

The Royal College of Veterinary Surgeons  
Specialisation and Further Education

## THE DIPLOMA IN CATTLE HEALTH AND 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 Cattle Health and Production Board that ALL Candidates entering for the Diploma are Members of the Royal College of Veterinary Surgeons (MRCVS).

### SPECIFIC EXPERIENCE

2. The standard of this examination will be high and will prove a tough hurdle totally different in concept from the relatively straight-forward 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.
3. Candidates must have spent a period of time, as defined in paras. 6 and 7 below, by the time of the examination, having substantial involvement in the field of cattle health and production.
4. Substantial involvement is defined as at least 30 hours per week dealing with and advising on cattle 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, and would advise all candidates to ensure that they have spent sufficient time in practice before attempting the examination.
5. Candidates may gain experience for a Diploma:
  - (a) at an approved centre for their subject
  - or
  - (b) at an approved practice.

### Approved Centre Route

6. **Applications for approval of a Centre must be made directly by the Centre to the RCVS and not by the candidate. An application form can be obtained from the RCVS.**

7. Candidates following an approved training programme at an approved centre 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 four years** and are required to offer experience in the subject over **at least four years**.

#### Approved Centres for Cattle Health and Production

8. The following establishments have been granted Approved Centre status.

CENTRE	DIPLOMATE/ SPECIALIST	STATUS	APPROVAL YES/NO
Farm Animal Practice University of Bristol	Dr A J Bradley MA VetMB DCHP PhD DipECBHMMRCVS	<b>Re-Approved November 2007</b> Expires November 2012	<b>YES</b>
University of Glasgow Division of Farm Animal Medicine and Production	Mr D C Barrett BVSc BSc DBR DCHP DipECBHM MRCVS	<b>Re-Approved November 2007</b> Expires November 2012	<b>YES</b>
Division of Livestock Health and Welfare University of Liverpool	Dr R F Smith BVSc BSc PhD DipECBHM MRCVS	<b>Approved November 2007</b> Expires November 2010	<b>YES</b>
University of Nottingham	Dr J N Huxley BVetMed PhD DCHP DipECBHM MRCVS	<b>Approved November 2009</b> Expires November 2014	<b>YES</b>

#### Approved Practice Route

9. **There is no separate application form 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, whether the candidate is at an approved centre or an approved practice.

12. 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 either:
- (a) **at least five years including 200 days spent at an approved centre,**  
OR
  - (b) **at least six years** if gaining experience solely at an approved practice.
13. There is provision for a candidate to choose a subject for a dissertation, **either** Beef Cattle **or** Dairy Cattle, to be submitted as part of the Diploma examination, and this would reflect any particular interests.
14. It would be rare for the Diploma examination to be taken four years after graduation. Rather, it would normally be taken some four or five years from the time when the candidate began to become involved full-time in cattle health and production - and this would probably have been two or three years (or more) after graduation.

## THE EXAMINATION

15. The examination consists of three sections:
- i. A Dissertation
  - ii. TWO x 3 hour written papers, and
  - iii. a clinical, oral and practical examination.

## SUBMITTED WORK FOR EXAMINATION

### Dissertation

16. Candidates must apply on Form E1B for approval of the proposed subject of the dissertation by **1 November**. No exemption is permitted.
17. Candidates may **not** use all or part of the work prepared and submitted for another postgraduate qualification (including the Diploma of Fellowship) as all or part of their dissertation for an RCVS Diploma.

### Format

18. Candidates may base their dissertations 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 cattle health and management, or the evaluation of preventive medicine or disease control schemes in which the candidate is personally involved.

19. It is obviously of advantage to the candidate to have as much time as is available to write the dissertation, after having obtained approval of the subject.
20. 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.**
21. **Three copies** of the dissertation are required. Dissertations need not be bound but should be submitted in a cover in a secure manner. The dissertations of successful candidates will be placed in the RCVS Library for a period of five years. Each Dissertation should, therefore include a loose-leaf statement:

*'Dissertation submitted as part of the requirements for the examination for the RCVS Diploma in Cattle Health and Production'* - and should bear the candidate's name.

Candidates are asked to submit an electronic version of their submitted work together with their hard copy. 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 Diploma in Cattle Health and Production' marked clearly on the front.

### **Word Count**

22. A word count must be shown on the front cover of the Dissertation. A dissertation should be **between 5,000 - 10,000 words** in length (**excluding** references and appendices) and **should not exceed 10,000 words** in total.

### **Grading Scheme**

23. The submitted work will be graded "Good Pass"; "Pass" or "Fail".
24. **Good Pass** - the Dissertation will be lodged in the RCVS Library as a suitable example for future candidates.
25. **Pass** – The Dissertation is acceptable to allow the candidate to proceed to the remaining sections of the examination, but the work must be revised by the date of the clinical, oral and practical in order that it can be lodged in the RCVS Library if the candidate is successful in the examination as a whole.
26. **Fail** – The Dissertation is judged to be of an inadequate standard for the Diploma, and the candidate will not be allowed to proceed to the remaining sections of the examination in the year in question.

## WRITTEN EXAMINATION

27. 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

28. This section consists of 2 x three-hour written papers.

**Paper I** - will cover the whole syllabus, and will consist of **six** questions of which **five** are to be answered.

**Paper II** - will be set on either Dairy Cattle or Beef Cattle and will consist of **two** long questions (2 x 45 mins) and **ten** compulsory short-answer questions (10 x 9 mins).

### 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

### General Format

29. This section of the examination may last up to three hours for each candidate. Candidates should expect to be questioned on any area of the syllabus and their in-depth subject and would be best advised to gain an idea of the format and content of the examination from candidates or examiners from previous years.

30. Candidates who do not demonstrate competence in basic clinical and practical skills will fail the clinical, oral and practical examination.

31. Questions may be asked in relation to their dissertation submitted, and on any part of the syllabus including the subject chosen for in-depth study.

### Specific Formats

32. An example of what this section of the examination may contain is as follows:

- Reproductive cases for examination and discussion
- Lameness cases for examination and discussion

- Calves for examination and discussion of calfhood diseases and their treatment and prevention.

### **Marks Scheme**

33. The total marks for this Section (c) = 100 marks

### **SYLLABUS AND READING LIST**

34. A detailed syllabus is provided. The examination will be set at a level appropriate to a veterinary surgeon who has been engaged in cattle health and production to the extent indicated above.
35. Candidates are required to select **either** (a) beef cattle **or** (b) dairy cattle in which to be examined in depth in one of the written papers and may expect some in-depth questions on the selected option during the oral examination.
36. There is no separate reading list for the Diploma as candidates at this level are expected to be familiar with all literature in the area of their elective and most particularly so in the topic of their dissertation. In view of the increased access to the internet, and ready availability of on-line literature searches, candidates will be expected to do their own research and are encouraged to seek advice on suitable reading matter from their advisers and through the RCVS Library and Information Service.

### **ADVISERS**

37. Candidates will need to take advice from their adviser on the requirements of the syllabus, and on any experience a candidate might need to obtain in respect of 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.
38. Applicants are asked to select a name from the back of the RCVS Register of Members of those Members who hold a Diploma qualification in Cattle Health and Production 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.
39. Advisers may also oversee candidates' private studies, and the writing of dissertations, and the use of literature and data and the preparation of reports. It is for the candidate to make contact with his/her adviser, and travel to meet him/her if appropriate.

### **ATTENDANCE AT SHORT COURSES**

40. There is provision in the byelaws to make attendance at short courses compulsory for those wishing to take the Diploma examination. The Board is not, for the time being at least, introducing such a compulsory requirement, but it will advise candidates, when

they enrol, of any additional training which, in the Board's opinion, would be of benefit to them, and will give advice on where this can be obtained.

#### **MEMBERSHIP OF VETERINARY ASSOCIATIONS/SOCIETIES**

41. Enrolled candidates are encouraged to become a Member of the British Cattle Veterinary Association and attend meetings

#### **ABBREVIATION FOR QUALIFICATION**

42. Successful candidates are permitted to use the abbreviation "**DCHP**" 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.

**GENERAL GUIDANCE NOTES FOR DIPLOMA CANDIDATES  
ON THE PREPARATION OF A DISSERTATION**

*The dissertation should be presented in the normal format for a scientific article unless there are strong reasons why this is not appropriate: any different format should be approved by the supervisor before the first draft is produced.*

**The normal sections are:**

**Introduction**

This should include a brief review of the literature on the subject giving appropriate references. References may be cited in one of two ways e.g. 'Smith and Brown (1993) found that parasites increased in July' or 'Previous studies have shown that parasites increased in July (Smith and Brown, 1993)'.

It should be a critical review to indicate what is already known and where the gaps are in our knowledge which you have set out to remove. At the end of the introduction, it should be possible to say ' In the light of the literature I have reviewed, the aims of this study are to plug the following gaps by carrying out the following work' or something to the same effect!

**Materials and methods**

This should include an account of the animals or flocks or specimens used and the experimental methods and techniques you have used in order to obtain your results. There is no need to give details of well-known techniques but it is important that a reader should be able to repeat the work and certainly be able to decide on the reliability of your techniques, which obviously affect the value of your results. If you use techniques developed by other people, you should refer to a book or journal where the details are published.

**Results**

There should be a logical description of what you have found by the techniques you have described. This section may benefit by the inclusion of tables, graphs, figures or photographs which should have captions which are sufficiently self-explanatory to stand alone, though they should also be referred to in the appropriate part of the text. This section should not contain any comments on the significance of the results or to any inconsistencies or problems encountered.

**Discussion**

This section should contain a critical discussion of the significance of the results and of the extent to which the aims described in the introduction have been achieved. It should also relate the new findings to previous work and it may therefore be necessary to quote again some of the papers cited in the introduction but for a different purpose. In the introduction, it was to show where the gaps were, here it is to show how your results agree, disagree or add to the previous work. Any conclusions or new ways of tackling the problem should be indicated here.

## References

Unfortunately, there are a number of different ways used by different journals to list references in this list, so it isn't possible to lay down the one correct way! Since you might also wish to write your work as a paper for a journal, however, it is best to use a style which can be adapted to any journal, which means that the reference should be cited in full as follows:

Smith, M. J. and Jones, W. B. (1993). The seasonal fluctuations in parasite numbers in sheep in Britain. *Veterinary Record*, 134, 123 - 134.

A very careful check should be made to ensure that the references in the text are exactly the same as those in the list. (Trying this out on articles in any journal will give you a good idea as to the care with which the articles are edited by the authors or the journal).

## Acknowledgements

This section gives you the opportunity to thank anyone who has helped with the work or the dissertation.

## Appendices

If there is a great deal of detailed data such as laboratory findings, it may be helpful to place most of it in appendices with only summaries such as mean values in the results section.

DIPLOMA IN CATTLE HEALTH AND PRODUCTION

SYLLABUS

I. Candidates should have a detailed knowledge of the following:

- A. Those diseases of cattle which are commonly encountered in the United Kingdom and Europe, including their cause, epidemiology, prevalence, pathology, differential diagnosis, diagnosis, treatment, control and prevention. Zoonoses and their implications.

- B. Welfare

Ethics and animal use. Cattle needs and the 5 freedoms. Codes of recommendations for the welfare of cattle. Bodies involved in cattle welfare.

Normal behavioural patterns and their alteration by stress, pain and disease. Pain recognition and assessment.

Legislation affecting cattle welfare.

Advantages and disadvantages of intensive and extensive systems at all stage of production.

Welfare in relation to stockmanship, housing nutrition and breeding.

Welfare standards on the farm, during transport, in the market place and at the slaughterhouse.

Care and welfare of sick and injured cattle. Transport of casualty cattle.

Impact of biotechnology on welfare.

- C. Notifiable diseases of cattle and their legislation.

- D. Zoonoses

Zoonoses order - cattle diseases transmissible to man. Main signs in man.

Cattle, prevalence, epidemiology, pathology, signs.

Diagnosis, differential diagnosis, treatment, control.

- E. Diagnostic methods including -

Clinical examination

Case recording

Post-mortem examination

Collection and preservation of samples for laboratory examination

Routine diagnostic laboratory techniques

Ultrasonography

- F. Structure and economics of the industry
  - Cattle population, economic, marketing and other factors influencing same
  - Feed industry and other supporting industries - source, variation in supplies and cost of feed
  - Cattle marketing, slaughtering methods and meat processing and inspection
  - Milk composition, methods used for testing milk and meat, methods to alter constituents
  - Review of dairy and beef costings
  - A knowledge of current trends in the beef and dairy market place
  
- G. Rearing animals - indoors and outdoors
  - Diseases, causes, epidemiology inc. prevalence, pathology, clinical signs, diagnosis, differential diagnosis, treatment and prevention
  - Economic consequences of diseases and cost of disease control.
  
- H. Genetic improvement of stock, elementary statistics
  - Heritability of characteristics, selection for characteristics
  - Breeding programmes, economic assessment of genetic gain
  - National testing - performance and progeny. Advantages and problems
  - Hereditary and congenital diseases
  - Health control in relation to breed improvement and its constraints
  - Gene introduction and health risks
  
- I. Immunity and vaccination
  
- J. Epidemiology
  - Philosophy and use in disease control
  - Critical analysis of scientific papers
  
- K. Therapeutics and prophylactic medication
  
- L. Production systems (types and underlying principles)
  - Types of cattle housing
  - Types of growing animal housing
  - Systems of housing for beef and dairy cows
  - Various systems used for rearing calves and growing cattle
  - Systems for beef and dairy production
  - Welfare aspects, identifying problems and their solution
  
- M. Calf disease
  - Economics
  - Prevalence, causes, epidemiology, pathology, signs of disease especially enteric and respiratory
  - Diagnosis, differential diagnosis, treatment, control and prevention

N. Nutrition

Anatomy, physiology and principles of normal digestion  
An understanding of current principles of diet formulation  
Basic nutritional requirements of the cow at different ages and stages of production  
Common dietary constituents, used in compounding rations  
Various commonly used methods of conservation  
The more commonly used feeding regimes for dairy and beef cows  
Feed supplements and additives - nutritional, medicinal and growth promotional  
Nutritional deficiencies, signs, epidemiology, their diagnosis, correction and prevention  
Metabolic profiles  
Methods of food dispensing

O. Reproduction

Anatomy, physiology, surgery, obstetrics and reproduction  
Normal and abnormal reproductive behaviour  
Artificial control of reproduction  
Husbandry aspects of reproduction - principles of bull usage and cow management for efficient reproduction  
The effects of nutrition on reproduction  
Pregnancy diagnosis and examination of the reproductive tract and fetuses  
Diseases of the reproductive tract and their treatment  
Factors influencing oestrous detection rate  
Infertility in the cow  
Problems during pregnancy  
Normal parturition and obstetrical problems including surgery  
Common causes of reduced herd reproductive performance

Recording basic reproduction data, basic methods for investigation and correcting lowered reproductive performance  
Interpretation of records, organisation of fertility control schemes, cost and cost effectiveness  
An understanding of the principles of AI and embryo transfer, its advantages, disadvantages and uses. Methods of collection, monitoring inseminators, organisation of AI  
Infertility in the bull and clinical examination  
The need for competent use of ultrasonography for reproductive matters

P. Mastitis

Prevalence, causes  
Factors influencing condition  
Diagnosis, treatment, control and prevention

- Q. Lameness  
Prevalence, causes, epidemiology, pathology, signs  
Diagnosis, differential diagnosis, treatment, control and prevention
- R. Disease control programmes, principle and method of application on an international, national, multiple herd and individual herd basis, export and import certification.  
Disinfection and disinfectants.  
Formulation and monitoring of a detailed herd health plan.
- S. Herd health and preventive medicine schemes including microcomputer uses.
- T. Surgery and Anaesthesia  
Knowledge of common techniques
- II. **The candidate must offer either of the following subjects in which to be examined in depth:**
- i) Beef  
ii) Dairy.

Originated 1988  
Revised June 1990  
Revised February 1994  
Revised October 1997  
Revised November 2001

SPECIALISATION AND FURTHER EDUCATION

CERTIFICATE AND DIPLOMA IN CATTLE HEALTH AND PRODUCTION

*Candidates should note that the reading list for the Cattle Health and 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](mailto:library@rcvs.org.uk) or telephone 020 7222 2021). Candidates should also seek advice on suitable reading matter from their advisers.*

READING LIST

Alderman G and Cottrill B R (1993). Energy and protein requirements of ruminants. An advisory manual. Wallingford: CAB International.

\*\*Allen D and Kilkenny B (1990). Planned beef production and marketing. Oxford: BSP Professional.

*Dated but easy to read.*

Andrews A H (1990). Outline of clinical diagnosis in cattle. London: Wright.

\*\*Andrews A H et al (eds) (1992) (latest edn). Bovine medicine: diseases and husbandry of cattle. Oxford: Blackwell Scientific.

\*\*Andrews A H (2000) The Health of Dairy Cattle, Blackwell Science, Oxford.

Arthur G H et al (1996) (latest edn). Veterinary reproduction and obstetrics. London, Saunders.  
*A good general book but poor in some areas of infectious diseases.*

Blood D C et al (1990). Diseases of cattle: A manual of diagnosis. London: Bailliere Tindall.

Blowey, R W et al (1992). Self assessment picture tests in veterinary medicine – farm animal practice. London: Wolfe.

*Section on cattle – useful to practitioners*

Blowey R W and Weaver A D (1991). A colour atlas of diseases and disorders of cattle. London: Wolfe.

Blowey, R (latest edn). A veterinary book for dairy farmers. Ipswich: Farming Press.

Blowey, R (1993). Cattle lameness and hoofcare. Ipswich: Farming Press.

Bramley, A J, et al (eds) (1992). Machine milking and lactation. Newbury: Insight Books.

Brand, Nordhuizen and Schukken (1996). Herd health and production management in dairy practice.

*Excellent herd health text.*

Dalton, C and Willis, M B (1998) (latest edn). An introduction to practical animal breeding. Oxford: Blackwell Scientific.

Esslemont R J et al (1985). Fertility management in dairy cattle. London. Collins Professional and Technical Books.

*Easy to read book on fertility. Terminology is now not completely accepted.*

Faull W B, Hughes J W and Ward W R (eds) (latest edn). A mastitis handbook for the dairy practitioner. Liverpool: Liverpool University Press.

Greenough P R and Weaver A D (eds) (latest edn). Lameness in cattle. Philadelphia: Saunders.

*In-depth book on lameness but hard to read. It does contain useful references.*

Howard J L (ed) (1999). Current veterinary therapy: Food animal practice 4. Philadelphia: W Saunders.

*Easy to read and can be used to supplement other books, such as Blood and Radostits.*

\*\*Noakes D E (1997) (latest edn). Fertility and obstetrics in cattle. Oxford. Blackwell Science

*A good guide to fertility.*

\*\*Peters A R and Ball P J H (1995) (2nd edn). Reproduction in cattle. Oxford: Blackwell Science.

Radostits O M, Leslie K E & Fetrow J (latest edn). Herd health: food animal production medicine. London: Saunders.

*Very useful introduction to herd health.*

\*\*Radostits O M, Gay C C, Blood D C, & Hinchcliff K W, (2000). Veterinary Medicine, 9<sup>th</sup> Ed. W B Saunders Company Ltd. London.

\*\*Radostits O M, Mayhew I G J, & Houston D M, (2000). Veterinary Clinical Examination and Diagnosis. WB Saunders Company Ltd. London

Rebhun W C, (1995). Diseases of dairy cattle. Williams & Wilkins.

Simm G, (1998). Genetic improvement of cattle and sheep. Ipswich: Farming Press.

Weaver A D (1986) Bovine surgery and lameness. Oxford. Blackwell Scientific.  
*Difficult to read but supplies information on most surgical techniques. Much briefer, cheaper and easier to read than Greenough et al.*

Webster, J (1993) (latest edn). Understanding the dairy cow. Oxford: Blackwell Scientific.

## **WELFARE**

\*\*Fraser A F and Broom D M, (1990) (latest edn). Farm animal behaviour and welfare. London: Bailliere Tindall.

Kilgour R and Dalton C (1984) Livestock behaviour: A practical guide. London, Granada.

\*\*Moss, R (ed) (1992) Livestock, health and welfare (Longman). London: Longman Scientific and Technical.

*Well worth reading.*

\*\*Phillips, C J C (1993) Cattle behaviour. Ipswich Farming Press.

Webster, J (1984) Calf husbandry, health and welfare. London: Granada.

*A good section on husbandry.*

In addition to the above, **Certificate** candidates are advised to read relevant articles such as:

"In Practice"

Veterinary Record

Publications from the British Cattle Veterinary Association including Cattle Practice, The Veterinary Clinics of North America, UK Vet.

Also

\*\* Up-to-date information from "In Practice" supplements. Available as a cattle composite. "Bovine Practice" Editor: Edward Boden (1991) Bailliere Tindall.

\*\*Legislation Affecting the Veterinary Profession in the United Kingdom (£8.00) available from RCVS.

**Diploma** candidates: Journals such as Journal of Dairy Science and others.

**\*\*Highly recommended**

**Other books are good for background and reference.**

## PUBLICATIONS AVAILABLE FROM DEFRA

### PB Number

4661	Treatment and Prevention of Mastitis in Dairy Cows
0074	Codes of Recommendations on Welfare of Livestock (Cattle)
0621	Farm Fires: Advice on Farm Animal Welfare
1147	EMERGENCIES ON Livestock Farms
1151	Lameness in Beef Cattle and Dairy Followers
1381	Guidance on the Transport of Casualty Farm Animals
2531	Summary of the Law relating to Farm Animal Welfare
2594	Explanatory Guide to the Welfare of Animals (Slaughter or Killing) Regulations 1995
3335	Improving Calf Survival
3426	FAWC Report on the Welfare of Dairy Cattle
4020	Lameness in Dairy Cattle
4516	TB in Cattle – Reducing the Risk
4517	Farm Biosecurity – Protecting Herd Health
3901	A Review of Antimicrobial Resistance in the Food Chain – A Technical Report for MAFF.

Copies of the above and other publications can be obtained, free of charge, from:-

DEFRA Publications  
ADMAIL 6000  
London  
SW1 2XX  
Tel: 0645 556000

### **Also**

SI 1709 Welfare of Livestock (Amendment) Regulations 1998 is available from HMSO (price £1.55).

## E.1(a)

**PLEASE ENSURE THAT YOU COMPLETE A FORM E1 (TO BE FOUND IN THE COMMON DOCUMENTS) AND ATTACH IT TO THIS FORM**

Details of the veterinary practice in which experience has been or is being gained towards meeting the requirement of at least five calendar years of substantial experience prior to entry for the examination for the **Diploma in Cattle Health and Production**:

(If more than one practice please photocopy this form and complete in respect of each such practice)

1. Name of practice and address

---

---

2. Date of joining the practice

---

(and date of leaving if you are no longer employed at this address)

---

3. Numbers of veterinary surgeons usually working in the practice

---

4. Approximate percentage time of practice and applicant devoted to:

---

	Practice	Applicant
a. Cattle clinical work	%	%
b. Cattle herd health work (e.g. routine visits)	%	%
c. Cattle advisory work	%	%
d. No. dairy herds seen on routine visits		
e. No. beef herds seen on fertility visits		
f. No. of beef finishing herds attended		

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

6. Brief description of your other duties:

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

Signature \_\_\_\_\_ Date \_\_\_\_\_

**PLEASE RETURN ORIGINAL FORM PLUS FOUR COPIES**

## E.1(b)

**PLEASE ENSURE THAT YOU COMPLETE A FORM E1 (TO BE FOUND IN THE COMMON DOCUMENTS) AND ATTACH IT TO THIS FORM**

Specialisation and Further Education

### **DIPLOMA IN CATTLE HEALTH AND PRODUCTION**

*(For use where a candidate has not previously applied for approval)*

#### **Dissertation**

Application to be completed and returned to the RCVS, Belgravia House, 62-64 Horseferry Road, London SW1P 2AF **no later than 1 November in the year prior to that in which it is planned to enter for the examination.**

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

2. **PROPOSED TITLE FOR DISSERTATION** giving a brief outline

*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.**

3. **PLEASE INDICATE YOUR ELECTIVE:** - Beef  Dairy

Signature

Date

**PLEASE RETURN ORIGINAL FORM PLUS FOUR COPIES**

*Please enclose a S.A.E. for acknowledgement*

Specialisation and Further Education

**DIPLOMA IN CATTLE 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. **NO LATE APPLICATIONS WILL BE ACCEPTED**

1. NAME in full \_\_\_\_\_  
(block letters)

2. DEGREES/DIPLOMAS/CERTIFICATES \_\_\_\_\_  
in abbrev.form

3. ADDRESS for all correspondence (block letters)  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. TELEPHONE NO(s) for contact during day \_\_\_\_\_  
FAX NO for contact during day \_\_\_\_\_

5. DATE OF ENROLMENT \_\_\_\_\_  
(MONTH/YEAR)

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

Veterinary practice or centre  
(name and 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:

**7. PUBLICATIONS/ARTICLES/PAPERS/LECTURES**

Give details below or append a list, and include any involvement in the instruction of others:

**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, please give brief details:

**9. SUBMITTED WORK**

DISSERTATION TITLE — please confirm your title below:

---

---

---

---

Has an outline been submitted on Form EI.B and approved by the Board? YES / NO

10. ATTENDANCE AT RELEVANT SHORT COURSES OVER PAST THREE YEARS (*Not already included on your CPD Record Card*).

Title of course attended:

Dates and venue:

11. ATTENDANCE AT CONGRESSES, SYMPOSIA, ETC.OVER PAST THREE YEARS (*Not already included on your CPD Record Card*).

List any attendances at relevant congresses, conferences, meetings, symposia, etc., with dates:

*Please send a photocopy of your RCVS CPD Record Card covering the period of experience being offered.*

12. I HEREBY APPLY FOR FINAL APPROVAL OF EXPERIENCE AND FOR PERMISSION TO SUBMIT AN ENTRY TO THE NEXT DIPLOMA EXAMINATION IN CATTLE HEALTH AND 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.

13. CONFIRMATION OF INTENT TO SIT THE EXAMINATION

If approval of experience is granted, I do / do not (delete as appropriate) intend to submit an entry to the next examination (closing date for receipt of entries is 1 March).

Signature \_\_\_\_\_

Date \_\_\_\_\_

**PLEASE RETURN ORIGINAL FORM PLUS FOUR COPIES**

**THE FOLLOWING SECTION SHOULD BE COMPLETED BY YOUR ADVISER**

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

Name \_\_\_\_\_ Date \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

Please enclose a SAE for acknowledgement

**DIPLOMA IN CATTLE HEALTH AND PRODUCTION ADVISER LIST**

Candidates should consult the RCVS Register of Members for a suitably willing and qualified individual (someone holding a Diploma or equivalent) who is familiar with the RCVS Diploma examination system and clinically active.

For 'Role of Advisers' see Common Documents

THE ROYAL COLLEGE OF VETERINARY SURGEONS  
DIPLOMA IN CATTLE HEALTH AND PRODUCTION

TUESDAY 7 JULY 2009

PAPER 1  
(whole syllabus)  
(3 hours)

Candidates are required to answer **FIVE** of the following **SIX** questions.

Allow 36 minutes per question.

**Illegible handwriting or failure to answer the questions in the form requested may result in examiners being unable to award marks for information which candidates intended to convey.**

---

1. *'Non Steroidal Anti-Inflammatory Drugs (NSAIDs) are greatly underused in cattle medicine'.*

**Discuss** this statement with reference to the available products for use in the United Kingdom and the situations in which these may be used.

2. *'Failure of heat detection is fast becoming the biggest fertility issue on dairy farms'.*

**Discuss** this statement with particular reference as to why this might be and possible solutions to the problem.

3. A farm has suffered an abortion storm in a group of dry cows, which has been diagnosed by immunohistochemistry to be due to *Neospora caninum*. 20% of the herd has aborted and the farm is now considering buying in some recipient heifer replacements into which to implant embryos from some of the genetically superior cows diagnosed to be *Neospora* infected.

**Discuss in detail** a management plan to control the effects of *Neospora* in this herd and detail the considerations that ought to be taken regarding the purchase of the replacement recipient heifers.

4. Write a **brief review** of the routinely available diagnostic tests for paratuberculosis (Johne's disease) with particular reference to their sensitivity and specificity.

How can these tests be employed to investigate the disease status of individuals and herds and to assist in herd eradication?

P.T.O. for Questions 5 and 6

5. Clinical and sub-clinical mastitis in first lactation cows during early lactation is a problem in some herds. What might be the reasons for this and how can the problem be investigated and controlled?

6. **Outline** the records and assessments you would feel necessary to monitor lameness on farm.

**Discuss** the **advantages and disadvantages** of the various approaches you would instigate and **briefly outline** how you may assess such collated records to better understand lameness on farm.

\*\*\*\*\*

THE ROYAL COLLEGE OF VETERINARY SURGEONS  
DIPLOMA IN CATTLE HEALTH AND PRODUCTION

TUESDAY 7 JULY 2009

PAPER II  
**(BEEF)**  
(3 hours)

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

SECTION A

Candidates are required to **answer BOTH** of the following **TWO** questions.

Allow 45 minutes per question.

**Illegible handwriting or failure to answer the questions in the form requested may result in examiners being unable to award marks for information which candidates intended to convey.**

---

1. On 12/12/08 you are presented with the information **shown in the Table overleaf** from the referring veterinary surgeon of the owner of a suckler herd who is convinced that he has an intractable Bovine Viral Diarrhoea (BVD) problem affecting the fertility of his cattle.

**[See ALSO, data in Tables 1, 2, 3 and 4 overleaf]**

**Outline** your differential diagnoses of the causes of sub-fertility in order of likelihood and an investigation plan to confirm or refute these.

P.T.O for Table

**Case history:**

The herd consists of approximately 80 suckler cows and has suffered from subfertility since Spring calving 2007 as illustrated in Table 1. Calving occurs mostly in the Spring. Before this time the reproductive performance of the herd was satisfactory. The herd has been correctly vaccinated against Leptospirosis for 12 years.

**July 2007:** Too many cows were seen returning to oestrus.

**11/11/07 and 1/12/07:** The breeding stock were vaccinated against BVD using Pregsure BVD™ (Pfizer Animal Health).

**14/11/07:** Five homebred young stock aged 10-12 months were tested for antibody to BVD virus and all were seropositive.

**February 2008:** bull 'Utwo' went to a bull stud and semen testing proved satisfactory.

**11/2/08 to 25/5/08:** Spring 2008 calving was completed with no cases of dystocia.

**04/05/08:** Eight first calvers bought in with 3-month-old calves at foot to supplement numbers of Spring 2008 calvers.

**26/08/08:** a herd test for BVD was carried out which identified one PI calf (born on 10/10/07). As a part of this test the 2008 Spring-born calves were all tested for antibody to BVD (table 4) and seronegative animals were tested for BVD virus antigen by ELISA with negative results in all cases. The precise dates of birth of the calves were not available but the range was known from the calving spread and their ear numbers allowed them to be placed in likely age order.

**28/08/08:** the three stock bulls were preputial washed for *Campylobacter* bacteriology with negative results.

**November 2008:** scanning of Spring 2008 calving cows breeding group gave disappointing results (Table 1). Of the 8 bought in first calvers, 7 were in-calf; of the homebred first calvers only 1/6 was in-calf. Of 30 cows calving Spring 2007 and 2008 only 22 were in-calf. Two Spring 2007 calvers that failed to conceive for calving in Spring 2008 and Autumn 2008 were both pregnant.

**December 2008:** Pregsure BVD booster administered to all breeding stock and primary course to heifers.

**Bull policy:**

There are three stock bulls:

*Rufus:* born JAN01, bought FEB03 – not used elsewhere before purchase

*Albert:* Born APR06 bought JUN07 – not used elsewhere before purchase

*Utwo:* Born Feb04 bought NOV07 – used as a stock bull elsewhere previous to purchase

During the breeding period the bulls are rotated between mating groups at three weekly intervals.

The bulls are not routinely semen tested.

**Biosecurity audit:**

Part of the farm perimeter adjoins farms with cattle of unknown disease status but the fences are stock proof. No biosecurity precautions are taken with bought-in stock. Previously-bred cows were bought-in in May 2008.

**Table 1: Summary of reproductive performance**

<b>COWS – Spring Calvers</b>					
	calved	Mated (mating period start - end)	in-calf	barren	% mated in-calf
<b>2006</b>		55 (18/5-14/8)	53	2	<b>96</b>
<b>2007</b>	53	60 (19/5-18/8)	37	22	<b>62</b>
<b>2008</b>	44	56 (18/5-21/7)*	35	21	<b>63</b>
<b>COWS – Autumn calvers</b>					
<b>2007</b>	16	33	28	5	<b>85</b>
<b>2008</b>	28	42			
<b>HEIFERS – Spring calvers</b>					
<b>2006</b>	-	10 (24/4-14/7)	10	0	<b>100</b>
<b>2007</b>	-	10 (21/4-18/7)	7	3	<b>70</b>
<b>2008</b>	-	13 (18/4-)~	12	1	<b>92</b>

\*Bulls rotated 21/6 and 13/7

~ Albert

**Table 2: Spring 2008 calvers: calving spread analysis**

week	no. calved put to bull	p.d. results	
		pregnant cows	barren cows
1-3	27	15	12
4-6	10	5	5
7-9	1	1	0
10-11	6	5	1
<b>Totals</b>	<b>44</b>	<b>26</b>	<b>18</b>

**Table 3: Spring 2008 calvers: age analysis**

Age (years)	no. calved put to bull	p.d. results	
		pregnant cows	barren cows
3	15#	9	6
4	7	3	4
5	1	1	0
6	2	2	0
7	10	5	5
8	8	7	1
9	5	3	2
10	4	3	1
11+	4	2	2
<b>Totals</b>	<b>56</b>	<b>35</b>	<b>21</b>

# 5/6 homebred 1<sup>st</sup> calvers barren; 1/8 1<sup>st</sup> calvers bought in (with 3-month old calves at foot) barren

**Table 4: Spring 2008 born calves BVD serology results (sampled 26/08/08)**

Sample no	Ear no	Age (likely descending order)	BVD serology Interpretation	% positivity (%) [ $< 14 = \text{negative}$ ]
51	616	93 - 196 days	NEG	0
47	617	93 - 196 days	NEG	4
86	619	93 - 196 days	NEG	2
50	620	93 - 196 days	NEG	-1
93	621	93 - 196 days	NEG	0
87	622	93 - 196 days	NEG	0
82	623	93 - 196 days	NEG	3
49	624	93 - 196 days	NEG	5
83	625	93 - 196 days	POS	18
99	628	93 - 196 days	NEG	1
95	628	93 - 196 days	NEG	6
85	629	93 - 196 days	NEG	13
90	630	93 - 196 days	NEG	1
46	631	93 - 196 days	NEG	-1
98	632	93 - 196 days	NEG	5
92	633	93 - 196 days	NEG	2
89	634	93 - 196 days	NEG	0
20	635	93 - 196 days	NEG	-1
17	636	93 - 196 days	POS	36
18	637	93 - 196 days	NEG	0
24	638	93 - 196 days	NEG	6
19	639	93 - 196 days	NEG	2
15	640	93 - 196 days	NEG	8
21	641	93 - 196 days	POS	14
96	642	93 - 196 days	NEG	1
13	643	93 - 196 days	NEG	6
105	644	93 - 196 days	NEG	4
88	645	93 - 196 days	NEG	2
16	646	93 - 196 days	NEG	4
48	647	93 - 196 days	NEG	3
14	648	93 - 196 days	POS	25
97	649	93 - 196 days	NEG	2
23	650	93 - 196 days	NEG	1
22	651	93 - 196 days	NEG	6
25	652	93 - 196 days	NEG	9
91	653	93 - 196 days	POS	52
11	655	93 - 196 days	POS	26
5	657	93 - 196 days	POS	26
12	658	93 - 196 days	POS	23
3	659	93 - 196 days	POS	57
4	666	93 - 196 days	POS	18

P.T.O. for Question 2

2. There were a number of anecdotal reports of abortion in cattle following the use of Blue Tongue (BTV) vaccines in the United Kingdom in 2008. These vaccines are currently marketed under a provisional marketing authorization (PMA). As an expert you are approached to comment on the number of abortions occurring after BTV vaccination and to draw up a prospective study protocol to determine if there is an increased risk of abortion following BTV vaccination.

Following a review of your practice data you find the practice sold approximately 125,000 doses of BTV vaccine to beef farmers last year, in the two weeks following vaccination you are aware of 15 abortions.

- a. **Briefly outline** what you understand a PMA to be.
- b. On the basis of your practice figures, **comment** on the rate of abortion seen in your practice following BTV vaccination (please show your workings).
- c. **Briefly outline**, and **discuss**, a study protocol to determine if there is an increased risk of abortion following BTV vaccination.

**P.T.O. for Section B**

# DIPLOMA IN CATTLE HEALTH AND PRODUCTION

TUESDAY 7 JULY 2009

## PAPER II

(BEEF)

(3 hours)

### SECTION B

Candidates are required to **answer ALL** of the following **TEN** questions.

Allow 9 minutes per question.

**Illegible handwriting or failure to answer the questions in the form requested may result in examiners being unable to award marks for information which candidates intended to convey.**

---

3. **List** the key factors you would address to maximise pregnancy rates when undertaking an oestrus synchronisation programme for beef heifers.
4. 'Black disease' (infectious hepatic necrosis due to *Clostridium novyi* infection) is confirmed in two bulling heifers in a suckler herd at post-mortem examination.  
**Outline** the advice you would give to the farmer to reduce the risk of further losses.
5. **Briefly describe** a technique for transfusing blood into a heifer that has suffered a torn vaginal artery at calving.  
**List** the other conditions when this technique may be indicated.
6. **Briefly outline** your understanding of 'Decoupling', 'Cross Compliance', 'Modulation' and the abandoned concept of 'degressivity' in the context of European Union Common Agricultural Policy reform.
7. **List** the recognised risk factors for calf pneumonia in a group of weaned beef steers.
8. **Briefly outline** the advice that you would give to the owner of a suckler herd who home breeds replacements and is keen to reduce the incidence of dystocia in his herd by genetic means.

**P.T.O. for Questions 9 - 12**

9. Write **brief notes**, including **advantages and disadvantages**, of **TWO** methods of Lungworm control in a beef suckler herd.
  10. **Briefly outline** the beef carcass classification system and illustrate the typical distribution of carcasses seen in the United Kingdom.
  11. What is 'compensatory growth' and how can it be utilised to improve profitability in beef rearing enterprises?
  12. Comment on the issues surrounding administration of multiple vaccinations to cattle e.g. Blue Tongue, Bovine Viral Diarrhoea (BVD), Leptospirosis.
-

# DIPLOMA IN CATTLE HEALTH AND PRODUCTION

TUESDAY 7 JULY 2009

## PAPER II

**(DAIRY)**

(3 hours)

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

### SECTION A

Candidates are required to **answer BOTH** of the following **TWO** questions.

Allow 45 minutes per question.

**Illegible handwriting or failure to answer the questions in the form requested may result in examiners being unable to award marks for information which candidates intended to convey.**

---

1. The owner of a large dairy herd has asked his vet to refer a calf-pneumonia problem to you. The referring vet has summarised the problem below:
  - 970 dairy cows with an even all year calving pattern resulting in 600-700 calves reared per year.
  - The cows are housed all year with only dry cows having access to pasture where there is no risk of contact with cattle from neighbouring farms.
  - All cattle are homebred by AI; there are no bought-in animals.
  - Calves are removed from the cow to single pens where they are fed three litres of pooled colostrum from a bucket with a teat within 6 hours of birth
  - The colostrum is usually from the cow's first milking
  - When aged 10 days calves are moved from single pens to group pens of 11 in two different air spaces, where there is a large rolling population of calves to age three-months.
  - Calves are fed colostrum for 4 days then milk from cows vaccinated against rotavirus, coronavirus and *E.coli* F5 (K99) adhesin (Rotavec™ Corona, Intervet/Schering Plough Animal Health) vaccinated cows for 2 weeks followed by waste milk, topped up with powdered milk as necessary.
  - Two litres twice daily in single pens (single bucket and teat)
  - Halofuginone (Halocur, Intervet/Schering Plough Animal Health) is fed with the milk for the first 7-days of life at the licensed dose rate.

Continued over page.../

- Three litres twice daily in group pens (bin with 12 teats)
- Calves are vaccinated with live RSV and PI3 vaccine by the intranasal route (Risposal RS+PI3 intranasal, Pfizer Animal Health) when aged 7 days
- Calves are moved to the group pens when aged 10 days
- For the first 80-100 calves vaccinated (commencing in October 2007) this appeared to reduce the incidence of pneumonia
- Now within ~ 4 days of movement ~ 70% of the calves are affected by pneumonia and some show scour.
- Provided cases are treated early there is a good response to treatment but there is a significant growth set back.
- Nine bull calves that have not been moved from the single pens and are not vaccinated have remained healthy to date when aged 17-24 days.
- For reasons of space and labour the calves cannot normally be kept in the single pens beyond 10 days of age.
- Four calves aged < 7 days were blood sampled and tested by zinc sulphate turbidity test with the following results:

Laboratory reference figure for ZST: > or = 14 ZST units:

Calf A:	9	ZST units
Calf B:	15	ZST units
Calf C:	12	ZST units
Calf D:	9	ZST units

**Outline** your initial assessment of the problem on the basis of this information and your experience of calf-pneumonia problems in dairy herds.

How would you investigate the problem further?

What possible solutions are there for this herd?

2. There were a number of anecdotal reports of abortion in cattle following the use of Blue Tongue (BTV) vaccines in the United Kingdom in 2008. These vaccines are currently marketed under a provisional marketing authorization (PMA). As an expert you are approached to comment on the number of abortions occurring after BTV vaccination and to draw up a prospective study protocol to determine if there is an increased risk of abortion following BTV vaccination.

Following a review of your practice data you find the practice sold approximately 125,000 doses of BTV vaccine to dairy farmers last year, in the two weeks following vaccination you are aware of 15 abortions.

- a. **Briefly outline** what you understand a PMA to be.
- b. On the basis of your practice figures, comment on the rate of abortion seen in your practice following BTV vaccination (**please show your workings**).
- c. **Briefly outline**, and **discuss**, a study protocol to determine if there is an increased risk of abortion following BTV vaccination.

P.T.O. for Section B

**DIPLOMA IN CATTLE HEALTH AND PRODUCTION**

**TUESDAY 7 JULY 2009**

**PAPER II**

**(DAIRY)**

(3 hours)

**SECTION B**

Candidates are required to **answer ALL** of the following **TEN** questions.

Allow 9 minutes per question.

**Illegible handwriting or failure to answer the questions in the form requested may result in examiners being unable to award marks for information which candidates intended to convey.**

---

3. **List** the key factors you would address to maximise pregnancy rates when undertaking an oestrus synchronisation programme for dairy heifers.
  
4. 'Black disease' (infectious hepatic necrosis due to *Clostridium novyi* infection) is confirmed in two bulling heifers in a dairy herd at post-mortem examination.  
  
**Outline** the advice you would give to the farmer to reduce the risk of further losses.
  
5. **Briefly describe** a technique for transfusing blood into a heifer that has suffered a torn vaginal artery at calving.  
  
**List** the other conditions when this technique may be indicated.
  
6. **Briefly outline** your understanding of 'Decoupling', 'Cross Compliance', 'Modulation' and the abandoned concept of 'degressivity' in the context of European Union Common Agricultural Policy reform.
  
7. **List** the signs that you would expect to see in a dairy herd where cubicle compliance was poor.

8. **Briefly outline** the advice that you would give to a dairy farmer who is keen to improve the fertility of his herd by genetic means.
  9. **List** the differential diagnoses for oral ulceration in a 12 month-old black and white Holstein heifer. How would you approach a situation where a client who rears replacement heifers asks for telephone advice regarding three animals in a group of twenty showing signs of oral ulceration?
  10. Write **short notes** on urine analysis in dairy cows. Include techniques for sample collection, situations when urine analysis may be useful and tests commonly done on urine samples collected.
  11. **List** the signs of copper poisoning in cattle. **Outline** a suitable treatment for this condition and the circumstances under which it may occur on a dairy farm.
  12. Write **brief notes** on 'Black Spot Defect' in Cheddar cheese.
-