, but best to use by selecting sections to read).

Tomes G L, Robertson D E and Lightfoot R J (1979) *Sheep breeding, 2nd Edn.*, Ed. W Haresign.

(Certainly not worth buying as it is getting out of date but worth a glance through. A few chapters contain information which is still useful and relevant).

* Key References

Various regularly produced publications

*A.D.A.S. Advisory booklets

Scottish Agricultural College papers

*Farmers Weekly

*'In practice' supplements to Veterinary Record

*M.L.C. Yearbooks and other publications

*Proceedings of the Sheep Veterinary Society (Annual)

*Proceedings of the New Zealand Sheep Veterinary Society (Annual)

*Proceedings of the Third International Congress of Sheep Veterinarians (1993)

Proceedings of World Wool and Sheep Congress 31st July - 2 August 1996 - NSA
Malvern or RASE Stoneleigh.

*The Sheep Farmer, N.S.A. (must become a member of NSA)

Veterinary Annual

Moredun Foundation Newsletters (must become a member of Moredun Foundation)

*Veterinary Record

Additional Reading

Blowey, R W., Taylor, D., Winter, A C., Clarkson, M J., Lister, S., and Stuart, J.C. (1992).
Self-Assessment Picture Tests in Veterinary Medicine—Farm Animal Practice.
London: Wolfe.

(Section on Sheep—useful to practitioners)

*Key reading

November 1988

Revised March 1992

Revised November 1994

Revised December 1996

Revised November 1997 (deletion of a duplication only)

6. **Description of your work insofar as sheep health and production is concerned (in relation to the syllabus):**

7. **Brief description of your other duties:**

8. **Any special equipment or facilities to which you have access in relation to your work and studies:**

9. **Applicants MUST indicate below how they propose to gain the required experience in work specifically related to the Syllabus.**

Signature _____

Date _____

DIPLOMA IN SHEEP HEALTH & PRODUCTION
Proposed subject for dissertation

This form to be completed and returned to the RCVS by 1 November

Candidates are required as part of the examination, to submit a dissertation based on a research project in any aspect of sheep disease and management, or on an evaluation of a preventive medicine or disease control scheme in which the candidate is personally involved.

Please state below the proposed title for your dissertation, and give a brief outline of the project or scheme on which it will be based and your own involvement therein:

Candidates may not include work, which has already been included in a submission for **any other RCVS postgraduate qualification unless** that work forms only a minor part of the submission, the major part of which must be distinct from **any** previous submission for **any other postgraduate qualification**.

You are requested to declare which part, if any, has previously been used for another postgraduate qualification and to outline below how you propose to re-work/develop the work in respect of this Diploma.

Signature:

Date:

Please enclose a SAE for acknowledgement

THE ROYAL COLLEGE OF VETERINARY SURGEONS

Specialisation and Further Education

DIPLOMA IN SHEEP HEALTH & PRODUCTION

Application for FINAL approval of experience and for permission to submit an entry to the next examination

To be completed and countersigned by your Adviser before being returned to the RCVS, Belgravia House, 62–64 Horseferry Road, London SW1P 2AF by **1 November** prior to the examination you wish to enter.

1. **NAME** in full (block letters)

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2. **DEGREES/DIPLOMAS/CERTIFICATES** (in abbreviated form)

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3. **ADDRESS** for all correspondence (block letters)

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4. **TELEPHONE NUMBER & FAX NUMBER** (for contact during the day)

Telephone:	Fax:
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5. **DATE OF ENROLMENT** (month/year)

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6. **PERIODS OF EXPERIENCE BEING OFFERED** to meet the requirements of the byelaws

Veterinary Practice (name & address)	Period of employment (from/to)

If there has been any change in the work-load of the practice/centre, or in your personal work-load, since you applied for enrolment, please give details below:

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7. **PUBLICATIONS/ARTICLES/PAPERS/LECTURES** Please give details below or append a list:

8. **OTHER POSTGRADUATE STUDIES**

During the period of experience being offered, have you been or are you studying for any other postgraduate qualification?

YES NO

If **YES** give brief details:

9. **SUBMITTED WORK. DISSERTATION TITLE** - please confirm your title below:

10. Has an outline been submitted (on Form E1 B) and approved by the Board?

YES NO

*Candidates may not include work which has already been included in a submission for **any other RCVS postgraduate qualification unless** that work forms only a minor part of the submission, the major part of which must be distinct from **any** previous submission for **any other postgraduate qualification**.*

Candidates should declare on Form E1B which part, if any, has previously been used for another postgraduate qualification and outline how it is proposed to re-work/develop the work in respect of this Diploma.

11. **ATTENDANCE AT RELEVANT SHORT COURSES, CONGRESSES, SYMPOSIA ETC.**

The Board will need to see your attendance at short courses, congresses, symposia etc. for the period of experience you are offering. Anything that is not already detailed on the copies of your CPD Record Cards which you should include with this application should be detailed below:

Title of event attended:	Dates & Venue:

Please use additional pages if necessary. Remember to include copies of your CPD Record Cards covering the period of experience being offered with this application.

12. I hereby apply for final approval of experience and for permission to submit entry to the next Diploma examination in Sheep Health & Production. I certify that the period of experience being offered has not been/is not being offered to meet the requirements of the byelaws for any other RCVS Certificate or Diploma.

Signature:	Date:
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Delete the following section if you do not intend to sit the examination next year. Please note that only those candidates who now confirm their intention to sit will have their examination entry accepted at the closing date.

13. **CONFIRMATION OF INTENT TO SIT THE EXAMINATION**

I confirm my intention, if approval of experience is granted, of submitting an entry to the next examination.

Signature:	Date:
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14. **THIS SECTION MUST BE COMPLETED BY YOUR ADVISER**

I confirm that I am acting as this candidate's Adviser

Name:	Date:
Signature:	

Please enclose a SAE for acknowledgement

DIPLOMA IN SMALL SHEEP HEALTH AND PRODUCTION

Candidates should refer to the lists of Specialists and Diploma holders published in Section 3 of the RCVS Register of Members

April 2007

THE ROYAL COLLEGE OF VETERINARY SURGEONS
DIPLOMA EXAMINATION IN SHEEP HEALTH AND PRODUCTION

MONDAY 10 JULY 2006

PAPER I

(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

1. Recent reform of the Common Agricultural Policy (CAP) has resulted in the decoupling of financial support from commodity to area based payments. **Discuss** the importance of these monies to U.K. sheep farmers. Explain, giving your reasons, how you think the change will affect the size, structure, profitability and systems of sheep production in the U.K. over the next 5 years. Comment **briefly** on the effects this may have on sheep health and welfare.
2. **Write an essay on embryonic mortality in sheep, its causes and possible consequences.**
3. Footrot has only relatively recently been diagnosed (clinically and confirmed in the laboratory) in a small number of flocks in Sweden, which has a national flock of around 400,000 breeding ewes, mostly made up of very small flocks. **Describe** how you might go about advising the Swedish authorities as to how they might deal with the situation based on your experience of the disease in the U.K. What information would be required by the authorities before they could make any major decisions?
4. You are invited to join a steering group that will decide how to spend £100,000 on technical knowledge transfer to sheep farmers to improve and sustain their profitability. The money can be spent on two projects over the next 2 years. **Outline** the areas of technical knowledge transfer you would use the money to fund, your objectives and **briefly outline** what methods you would use.

P.T.O. for Section B

THE ROYAL COLLEGE OF VETERINARY SURGEONS
DIPLOMA EXAMINATION IN SHEEP HEALTH AND PRODUCTION

MONDAY 10 JULY 2006

(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.

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

5. **List** the advantages and disadvantages of housing spring lambing lowland ewes in the last 6-8 weeks of pregnancy.
6. **Briefly describe** how you would remove a toe granuloma including the methodology for anaesthesia of the foot and any after-care you think appropriate.
7. **List** the possible causes of anaemia in adult sheep and write short notes on any one of your choice.
8. **List** the major causes of infectious abortion in sheep in approximate order of importance in the U.K. What advice would you give a farmer client over the 'phone when they call to ask what to do next after discovering the third abortion in as many days some three weeks prior to the start of lambing?
9. **Briefly describe** the sequence of events following the introduction of a teaser ram into a flock of ewes in late anoestrus?
10. What advice would you give to a calf dealer who intends to lamb down a flock of ewes in the same building where he currently houses calves? What disease problems could arise?

P.T.O. for Questions 11 - 14

11. What information would you need about a proprietary compound feed formulated for sheep in order to advise a client on its suitability for his flock?
 12. **State briefly** the factors you would take into consideration when answering queries from a farmer about the use of vaccination against orf in a flock which has experienced the disease in both ewes and lambs?
 13. **With the aid of a simple diagram** indicate how you would treat young lambs suffering from hypothermia.
 14. Comment on the value of performance recorded and indexed terminal sire rams in commercial sheep flocks.
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THE ROYAL COLLEGE OF VETERINARY SURGEONS
DIPLOMA EXAMINATION IN SHEEP HEALTH AND PRODUCTION

MONDAY 10 JULY 2006

PAPER II

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.

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

1. *'It is not possible to farm sheep successfully in the U.K. without effective anthelmintics'.* **Discuss** this statement. Include an outline of what actions the sheep industry should take over the next 10 years and identify any research and development which may be required.
 2. You have a client with a flock of 1000 lowland March lambing Mule ewes. He wants you to review the physical performance (output) of the flock with a view to identifying the main weaknesses. What records would you need in order to carry out this appraisal? **Give examples** of the benchmarks you would use and the main issues to address should a weakness be found in a specific area.
 3. Write an essay on listeriosis in sheep as a consequence of feeding poor quality silage during pregnancy.
 4. Do you think that the widespread practice of castration and tailing - as it is currently carried out in the U.K. - is justified on welfare grounds? If you were advising Government on any changes to the legislation or codes of practice in this area, state what these would be, with your reasoning?
 5. In February 2005 the Advertising Standards Authority approved a statement that – *"no system of farming has higher levels of animal welfare standards than organic farms working to Soil Association standards"*. **Discuss** this statement with particular reference to sheep production and draw on your own experience.
 6. A number of ectoparasites affect sheep in the U.K. with potentially serious economic and welfare consequences. **Discuss** how you would devise a control programme (incorporating biosecurity measures) for a client with a marginal farm carrying both lowland and hill flocks in a tick infested area in the North West of England.
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