

THE ROYAL COLLEGE OF VETERINARY SURGEONS

DIPLOMA IN STATE VETERINARY MEDICINE

MONDAY 10 JULY 2006

PAPER I

(Total 3 hours)

Candidates are required to answer **ALL NINE** questions on this paper, and only short answers are required.

Allow 10 minutes per question.

The use of simple labelled diagrams where appropriate, is encouraged.

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

SECTION A

1. **Discuss** the indications and contra-indications of vaccination of domestic birds in the current worldwide outbreak of avian influenza (H5N1 virus).
2. In reviewing its policy on the control of bovine tuberculosis, Government is considering a selective culling of badgers. **Discuss** briefly the **advantages and disadvantages** of embarking on a badger culling programme within Great Britain.
3. **Describe briefly** the roles of the Official Veterinarian.
4. How can the risk of introduction of infection into a country be minimized?
5. **Describe FIVE** reasons why there might be problems with control of endemic disease.
6. Explain the aims of a biosecurity programme and why it is important. Indicate how realistic it is to apply these principles to a farm.
7. Using Bovine Spongiform Encephalopathy (BSE) as an example, describe how a Veterinary Surveillance Scheme relating to food producing animals could be implemented.

P.T.O. for questions 8 - 9

8. Veterinary Surgeons play an important role in protecting animal health, animal welfare, public health and the environment. Indicate the national needs in respect of an outbreak of infectious disease in animals that has significant implications for public health, including a description of how to ensure readiness and coordination of the effort to protect the country against infectious disease.

9. The use of the “farm to fork approach” is increasingly being used in the production of safe food of animal origin. **Discuss** why food borne zoonoses could be better controlled (or eliminated) on the farm, rather than at slaughter, at post mortem meat inspection or during processing.

P.T.O. for Sections B(i) and B(ii)

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**PAPER I
SECTION B(i)**

Candidates are required to answer **ONE COMPULSORY** question in this **Section B(i)** set from Section 5 of the syllabus with a choice within the question.

Allow 45 minutes per question.

The use of simple labelled diagrams where appropriate, is encouraged.

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**SECTION B (i)
COMPULSORY QUESTION**

10. A nation-wide animal health and welfare strategy should include herd/flock health programmes.

Discuss

- a) the role of such programmes in achieving high animal health and welfare status at the farm and national levels.

Or

- b) the direct control mechanisms for a major notifiable epizootic disease. Include in your answer the limitation(s), if any, to the effectiveness of your suggested measures.

P.T.O. for Section B (ii)

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PAPER I SECTION B(ii)

Candidates are required to answer **ONE** question from a choice of **three** questions in this **Section B(ii)**.

Allow 45 minutes per question.

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SECTION B (ii)

11. H5N1 avian influenza virus continues in its spread to many countries of the world.

Discuss the steps that the United Kingdom Government, poultry industry and veterinary profession should take to reduce the potential of any introduced virus gaining access to domestic poultry.

12. **Discuss** the management and operation (by a Government veterinary service) of large scale killing of livestock during emergencies, identifying the advantages, disadvantages and limitations of **each** approach given.

13. **Describe briefly** the rationale for import/export controls.

What is the system of movement controls of animals and animal products into and within the European Union and export of live animals to Third Countries? Include in your answer the role of the World Organisation for Animal Health [Office of International des Epizooties (OIE)] in imports and exports and the International Animal Health Code.

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PAPER II

SECTION A

(Total 3 hours)

Candidates are required to answer **ALL NINE** questions on this paper, and only short answers are required.

Allow 10 minutes per question.

The use of simple labelled diagrams where appropriate, is encouraged.

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1. In a cross-sectional study to estimate the herd level frequency of Johne's disease and number of farms were randomly selected from all dairy farms in the area and classified as Johne's disease 'positive' or 'negative'. The results of the study indicated a prevalence of 0.3 (30%) positive herds with a 95% confidence interval between 0.22 and 0.38.

How would you interpret this confidence interval?

What would the effect of increasing the size of the study (increasing the number of farms included in the study) on bias and precision?

2. What defines stereotypic behaviour pattern? **Discuss** how social factors can affect health and productivity in housed animals.
3. When investigating the role of an infection in a herd you can choose between two tests:
- An ELISA with Sensitivity = 0.85 and Specificity = 0.95
 - An IFA test with Sensitivity = 0.95 and Specificity = 0.85
- a. In a scenario in which false positives were more undesirable than false negatives which test would you use?
- b. If you apply the test to herds with differ prevalence of the disease:
- (i) Would sensitivity and specificity be different when applying the test on different herds?
 - (ii) Would predictive values be different when applying the test on different herds?
- c. Which parameter measures the ability of the test to correctly detect individuals with disease or condition of interest?

4. **List FOUR** types of residues which may be found associated with animal production. Identify the statutory controls that are in place in United Kingdom at this time.
5. In a controlled environment Animal House describe the importance of maintaining various conditions within acceptable limits.
6. A welfare complaint, in the Spring, alleging that sheep were collapsing when brought in for head count by Department of Agriculture is to be investigated. It is on an isolated hill farm of 700 hectares run solely by an aged tenant farmer who has farmed there all his life. Farm comprises stone built sheds around a yard and a new cubicle shed with 850 outwintered spring lambing Cheviot ewes, 100 suckler cows plus followers, suckled calves sold at one year old through local markets.

Sheep - 14 ewes collapsed whilst walking in from hill, all ewes very thin and weak, Condition Score 0-1.5; 20% of flock were lame, foul smelling feet, many overgrown feet, horn separated from underlying tissue, bleeding feet; 21 sheep carcasses lying scattered on hill; no evidence of field troughs or supply of sheep/cattle concentrates on farm.

Cattle - 100 suckler cows (Luing and Shorthorn crosses) housed in new cubicle shed (internal water troughs and external feed barrier) fed straw and concentrates at the feed barrier; Cow condition scores ranged from 0.5-1.5, due to calve April/May; No water in sheds housing young stock (approximately 100); cattle let out on a daily basis to drink at a trough in the yard; A heavily pregnant cow in the cubicle shed went down and was unable to rise; 4 dead cows were found in the adjacent hay shed.

- a) What investigations would you carry out on the sheep?
 - b) What are your views on what you have seen?
 - c) What criteria are important in your assessment?
 - d) Any offences with the sheep carcasses? What is their significance?
 - e) Any welfare offences involving the cattle?
 - f) Could ignorance of the law be a valid defence?
7. Describe briefly how the primary and subordinate legislation in the fields of animal health, animal welfare, and public protection are formulated in the United Kingdom.

P.T.O. Questions 8 - 9

8. **Discuss** the advantages and disadvantages of food animal production in intensive and in outdoor systems.

9. **Describe briefly** the key points relating to the gathering of evidence for a prosecution.

P.T.O. for Section B

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**PAPER II
SECTION B**

Candidates are required to answer **TWO** of **four** essay questions.

Allow 45 minutes per question.

The use of simple labelled diagrams where appropriate, is encouraged.

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10. **Draw a template** for a Quantitative Risk Assessment of Zoonotic Potential of emerging infections if a new animal infection was discovered.

 11. Foods for human consumption are frequently subjected to microbiological examination. **List** the **THREE** particular objectives of this sampling and **discuss briefly** the disadvantages of using microbiological criteria. Include in your answer comment on the use of indicator organisms (**giving an example if possible**) for monitoring purposes.

 12. **Briefly describe** the four components of Risk Analysis showing clearly the ways in which they are related to each other.

 13. In an animal enterprise, production function, may be regarded as an important index.

Describe the benefits and limitations of using this value in animal production with regard to **both** energy and protein utilization. Base your answer on any chosen monogastrics and any ruminant.
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