2008 STATUTORY MEMBERSHIP EXAMINATION

WRITTEN EXAMINATION SUBJECT QUESTION PAPERS

Examination Subject | THE HORSE
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SECTION A
Answer either (a) or (b) from each of the 3 pairs of questions

1a. Surgery is now a recognised treatment option for some horses with colic. Describe the clinical circumstances that would make you consider this option for a colic case that you are treating (50%). Under what circumstances is referral to a surgical facility contraindicated or undesirable? (20%) Provide a brief checklist of things to be done by you before the horse is transported (30%).

OR

1b. A 6-year-old Thoroughbred gelding has developed a very loud inspiratory noise at canter and exercise intolerance. Endoscopy of the larynx at rest has revealed a grade IV/V i.e. complete, left laryngeal paralysis. The owner intends to use this horse as an eventer.

- Draw an annotated diagram of the normal larynx as viewed endoscopically (20%) and an annotated diagram of what you would expect this horse's larynx would look like endoscopically (20%).

- What surgical options are most commonly used to manage this condition in horses and what are the advantages and disadvantages of each method? (40%)

- What would you recommend in this horse and why? (20%)

2a. You are called to examine a 12-year-old Thoroughbred cross eventer that has been coughing for three months and has a history of poor performance. Give your differential diagnosis (30%) and describe how you would investigate this horse (70%).

OR

2b. A 7-year-old Warmblood gelding has been losing weight for eight weeks and appears to be dull and depressed. You notice that the field in which this horse
and its companions are grazing contains the plant ragwort.

- Describe the appearance of ragwort and give details of the toxin it contains that is responsible for weight loss in horses, including its action. (20%)
- Explain how you would investigate this case. (30%)
- How would you manage this case? (30%)
- What recommendations would you make to the owner with regard to the other horses on these premises? (20%)

3a. Each distal limb of the horse has two splint bones. Discuss the anatomy and function of these bones (50%) and the common clinical conditions that affect these structures (50%).

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3b. You are called to examine a 10-day-old foal that has diarrhoea. Give your differential diagnosis (40%) and describe how you would investigate this foal. (30%) Give details of how you would treat and manage this case (30%).

SECTION B
Answer all 10 questions

1. Wounds on the distal limb of horses are notoriously difficult to manage. List 5 causes of poor wound healing in this region (50%) and methods for minimising each cause (50%).

2. List the clinical signs of facial (VII cranial) nerve paralysis in the horse. (40%) What are the possible causes? (40%) What is the prognosis for a return to normal function? (20%)

3. List the uses of diagnostic ultrasound in the horse. (50%) What are the limitations on its use in this species? (50%)

4. At what age do the permanent premolar and molar teeth erupt in the horse? (40%) What abnormalities can occur at this time and how may they be recognised? (60%)

5. What are the indications for ovariectomy in the mare? (20%) What techniques are available? (30%) List the advantages and disadvantages of each. (50%)

6. What are the management factors that trigger laminitis in ponies? (20%) Give the typical clinical signs of the condition (40%) and outline how you would manage an acute case of laminitis in a child’s pony kept at grass (40%).
7. Atrial fibrillation is one of the most common pathological arrhythmias affecting the horse.

- List the typical history and clinical examination findings in a horse with atrial fibrillation. (50%)
- Describe how you would obtain an ECG from a horse and, using sketches, compare the ECG from a horse in normal sinus rhythm with a horse with atrial fibrillation. (40%)
- Give one suitable treatment for a horse with atrial fibrillation. (10%)

8. Equine influenza virus remains a constant threat to the world’s equine population, despite widespread vaccination.

- State which types of influenza viruses infect horses and explain why outbreaks of disease occur despite the use of vaccination. (30%)
- Give the typical clinical signs of equine influenza virus infection. (40%)
- Summarise how equine influenza virus infection is controlled in the United Kingdom. (30%)

9. What are sarcoids? (20%)
List the different clinical presentations of sarcoids. (40%)
Summarise how sarcoids can be treated, indicating the advantages and disadvantages of each treatment method you describe. (40%)

10. Write notes on the pathogenesis (20%), clinical signs (40%) and treatment (40%) of equine recurrent uveitis (ERU).

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<table>
<thead>
<tr>
<th>Examination Subject</th>
<th>SMALL COMPANION ANIMALS</th>
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**SECTION A**
Answer either (a) or (b) from each of the 3 pairs of questions

1a. An eight year old entire female Labrador is brought in to see you with a history of a cough. Explain how you would investigate this problem and give some indication of the types of disease which you might consider as causes of this problem.

OR

1b. What are the causes of abdominal distension in the dog? Explain how you would evaluate the cause of a distended abdomen in a middle-aged cross-bred male dog.
2a. An owner brings you their 12-year old female entire Labrador because they have recently noticed a mass associated with one of her mammary glands. The dog is otherwise reportedly healthy and is not on any medication. Further questioning of the owner does not reveal any other significant history. Your physical examination of the dog reveals the mass is between the left fourth and fifth mammary glands, firm, subcutaneous, mobile and approximately 3 x 3 cm. Regional lymph nodes are not palpably enlarged. You do not find any other mammary masses and rectal examination is unremarkable. You perform routine haematology and biochemistry, which are within normal limits.

Outline your plan of action to secure a diagnosis and estimate the prognosis. Justify your choice of investigations and relate the potential outcomes of these diagnostic steps to prognosis and treatment. (60%)

A non-surgical investigation indicates that the mass is a mammary neoplasm.

How will you describe the rationale for surgical treatment to the client and how will you justify a full histological examination of the excised tissue? (40%)

OR

2b. A 1-year old Bull terrier crossbred dog is re-presented for a left pelvic limb lameness. The dog has been seen in the practice on two previous occasions over the last 6 weeks for this problem, although no specific focus for the lameness has been identified. Conservative treatment involving reduced exercise and non-steroidal anti-inflammatory drugs has produced some temporary improvement in the lameness, but the problem is persistent. The owners notice the problem most after exercise.

Outline your plan of action to locate the source of the lameness and secure a diagnosis. Justify your choice of investigations and relate possible findings to prognosis and treatment. (70%)

Your investigation concludes that the problem is related to hip dysplasia and you and one of the other veterinary surgeons in the practice perform a femoral head and neck excision.

How will you describe the detail of the post-operative care to the owner? (30%)

3a. A cat, aged 13 years, is brought to your clinic with a history of polydipsia and weight loss. The owner reports that the cat seems slightly depressed with a poor appetite. Some vomiting has occurred but is not frequent. Body temperature is 38.5°C, respiratory rate 40 breaths per minute, heart rate 180 beats per minute. The bladder is full on palpation. The cat has some dental disease and halitosis, the gums seem slightly pale. The remainder of the clinical examination is unremarkable.
Blood samples taken for haematology and biochemistry show the following findings:

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Result</th>
<th>Reference Range</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Protein</td>
<td>84</td>
<td>57 - 79</td>
<td>g/L</td>
</tr>
<tr>
<td>Albumin</td>
<td>32</td>
<td>23 - 39</td>
<td>g/L</td>
</tr>
<tr>
<td>Globulin</td>
<td>52</td>
<td>28 - 51</td>
<td>g/L</td>
</tr>
<tr>
<td>ALT(^1)</td>
<td>34</td>
<td>12 - 130</td>
<td>i.u.</td>
</tr>
<tr>
<td>ALKP(^2)</td>
<td>39</td>
<td>14 - 111</td>
<td>i.u.</td>
</tr>
<tr>
<td>Urea</td>
<td>32</td>
<td>5.7 - 12.9</td>
<td>mmol/L</td>
</tr>
<tr>
<td>Creatinine</td>
<td>488</td>
<td>71 - 212</td>
<td>µmol/L</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>4.3</td>
<td>1.7 - 5.8</td>
<td>mmol/L</td>
</tr>
<tr>
<td>Amylase</td>
<td>660</td>
<td>500 - 1500</td>
<td>i.u.</td>
</tr>
<tr>
<td>Glucose</td>
<td>10.3</td>
<td>3.95 - 8.8</td>
<td>mmol/L</td>
</tr>
<tr>
<td>Calcium</td>
<td>2.8</td>
<td>1.95 - 2.83</td>
<td>mmol/L</td>
</tr>
<tr>
<td>Phosphate</td>
<td>3.9</td>
<td>1.0 - 2.4</td>
<td>mmol/L</td>
</tr>
<tr>
<td>Total Bilirubin</td>
<td>2</td>
<td>0 - 15</td>
<td>µmol/L</td>
</tr>
<tr>
<td>Sodium</td>
<td>153</td>
<td>150 - 165</td>
<td>mmol/L</td>
</tr>
<tr>
<td>Potassium</td>
<td>3.9</td>
<td>3.5 - 5.8</td>
<td>mmol/L</td>
</tr>
<tr>
<td>Chloride</td>
<td>120</td>
<td>112 - 129</td>
<td>mmol/L</td>
</tr>
<tr>
<td>Haematocrit</td>
<td>0.23</td>
<td>0.28 - 0.45</td>
<td>L/L</td>
</tr>
<tr>
<td>RBCC(^3)</td>
<td>4.3</td>
<td>5.0 - 10</td>
<td>x10(^{12})/L</td>
</tr>
<tr>
<td>Hgb(^4)</td>
<td>8.1</td>
<td>9.0 - 15.1</td>
<td>g/DL</td>
</tr>
<tr>
<td>MCV(^5)</td>
<td>45.2</td>
<td>41 - 58</td>
<td>fl</td>
</tr>
<tr>
<td>WBC(^6)</td>
<td>21.0</td>
<td>5.5 - 19.5</td>
<td>x10(^9)/L</td>
</tr>
<tr>
<td>Neutrophils</td>
<td>16.1</td>
<td>2.5 - 12.5</td>
<td>x10(^9)/L</td>
</tr>
<tr>
<td>Lymphocytes</td>
<td>1.7</td>
<td>0.7 - 6.8</td>
<td>x10(^9)/L</td>
</tr>
<tr>
<td>Monocytes</td>
<td>3.0</td>
<td>0.15 - 1.7</td>
<td>x10(^9)/L</td>
</tr>
<tr>
<td>Eosinophils</td>
<td>1.2</td>
<td>0.1 - 0.8</td>
<td>x10(^9)/L</td>
</tr>
<tr>
<td>Platelets</td>
<td>390</td>
<td>170 - 600</td>
<td>k/µl</td>
</tr>
</tbody>
</table>

1 = Alanine Aminotransferase  
2 = Alkaline Phosphatase  
3 = Red Blood Cell Count  
4 = Haemoglobin concentration  
5 = Mean corpuscular volume  
6 = White blood cell count

- List and explain the abnormalities from these results (20%)  
- Can you reach a definitive or probable / preferred clinical diagnosis? Explain your reasoning (20%)  
- What other investigations would you like to perform, and why? (20%)  
- Based on your preferred diagnosis, plan a treatment regime for this cat, and explain why the different components of the treatment might be of benefit to the cat. (40%)  

OR

3b. A four-year old cat is brought into your clinic within one hour of being hit by a car. The cat is quiet, recumbent and has regular breathing. There is blood around the cat’s muzzle and on the fur of its pelvic limbs. You admit the cat to your hospital.
Outline your plan of action of investigation and immediate treatment for this patient to be carried out over the first 2 hours that the animal is in the hospital. Justify your choice of investigations. (60%)

Your investigation reveals that the only significant problem requiring further treatment is a wound involving an area of skin and tissue loss approximately 2cm in diameter centred on the medial malleolus at the tarsus of the left pelvic limb. You can see exposed bone in the centre of the wound.

With the cat under general anaesthesia, outline the steps you will take to deal with this wound. (40%)

SECTION B
Answer all 10 questions

1. Explain the life cycles of the common roundworms of dogs in the UK. What precautions should owners take against these parasites and why? (50%) (50%)

2. List the principle historical features (40%), clinical signs (40%) and clinical pathology findings (20%) of feline hyperthyroidism.

3. Hypertension is increasingly recognised as an important condition in cats:
   - Define feline hypertension (20%)
   - What conditions cause feline hypertension? (40%)
   - What clinical abnormalities in cats can arise as a consequence of hypertension? (40%)

4. List causes of polyuria and polydipsia in dogs (40%) Indicate the most common conditions (20%). Briefly outline a strategy to reach a diagnosis (40%).

5. What is keratoconjunctivitis sicca (KCS)?
   - What are the usual clinical signs? (20%)
   - How would you confirm the diagnosis? (20%)
   - What drug or surgical treatments are available for this condition? (40%)

6. List the 5 most important differential diagnoses you would consider for an adult rabbit presented with anorexia, pyrexia, depression, ocular and nasal discharge and sneezing. (40%) What investigations would you make? (30%) and what implications are important for other rabbits that have been in contact with this patient? (30%)

7. State your preferred primary anaesthetic system (induction and maintenance)
for a 35Kg dog undergoing a 2.5 hour surgery for a pelvic fracture repair (30%).
List the additional pre-operative, intra-operative and post operative drugs you
want to use with a brief justification of each one (70%).

8. Describe an appropriate repair system for a comminuted diaphyseal fracture at
the junction of the proximal 2/3rd, and distal 1/3rd of the feline humerus.

9. What types of inflammatory arthritis are there? (40%). What are the principal
diagnostic features of Type I idiopathic immune mediated polyarthropathy (non
infections, non erosive)? (40%). How would you treat this disease? (20%)

10. List the clinical (physical and observational) tests that you would use to localise
a lesion in a 5-year-old paraplegic dachshund (70%). If these tests indicate a
lesion in the mid lumbar region what further diagnostic options would you
advise? (30%)

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Examination Subject | PRODUCTION ANIMALS

SECTION A
Answer either (a) or (b) from each of the 3 pairs of questions

1a. Prepare a “client newsletter” for distribution to farm animal clients on the topic
of Salmonellosis in dairy cattle including what the client should do if they
suspect the condition and describe the advice on treatment and prevention a
good veterinary practice would include in the newsletter. Use language
appropriate to communicate with educated farmers.

OR

1b. Describe in order the events that you would expect to occur to a Holstein dairy
cow in the 12 months following her calving on September 1st until her next
calving. The herd has regular fertility visits from a veterinary practice. Indicate
target management events and common diseases the cow may be particularly at
risk from during each period.

2a. Vaccination is an important tool in preventing morbidity and mortality due to
respiratory disease in growing beef calves. Farmers often require assistance in
selecting appropriate vaccines and designing vaccine programmes against this
disease complex. Discuss your approach to assisting the farmer in deciding:

• whether to vaccinate the calves (50%)
• which vaccine(s) to use (50%)

OR

2b. You are called to investigate a lameness problem causing both production loss
and welfare issues on a 150 Holstein cow commercial dairy unit owned by Mr
Blobby. One year ago lameness rates were on average 12-15 cases/year but this
has now increased to an average of 15 cases/month. Results of two of your
investigations are shown in Tables 1 and 2:

- Describe your clinical approach to investigating this problem (30%)
- Use the data from Tables 1 and 2 to rationalize your opinion on the likely causes of lameness on this farm (40%)
- Outline a cost-effective plan for reducing lameness in this enterprise (30%)

Figure 1: Locomotor Score of 54 adult dairy cows at Blobby’s Farm

<table>
<thead>
<tr>
<th>Lameness score</th>
<th>Number of cows</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>18</td>
</tr>
<tr>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
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</table>

Figure 2: Dimensions of cubicles at Blobby's Farm compared to the ideal measurements for Holstein milking cows. Total of 86 cubicles on farm.

<table>
<thead>
<tr>
<th></th>
<th>Ideal Measurements (inches)</th>
<th>Blobby’s Farm (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>96</td>
<td>83</td>
</tr>
<tr>
<td>Bar length</td>
<td>86</td>
<td>72</td>
</tr>
<tr>
<td>Brisket board height</td>
<td>16</td>
<td>11</td>
</tr>
<tr>
<td>Division height</td>
<td>45</td>
<td>43</td>
</tr>
<tr>
<td>Width</td>
<td>49</td>
<td>42</td>
</tr>
<tr>
<td>Step height</td>
<td>6</td>
<td>8</td>
</tr>
</tbody>
</table>

3a. Outline the advice you would give to a commercial beef farmer planning to buy a bull from a pedigree bull sale.

OR

3b. You are called to examine a 5-year old Friesian Holstein cow that was pregnant to a Charolais bull and, on her expected calving date has been straining (abdominal contractions) for 8 hours, but with no apparent progress. The dairyman has performed a vaginal examination and can identify two feet. Describe your diagnostic steps and further approach to this case.

SECTION B
Answer all 10 questions

1. Outline the treatment you would give to a dairy cow with peracute mastitis caused by E.coli.

2. Write short notes on the contagious ovine digital dermatitis (CODD) and its control in the U.K.

3. Outline the diagnosis and control of abortion caused by Neospora Caninum in Cattle in the U.K.
4. Write short notes on methods of reducing tail biting in housed growing pigs.

5. Describe how hypomagnesaemia can be prevented in beef suckler cows.

6. You have been called to examine an outbreak of diarrhoea in 10 day old piglets from a 200 sow indoor piggery. Describe how you would pursue a diagnosis in this herd and describe your therapeutic approach for the three most likely pathogens.

7. Describe your clinical approach to treating a 15 mm diameter squamous cell carcinoma (cancer eye) lesion on the lower eyelid of a valuable pedigree Hereford heifer.

8. Briefly describe an appropriate endoparasite control programme for a lowland sheep flock in southern England.

9. Outline your clinical approach to a dairy herd with a recently diagnosed case of Johne’s disease (Mycobacterium paratuberculosis infection).

10. In consideration of the likely differentials, briefly describe your diagnostic and therapeutic approach to a periparturient recumbent ewe.

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<table>
<thead>
<tr>
<th>Examination Subject</th>
<th>VETERINARY PUBLIC HEALTH</th>
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<tbody>
<tr>
<td>SECTION A</td>
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<tr>
<td>Answer either (a) or (b) from each of the 3 pairs of questions</td>
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<tr>
<td>1a. From a public health perspective, discuss the risk of food being a vector of members of the <em>Mycobacteria</em> spp. (50%). Include in your answer the possible controls and their effectiveness (50%).</td>
<td><strong>OR</strong></td>
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<tr>
<td>1b. List the measures which can be employed to reduce the risk of the spread of Brucellosis once it is confirmed on a dairy farm (60%). Select the most important of these and explain why (40%).</td>
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<tr>
<td>2a. Describe the causative agent and transmission of bovine spongiform encephalopathy (BSE) (20%), the BSE-related control activities at slaughter (20%), and the surveillance approach used in the EU (40%).</td>
<td><strong>OR</strong></td>
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<tr>
<td>2b. One of your clients reports abortions in his sheep. List 3 zoonotic pathogens that you consider in this context in the UK. Briefly describe the clinical signs in sheep (30%) and humans (20%) and propose control options in the event of pathogen confirmation (50%).</td>
<td></td>
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<tr>
<td>3a. In the UK, who is responsible for deciding whether or not an animal is</td>
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fit for transport (20%)? Describe the principles that apply when deciding whether or not a cow is fit for transport (40%). Outline the criteria that you would consider in deciding whether or not a dairy cow that is blind is fit for transport to an abattoir (40%).

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3b. Under what circumstances is slaughter of livestock and poultry without stunning permitted in UK countries (30%)? Describe the main signs of an effective stun when using (a) a captive bolt gun, and (b) head-only electrical stunning (60%). What are the recommended minimum stun-to-stick intervals for stunning in pigs and calves (10%)?

**SECTION B**

Answer all 10 questions

1. • Describe the subsequent cuts necessary after finding a cysticercus in a bovine cheek muscle at routine post mortem meat inspection (60%).

   • What is the judgement and action required by the UK Fresh Meat (Hygiene and Inspection) Regulations (40%).

2. Hazard Analysis Critical Control Point (HACCP) is part of the risk management strategy to prevent the transmission of pathogens to consumers via milk. Identify the HACCP control points from stable to table as the milk progresses from the bulk milk tank on the farm to the container of milk ready for retail sale (100%).

3. • Briefly describe the steps in cleaning and disinfection of a large red meat slaughterhouse (70%).

   • List three methods available to a plant operator to check the efficiency of cleaning and disinfection (30%).

4. Describe the action required at routine post mortem meat inspection on finding:

   • Over-scalding in poultry (20%)
   • Emaciated sheep carcase (20%)
   • Ox liver with chronic fascioliasis (20%)
   • Badly bled pig carcase (20%)
   • Badly bruised deer carcase (20%)

5. Describe, using examples, why ante-mortem inspection for both red meat animals and poultry is essential as part of a meat hygiene service (100%).

6. List three zoonotic pathogens that may be shed in faeces of healthy dogs in the UK (50%)? What risk factors determine the likelihood of transmission of the
infection to the owner or handler (50%)?

7. What is meant by the term “cascade procedure” in relation to the use of a veterinary medicinal product (30%)? Describe the conditions of and steps to applying this procedure in food-producing animals (70%).

8. What are the introduction pathways of Bluetongue virus into a farm (40%) and how can they be affected by biosecurity measures (60%)?

9. You have isolated a methicillin-resistant strain of Staphylococcus aureus from a wound infection in one of your cat patients. What is the risk this poses to you, your staff, the owner and other patients (50%)? How can the risk be reduced (50%)?

10. Briefly describe the level of occurrence of highly pathogenic avian influenza in the European Union (30%). What are the introduction pathways of this pathogen to the UK (40%) and how would an outbreak be controlled (30%)?

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