The information provided in this Handbook is correct at the time of publication. Candidates should check that there have been no alterations/amendments since the date of publication. Enquirers should check with the Australasian Veterinary Boards Council Inc. for updated information.

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Introduction

The National Veterinary Examination (NVE) is designed to assess, for registration purposes, the veterinary knowledge and clinical competences of overseas qualified veterinarians whose veterinary qualifications are not recognised by State or Territory Registration Boards in Australia or the Veterinary Council of New Zealand.

The Preliminary (MCQ) Examination focuses on basic and applied veterinary knowledge across a wide range of topics. The Final (Clinical) Examination also assesses clinical competence in addition to the understanding and application of veterinary knowledge.

The NVE is based on the competences of the veterinary profession as benchmarked against Australasian graduates.

The standard required to pass may be difficult to obtain by candidates who:

- qualified a number of years ago, perhaps have worked in a narrow area and who have not undertaken substantial revision of the basic subject matter of the examination;
- obtained a basic qualification which does not adequately cover all the subjects covered by the examination and who have not undertaken further study to remedy these shortcomings;
- have failed to familiarise themselves with the relevant legislation or with the husbandry, diseases and conditions of animal species to be commonly found in Australasia; or
- have entered the examination without sufficient fluency in the English language.

The NVE Board of Examiners ensures that the format and content of the NVE is consistent with undergraduate veterinary courses and the standard of examinations in Australasian veterinary schools, with an emphasis on the circumstances common in Australasia. Members of the Board have broad expertise over the full range of disciplines covered in the NVE examinations.

1. **ASSESSMENT PROCEDURE**

The assessment procedure consists of three separate components:

1. an **Eligibility Assessment**, which is carried out by AVBC to assess whether the applicant is eligible to sit the NVE (written and clinical components). This includes an English language test - either the Occupational English Test (OET) OR the academic module of the International English Language Testing System (IELTS) OR the Test of English as a Foreign Language (TOEFL-iBT) OR the Pearson Test of English Academic (PTE Academic) - for applicants whose native language is not English;

2. a **Preliminary (MCQ) Examination** consisting of two papers, set in English, in multiple choice question (MCQ) format, held in Australia and overseas; and

3. a **Final (Clinical) Examination** in clinical veterinary medicine and surgery conducted in English once per year over several days, and only in Australia. The Preliminary (MCQ Examination must be successfully completed before the Final (Clinical) Examination is attempted.
Step 1: Eligibility Assessment
- Appropriate veterinary degree/diploma
- Registration, licence or eligibility to work as a veterinarian overseas
- English language assessment

(Note: for each step and each exam in those steps these checkbox criteria must all be met)

Yes

Native English speaker born and educated in UK, Ireland, Canada, USA, Australia, NZ or South Africa (with evidence)?

No

Undertake Board of Examiners (BoE) approved English language assessment

NB: Must pass all sections at same attempt

Passed <2 yrs?

Yes

Resit / may be waived by BoE

No

Step 2: Preliminary Examination (MCQ)
- Current English language assessment
- 1st, 2nd or 3rd consecutive attempt?

No

See Step 1

No

Wait 2 years and seek counselling

Sit examination

Pass?

No

Restart Step 2

Yes

Step 3: Final (Clinical) Examination
- Current English language assessment
- 1st attempt <2.5 years since passed MCQ
- Final attempt <5 years since passed MCQ
- 1st or 2nd attempt?

No

See Step 1

No

Back to Step 1

No

Back to Step 1

No

Seek BoE approval for 3rd attempt

Sit whole examination

Pass all sections?

No

Supplementary exams?

Yes

Counselling, Training Plan & Case Log

Resit

Yes

Pass?

No

Finished

Yes
2. EXAMINATION PROCEDURES

2.1 Eligibility Assessment

Before enrolling candidates for the Preliminary (MCQ) Examination, the AVBC assesses their eligibility to sit for the NVE. You are eligible to sit the examination if you:

1. hold a degree or diploma awarded after at least four years of study at a veterinary school which listed in the AVMA-Listed Veterinary Colleges of the World or at a school which was part of a college or university listed in the "World List of Universities"; and
2. are registered, licensed or eligible to be recognised as a veterinarian of good standing in the country in which you studied or worked;
3. hold a current pass in the OET or IELTS (academic) or TOEFL-iBT or PTE Academic to the standard required by AVBC.

2.2 English Language Assessment

Native speakers of English born and educated in the UK, Ireland, Canada, USA, Australia, New Zealand and South Africa are exempt from the English language assessment requirement. Candidates should provide supporting evidence with their application.

Applicants whose native language is not English must pass either the Occupational English Test (OET) OR the academic module of the International English Testing System (IELTS academic) OR the Test of English as a Foreign Language (TOEFL-iBT) OR the Pearson Test of English Academic (PTE Academic) before applying for the NVE eligibility assessment.

The OET is administered by the Centre for Adult Education (CAE) Australia. The test includes written, listening, reading and speaking sections and is held in Australia and overseas. A candidate must pass the OET with a B Pass or higher in each section to satisfy the English language requirement before applying for the NVE.

The International English Language Testing System (IELTS) examination is an alternative to the OET. It must be completed with a score of at least a 7 in each section of the academic (not the general) module.

The Test of English as a Foreign Language (TOEFL-iBT) examination is another alternative English language test. It must be completed with scores of at least 24 in Listening, 24 in Reading, 27 in Writing and 23 in Speaking.

The Pearson Test of English Academic (PTE Academic) is another English language proficiency test accepted by the AVBC. It must be completed with a score of at least 65 in each of the four communicative sections of the test.

Should you fail to achieve the required standard in the English language examination, you must re-sit the entire examination. The Board of Examiners does not permit re-sits of sub-sections of the examination.

Information about applying for the OET, IELTS (academic), TOEFL-iBT or PTE Academic can be obtained from the English language test providers. See page 44 of this handbook for their website addresses and contact details.

The currency of a pass in the OET/IELTS/TOEFL-iBT/PTE Academic test will be two years. The test must be re-taken after that time. In the case of a candidate continuously living and working OR living and studying in an approved English-speaking country, the requirement to re-test may be waived by the Board of Examiners provided the candidate can provide sufficient evidence to establish that English skills have been maintained, and that the previous test satisfies current standards.
2.3 Preliminary (MCQ) Examination

A candidate must sit the Preliminary (MCQ) Examination within the period of validity of the English results (OET, IELTS, TOEFL-iBT or PTE Academic), that is, two years. Subsequent attempts at the Preliminary Examination must also be within the validity period of the English test. This can be either by re-sitting the test to current standards or by re-validating a previous test (which satisfies current standards).

The Preliminary Examination, consisting of multiple choice questions, may be undertaken in a number of the State capital cities. For those applicants who live overseas, venues are organised in some overseas countries from time to time.

The Preliminary Examination is normally held during April each year. Both papers must be completed in the one examination session which is held over 1 day. Once successfully completed, the candidate must attempt the Final (Clinical) Examination within 2.5 years of passing the Preliminary Examination.

2.4 Final (Clinical) Examination

The Final (Clinical) Examination is conducted only in Australia and is normally held in November each year. You must pass the Preliminary (MCQ) Examination to be eligible to apply for the Final (Clinical) Examination. Applicants whose native language is not English should ensure that they maintain a high level of English language competence in preparation for this examination.

The Final (Clinical) Examination must be completed within five years of passing the Preliminary (MCQ) Examination or the candidate will be required to re-start the NVE process.

If you are eligible to sit the Final Examination but are resident overseas, you may be able to obtain an appropriate short-stay temporary visa to enter Australia for the purpose of sitting the examination. For further details concerning visa issues, please contact your nearest Australian Embassy, High Commission, Consulate or the Australian Government’s Department of Home Affairs.

2.5 Selection criteria for places in the Final (Clinical) Examination

The Final (Clinical) Examination can generally only accommodate a maximum of sixteen candidates.

In the event of oversubscription the Board of Examiners will offer places based on a priority ranking, the details of which are available from the NVE Coordinator.
2.6 Certificate

Following the successful completion of the Preliminary and Final Examinations, you are eligible to receive a Certificate issued by the AVBC. The Certificate in Veterinary Science entitles you to apply for full registration in any State or Territory in Australia or in New Zealand. You should present this Certificate to the Veterinary Board in the State or Territory in which you intend to register or to the Veterinary Council of New Zealand. The addresses of the Boards are given at the end of this booklet (see Appendix B).

3. APPLICATION PROCEDURES

3.1 Outline of Procedures

You need to apply to AVBC for an Eligibility Assessment of qualifications. Forms are available on the AVBC website.

When you enrol in the NVE you will be given a copy of the “Rules of Conduct” for the NVE. These relate to the Preliminary and Final examinations, and outline your responsibilities and obligations as a candidate.

If you are assessed as eligible to undertake the NVE process you will be sent an application form for the Preliminary (MCQ) Examination.

Once you successfully pass the Preliminary (MCQ) Examination, you will be sent an application form for the Final (Clinical) Examination and documentation to assist your preparation.

3.2 Closing date for applications

The closing date for the acceptance of applications to sit the Preliminary (MCQ) Examination is 8 February each year. Late applications will not be considered.

The closing date for the Final (Clinical) Examination, which is usually held in November each year, is 1 September.
4. EXAMINATION FEES

4.1 Fees Payable

All fees are payable in advance by candidates attempting the examination. The session fees can be obtained from the AVBC website or by contacting the AVBC Office on (03) 9620 7844. Each fee allows only one attempt at each examination. If you are allowed to sit again, a separate application to sit the examination must be completed and another examination fee paid.

Payment by direct transfer or credit card is preferred. Cheques/money orders should be in Australian dollars made payable to the “AVBC Inc”. If you are resident overseas this fee must be paid as a bank draft or bank cheque and must nominate an Australian bank on it.

4.2 Withdrawal Fees

Once you have applied and been accepted for a particular examination session, withdrawal from the examination session will result in a cancellation fee.

Concerning the Preliminary (MCQ) Examination, if notice of the withdrawal is received more than four weeks prior to the examination, a cancellation fee of A$760 will apply and this will be deducted from the amount of examination fee to be refunded. The examination fee will be forfeited altogether if the withdrawal is made less than four weeks prior to the examination, unless a medical certificate is provided in which case the A$760 cancellation fee will apply.

Concerning the Final (Clinical) Examination, withdrawal more than 8 weeks before the start of the examination will result in a cancellation fee of A$1,900. Withdrawal less than 8 weeks before the start of the examination will result in the total fee being forfeited.

Withdrawal from a supplementary examination will result in the total fee being forfeited.

Withdrawal from the OET/IELTS/TOEFL-iBT/PTE Academic would need to be discussed with CAE, IELTS, ETS or Pearson.
5. **PRELIMINARY (MCQ) EXAMINATION**

5.1 Nature of the Preliminary (MCQ) Examination

The Preliminary (MCQ) Examination is in multiple choice question format and will be administered via secure computer delivery at selected venues. It is designed to test your general knowledge of veterinary science and the clinical and technical procedures relevant to practice in Australasia.

Recent results indicate that some candidates need to take greater care in preparing for the examination by studying more broadly and in greater depth. Many of the questions test clinical judgement or the ability to use specific knowledge. Candidates should attempt to analyse each question thoroughly before giving their answer.

5.2 Number of attempts at the Preliminary (MCQ) Examination

There is a limit on the number of attempts that can be made at the Preliminary (MCQ) Examination. If a candidate fails the MCQ three times, the candidate will be required to wait for two years before being permitted to re-sit the MCQ; the candidate will also be required to seek counselling from a Board of Examiners member. All attempts must be within the validity period of the English test as outlined in section 2.2 of the Handbook.

5.3 General Information on the Preliminary (MCQ) Examination

The examination is conducted on one day and under strict supervision.

Calculators or other mechanical aids are neither required nor permitted. Scrap paper may be provided in the Preliminary (MCQ) Examination.

Candidates who enrol for the Preliminary Examination will be given access to a short practice test. Its purpose is to assist candidates to familiarise themselves with computer-based (online) exam delivery - rather than content.

There are two papers:

- **Paper 1**: Base knowledge (general knowledge of veterinary science); and
- **Paper 2**: Clinical reasoning (clinical judgement and the ability to apply specific knowledge).

Paper 1 has 120 questions and Paper 2 has 100 questions. You will have three hours to complete each paper. There will be a scheduled break in between the two papers. The papers contain questions covering the following areas of veterinary work:
## TOPIC GUIDE - PRELIMINARY (MCQ) EXAMINATION
(note: these are approximate figures only)

### PAPER 1 - BASE KNOWLEDGE

<table>
<thead>
<tr>
<th>TOPIC</th>
<th>SUB-TOPIC</th>
<th>Approx no. Q’ns in Paper</th>
</tr>
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<tbody>
<tr>
<td>1. Anatomy</td>
<td>1. Anatomy</td>
<td>4</td>
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<td>2. Physiology</td>
<td>1. Physiology</td>
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<td>2. Pathophysiology</td>
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<td>2. Reproduction</td>
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<td>3. Welfare</td>
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<td>4. Animal Behaviour</td>
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<td></td>
<td>5. Other</td>
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<td>4. Pathology &amp; Clinical Pathology</td>
<td>1. Other</td>
<td>15</td>
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<td>2. Alimentary tract</td>
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<td>3. Cardiovascular</td>
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<td>5. Musculoskeletal</td>
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<td>6. Respiratory</td>
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<td>7. Endocrine</td>
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<td>8. Urinary</td>
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<td>9. Reproductive - male &amp; female</td>
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<td><strong>10. Not allocated</strong></td>
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<td></td>
<td>11. Skin and mammary</td>
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<td>12. Lymphoreticular</td>
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<td>13. Special sense</td>
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<td>14. Hepatobiliary / pancreas</td>
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<td>15. Haematology</td>
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<td>16. Biochemistry</td>
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<td>17. Cytology</td>
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<td>18. Body fluids</td>
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<td></td>
<td>19. Serology</td>
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<td>5. Infectious Diseases</td>
<td>1. Bacterial</td>
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<td>2. Viral</td>
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<td>3. Protozoal</td>
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<td>4. Parasitic</td>
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<td>5. Fungal</td>
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<td>6. Exotics</td>
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<td>7. Other</td>
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<tr>
<td>Topic</td>
<td>Subtopics</td>
<td>Total</td>
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<td>-------------------------------------------</td>
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<tr>
<td>6. Toxicology</td>
<td>1. Naturally occurring toxins (plants, feed)</td>
<td>6</td>
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<td>2. Envenomation</td>
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<td>3. Pollutants / poisons</td>
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<tr>
<td>7. Pharmacology / Therapeutics</td>
<td>1. Antimicrobial</td>
<td>10</td>
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<td>2. Prophylaxis (worm treatment, vac.)</td>
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<td>3. Anti-inflammatory / analgesic drugs</td>
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<td>4. Drug interaction</td>
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<td>5. Other</td>
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<tr>
<td>8. Public Health</td>
<td>1. Principles of Epidemiology</td>
<td>10</td>
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<td>2. Zoonoses</td>
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<td>3. Food Safety</td>
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<td>9. Professional Practice</td>
<td>1. Therapeutic Regulations</td>
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<td></td>
<td>2. Radiation Safety</td>
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<td>3. EHS/PPE</td>
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<td>4. Ethics</td>
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<td>5. Euthanasia</td>
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<td>6. Other Legal</td>
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<tr>
<td>10. Surgical / Anaesthesia / Imaging</td>
<td>1. Principles of asepsis</td>
<td>15</td>
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<tr>
<td>Principles</td>
<td>2. Wound healing</td>
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<td></td>
<td>3. Surgical technique</td>
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<td></td>
<td>4. Anaesthesia - Monitoring</td>
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<td>5. Anaesthesia - Effects</td>
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<td></td>
<td>6. Pain assessment and management</td>
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<td>7. Radiographic practice</td>
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<td></td>
<td>8. Other imaging</td>
<td></td>
</tr>
</tbody>
</table>

Total for Paper 1: 100 questions + 20 pilot questions (which are not scored)
**PAPER 2 - CLINICAL REASONING**

**SPECIES**

1. Equine
2. Cats
3. Dogs
4. Cattle
5. Other Ruminants (eg sheep, goats, alpacas)
6. Pigs & Poultry
7. Pocket Pets & Birds
8. Other

For each **SPECIES**, questions will be based on case presentations.

**PRESENTATION OF A CASE**

1. Lameness
2. Red eye, blindness, manky eye
3. Lumpy, hairy, bald & itchy
4. Fistula, fistulae & abscesses
5. Diarrhoea
6. Abdominal pain distension
7. Vomiting / regurgitation
8. Dyskinesia, constipation and straining (tenesmus)
9. Jaundice/pallor, bleeding
10. Dyspnea, nasal discharge
11. Stridor / cough
12. PUPD (Polyurea/Polydypsia)
13. Urinary incontinence, stranguria, haematuria
14. Nervous signs (seizures, tremors, ataxia, abnormal behaviour etc)
15. Syncope, collapse, weakness
16. Sudden death
17. Prolapse
18. Weight loss & dysphagia
19. Poor performance
20. Lethargy / anorexia
21. Pyrexia
22. Trauma
23. Dystocia, still birth, infertility, abortion
24. Neonates

Total for Paper 2: 80 questions + 20 pilot questions (which are not scored)
5.4 Sample Examination Items

For sample MCQ questions please refer to Appendix D. Sample questions are intended to give an indication of the format of the examination. They do not represent the degree of difficulty or scope of any part of the examination. You should note that test-taking skills are no substitute for knowledge. Please note that marks are not deducted for incorrect answers, so be sure to attempt all questions.

5.5 Pass Mark for the Preliminary (MCQ) Examination

Results of the Preliminary (MCQ) Examination are sent in writing by email within eight weeks. Please note that no results are given by telephone.

AVBC commenced a new scoring system in September 2012 that utilises Rasch methodology. This robust framework has been introduced worldwide for high stakes examinations, and yields very precise measures of candidate performance. The measure of required candidate ability is called the ‘cut-score’ and this is precisely determined for the AVBC MCQ exam, especially for borderline candidates. Rasch methodology provides exactly the same standard to pass the exam, irrespective of the cohort and the difficulty of the specific paper.

The Board of Examiners is confident that the scoring methodology is a fair and professional assessment of competence to pass the Preliminary (MCQ) Examination.

If you fail the Preliminary (MCQ) Examination, you must re-sit both papers at your next attempt.
6. FINAL (CLINICAL) EXAMINATION

6.1 Nature of the Final Examination

You can only take this exam after you have passed the Preliminary (MCQ) Examination. Your OET, IELTS, TOEFL-iBT or PTE Academic pass to the standard required by the AVBC also needs to be current or re-validated (see section 2.2).

This examination is in twelve sections, each taking between one and two hours. There will usually be two examiners present for each section. There may also be an observer from AVBC present for some sections. Depending on the number of candidates, the whole test takes from four to five days to complete.

All subjects are examined at a level based on the competency standards of the veterinary profession as benchmarked against Australasian graduates.

The Final (Clinical) Examination is held at an Australian veterinary school (usually at the University of Queensland Gatton campus). It is the candidate’s responsibility to arrange and meet all costs for accommodation and travel. You will be required to bring coveralls, gumboots or other sturdy closed shoes, a clinical thermometer and stethoscope to the Final (Clinical) Examination.

6.2 General Information on the Final Examination

Candidates taking this examination are encouraged to critically consider whether the education they received is sufficient to provide them with the necessary skill level to perform at the required standard of competency. For example, to succeed in the surgery and anaesthesia sections, candidates should have some experience performing small-animal surgery and anaesthesia in an instructional or clinical setting prior to attempting the examination.

Candidates should have clinical experience and basic animal handling/husbandry skills working with the live species used in this exam. Most emphasis is placed on the dog, horse, cow and sheep. A candidate lacking in experience working with any of these species must gain this experience before taking the examination.

NB: AVBC cannot assist with organising practical experience. It is up to the candidate to contact veterinary practices and organisations directly.

After a candidate has passed the Preliminary (MCQ) Examination, they are advised to contact the relevant veterinary registration board (see Appendix B) for advice about the steps to take to gain some form of ‘limited’, ‘specific’ or ‘conditional’ registration which would allow them to work under supervision while they prepare for the Final (Clinical) Examination.

Although experience gained from reading material and viewing videotapes, DVDs, CDs, PowerPoints, etc, is helpful in preparing for the examination, these are not a substitute for the "hands-on" clinical instructional experience outlined above.

In the Clinical Examination, you will need to demonstrate your ability to make appropriate decisions about diagnostic steps, treatment regimens and control plans on the spot, using histories and case information provided by the examiner.

The examination tests your knowledge of disease and animal management under Australasian conditions at a level that will allow you to practise effectively in Australasia. In some of the sections you may be given a series of clinical signs, and you will be asked for a differential diagnosis. You need to be able to explain why you have come to a particular diagnosis. You will be expected to know specific information but it is not a simple exercise in fact recall. You may be expected to work through problems just as you would in veterinary practice. So competence in clinical deduction and problem-solving is critical to allow adequate performance in this exam.
You will be expected to show manipulative skills, demonstrate competencies, to make observations and interpret them. Manipulative skills and surgical procedures must be combined with humane animal handling.

The Clinical Examination covers the following areas:

<table>
<thead>
<tr>
<th>Knowledge of management systems used in the care of Australasian companion and agricultural animals. This includes feeding systems, especially pasture management and breeding systems, including natural and artificial breeding and embryo transfer, oestrus synchronisation and parturition induction;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to handle and restrain animals of all domestic species (eg the handling of sheep);</td>
</tr>
<tr>
<td>Diagnostic skills including making a clinical examination and arriving at a differential diagnosis, interpretation of post mortem specimens, applying field tests in clinical pathology and the collection and delivery of specimens to the laboratory.</td>
</tr>
<tr>
<td>Some knowledge of the common poisonous plants is expected;</td>
</tr>
<tr>
<td>Clinical therapeutics including the drugs used for the common diseases, techniques used in treatment and the legislation concerning scheduled drugs;</td>
</tr>
<tr>
<td>Disease control programs and preventive medicine generally;</td>
</tr>
<tr>
<td>Animal welfare considerations occurring in veterinary practice;</td>
</tr>
<tr>
<td>Legal constraints on the delivery of veterinary services to the public;</td>
</tr>
<tr>
<td>Writing reports and certificates.</td>
</tr>
</tbody>
</table>

You will not be expected to know the fine details of local legislation, uncommon drugs, or local names for plants, bacteria or parasites.
6.3 Number of Attempts at the Final Examination

If a candidate does not meet the required standard of competency in any section of the Final (Clinical) Examination the candidate will be required to provide evidence that they have undertaken appropriate activities that will enhance their veterinary knowledge and experience before being allowed to proceed further in the NVE.

The following procedure will apply:

- Feedback will be provided to the candidate by the chief examiner on the areas of weakness.
- A counselling session will be arranged with a Board member involving discussion on how the candidate proposes to gain the experience and additional training required.
- The candidate will be required to submit an additional training plan to the Board member.
- The candidate will be required to keep a case log of additional training and submit it to the Board member and the NVE Coordinator at least one month before the examination, to verify that they have gained additional training and experience.
- A decision will then be made as to whether they can proceed to the supplementary examination or to re-sit the whole examination, whichever is applicable.

If a candidate for the Final (Clinical) Examination has not been successful in two attempts, a third and final attempt must be approved by the Board of Examiners.

If a candidate does not meet the required standard of competency in a supplementary examination, only one more attempt at that supplementary exam will be granted. If the candidate does not meet the required standard of competency in a second attempt at a supplementary exam then the candidate will have to repeat the entire Final (Clinical) Examination and will have to abide by the rules of the Final (Clinical) Examination including time limits and validation of English proficiency.

The Final (Clinical) Examination must be completed within five years of passing the Preliminary (MCQ) Examination otherwise the candidate will be required to re-start the NVE process.
6.4 Detailed Description of the Final (Clinical) Examination

SECTION 1: COMPANION ANIMAL MEDICINE

(a) Canine medicine
- Clinical examination of a preselected body system on a dog. You will be expected to explain the parameters you are checking in your examination. You will have 10 minutes to perform the clinical examination.
- You will be given one or more laboratory reports produced from samples taken from a clinical case. After your assessment of the results, you will be asked to discuss their importance or relevance and how they might assist in deciding the possible diagnoses and outcomes to treatment.
- Discussion on one or more case histories. You will be required to outline your management, or any further tests that may be required to aid your likely diagnosis and treatment outcomes of each case.

(b) Feline medicine
- Discussion on one or more case histories including laboratory reports. You will be required to outline your management, or any further tests that may be required to aid your likely diagnosis and treatment outcomes of each case.

A range of tasks, competences, skills and knowledge will be examined and may include some or all of the following:

| Ability to interact with animal owners, colleagues and lay staff. |
| Ability to acquire, store and retrieve information. |
| Ability to humanely and appropriately handle and restrain an animal. |
| Ability to carry out a systematic physical examination. |
| Ability to detect and interpret abnormalities in an individual animal. |
| Ability to use diagnostic equipment. |
| Ability to utilise clinical pathology. |
| Ability to establish a provisional diagnosis and provide a rational prognosis. |
| Ability to develop an effective management, treatment and control plan. |
| Ability to identify realistic and practical options when veterinary care is required. |
| Ability to offer professional veterinary opinions. |
| Ability to offer valid, practical advice/instructions/direction for the delivery of veterinary care. |
| Ability to recognise when euthanasia is warranted. |
| Ability to recognize the limitations of available facilities and/or knowledge, and when to seek assistance or refer the case. |
SECTION 2: FOOD ANIMAL MEDICINE & SURGERY

(a) Cattle

(b) Small Ruminants - sheep, goats

You are expected to work through case scenarios with the examiners. The examination will include cattle and small ruminant cases covering medical and surgical problems. You will be examined on your ability to develop a logical and practical approach to investigating and managing each case. You will also be expected to discuss methods of controlling or preventing disease problems presented to you.

A range of tasks, competences, skills and knowledge will be examined and may include some or all of the following:

| Ability to acquire a useful case history. |
| Ability to critically observe an individual case and identify major abnormalities. |
| Ability to detect and interpret abnormalities in a group of animals. |
| Have an understanding of the application of diagnostic equipment, laboratory tests, clinical pathology, and necropsy examination. |
| Ability to establish a clinical diagnosis and provide a logical management plan and prognosis. |
| Ability to recognise the possibility of an uncommon endemic disease or exotic disease in differential diagnosis and to develop a plan to confirm the diagnosis, manage, treat and/or control such a disease. |
| Knowledge and understanding of intensive and extensive livestock husbandry and management. |
| Ability to recognise when anaesthesia and analgesia are warranted and implement effective techniques. |
| Knowledge and understanding of common surgical procedures and recommended aftercare. |
| Ability to recognize the limitations of available facilities and/or knowledge, and when to seek assistance or refer the case. |
SECTION 3: FOOD ANIMAL MEDICINE - MANIPULATIVE PROCEDURES

(a) Cattle

This is a practical hands-on session. You will be asked to perform a number of procedures commonly used in cattle medicine.

NOTE that manual pregnancy testing per rectum is regarded as an important skill in cattle practice and it will be given extra weighting. Candidates will be required to examine 3 cows and correctly diagnose them as either not detectably pregnant, pregnant less than 4 months or pregnant greater than 4 months. A time limit of approximately 10 minutes for this procedure will normally be applied (to allow you time to demonstrate competence in other procedures).

A list of basic cattle manipulative procedures to be tested in the Food Animal practical session will normally include:

- Pregnancy testing per rectum;
- Examination of the mouth;
- Passing a stomach tube;
- Restraining a cow and injecting a solution into the Jugular vein;
- Collecting a blood sample from the tail vein;
- Giving an epidural anaesthesia;
- Lifting and restraining a cow’s front or back leg;
- Aseptically collecting a milk sample.

But may also include:

- Basic obstetric procedure.
(b) Small ruminants - sheep, goats

This is a practical hands-on session. You may be asked to perform a number of procedures commonly used in sheep or goat medicine. A list of basic sheep or goat manipulative procedures to be tested in the food animal practical session will include being asked to observe and examine a number of sheep or goats in a small yard. As well you may be asked to:

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Description</th>
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<tbody>
<tr>
<td>Stand outside the pen, observe the animals and comment on what you see:</td>
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<tr>
<td>Observe a number of sheep or goats while standing in the pen using techniques to make the animals circle the observer one way and then in the reverse direction;</td>
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<tr>
<td>Catch and carry out a clinical examination on a sheep or goat (you need to be able to correctly and confidently ‘tip’ a sheep);</td>
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<tr>
<td>Take the temperature per rectum;</td>
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<tr>
<td>Demonstrate how to collect a blood sample from the Jugular vein with an assistant to hold the sheep either on its rump or standing;</td>
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<tr>
<td>Examine mouth and teeth;</td>
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<tr>
<td>Discuss the significance of ‘daggy’ tail;</td>
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<tr>
<td>Examine feet and use a searcher knife to check for footrot;</td>
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<tr>
<td>Take a faecal sample for culture;</td>
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<tr>
<td>Palpate several rams’ testicles and discuss the findings.</td>
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</tbody>
</table>
SECTION 4: FOOD ANIMAL MEDICINE & PRODUCTION - INTENSIVE/EXTENSIVE

(a) Pigs

(b) Poultry

Australia and New Zealand have intensive and extensive pig and poultry farms which require you to have a basic working knowledge of industry practices. While individual animals have an importance from a disease control point of view, the main objective is to achieve high productivity in a cost-effective manner whilst maintaining healthy pigs and poultry.

You will be expected to understand basic husbandry procedures concerning:

- Disease control within these intensive and free-range animal production establishments;
- Quarantine in the event of disease outbreak (including endemic and exotic diseases);
- Factors which affect production costs;
- Epidemiological principles of disease prevention, control and eradication;
- Food safety including antibiotic usage, antibiotic resistance, withholding periods, export slaughter intervals, identification and control of potential carcass and egg contaminants.
You will be expected to work through case studies and photographs on pig and poultry diseases with an examiner.

A range of tasks, competences, skills and knowledge will be examined and may include some or all of the following:

**Ability to detect and interpret the significance of abnormalities in a group of animals.**

Possess a working knowledge of the management of (a) an intensive pig facility with pigs permanently housed in traditional sheds or eco-shelters or a free-range piggery; (b) knowledge of the various production systems in the poultry industry (conventional intensive broiler and layer production; non-cage layer production; free range breeder and layer production and organic production); and an understanding of the vaccination and treatment options and methods available within the different systems.

Possess knowledge of how to prevent the spread of disease within and between (a) piggeries (b) poultry farms during veterinary work.

Ability to recognise the possibility of a sporadic endemic disease in differential diagnosis and to develop a plan to confirm the diagnosis, manage, prevent, treat and/or control such a disease.

Understand the importance of a quarantine barrier to prevent entry of a pathogen to a piggery or poultry flock and the importance of quarantine and movement control in the control and eradication of an exotic disease involving (a) pigs (b) poultry.

**Ability to recognise the epidemiological implications of specific pathogens**

Understand the possible interaction between causal agent, host and environment in a disease outbreak:
(a) pigs - eradication, test and slaughter, test and cull, and vaccination measures are used to control disease.
(b) poultry – eradication and vaccination measures are used to control disease.

**Ability to assess and provide advice on management and animal welfare, production and performance issues.**

Possess an understanding of the major production costs within a piggery and broiler/layer flock.
SECTION 5: EQUINE MEDICINE & SURGERY

This is an oral examination dealing with clinical cases covering surgical and medical diseases of horses. You will work through case studies and clinical case photographs with the examiners.

You may be asked questions on:

- all the body systems
- clinical cases
- classes of drugs and contraindications
- test results, blood and serum analysis for clinical cases
- knowledge of the use of personal protective equipment (PPE) as a preventive strategy in equine procedures

A range of tasks, competences, skills and knowledge will be examined and may include some or all of the following:

| Ability to acquire and record an accurate history, perform a clinical examination and interpret the findings of that examination. |
| Ability to detect and interpret abnormalities in an individual horse. |
| Ability to use common diagnostic aids, instruments, and equipment used with horses. |
| Ability to interpret radiographs. |
| Ability to utilize radiographic equipment safely by demonstrating knowledge of safety issues for the operator and animal. |
| Ability to interpret the results of clinical pathology tests including the results of tests conducted on blood and serum. |
| Ability to establish a differential diagnosis list and rationalise a likely prognosis. |
| Ability to develop an effective management, treatment and control plan. |
| Ability to identify and solve veterinary problems. |
| Ability to recognise the possibility of an uncommon endemic disease in differential diagnosis and to develop a plan to confirm the diagnosis, manage, treat and/or control such a disease. |
| Demonstrate an understanding of biosecurity in practice including use of PPE. |
| Ability to recognise when anaesthesia and analgesia are necessary and implement effective techniques. |
| Ability to apply surgical principles, use surgical instruments and techniques, carry out common surgical procedures, and provide advice to the owner on aftercare. |
| Ability to recognize the limitations of available facilities and/or knowledge, and when to seek assistance or refer the case. Know the correct method to refer such a case to another veterinarian. |
SECTION 6: EQUINE CLINICAL SKILLS

It is recommended that you take this list of tasks and “see practice” to prepare for this examination.

This is a practical session. You need to be able to perform all of the tasks listed. You will be expected to be able to do the following in order to pass this section:

- Humanely and appropriately catch and restrain a horse using a halter or bridle.
- Describe the horse in terms of markings, gender, colour and breed with a rough estimate of age.
- Safely conduct a thorough clinical examination of a horse and discuss how diseases may affect clinical findings. The examination will include TPR (temperature, pulse, respiration, auscultation of lung and abdomen).
- Examine a horse’s mouth and assess the condition of the teeth with a mouth gag.
- Make a clinical examination of the eye with, or without, an ophthalmoscope.
- Describe how and where to perform an abdominocentesis.
- Discuss how to perform a rectal examination and the structures that may be palpated.
- Discuss how to pass a nasogastric tube and indicate how to tell whether the tube is in the oesophagus or trachea.
- Indicate suitable sites for giving an intramuscular injection to a horse.
- Describe how to take a blood sample for haematological analysis.
- Pick up a horse’s front or back leg and examine the hoof.
- Effectively use the hoof testers.
- Demonstrate location of various joints.
- Examination by palpation of the major soft tissue structures of the distal limb.
- Position a horse for radiographic examination.
- Identify the sites used to apply local anaesthetic to block:
  - regional nerves to the legs and feet
  - motor nerves to the eye
  - sensory nerves to the eye.
SECTION 7: COMPANION ANIMAL SURGERY AND ANAESTHESIA

(a) Surgery

(b) Anaesthesia

(a) Surgical and radiological content of the oral examination

In the oral examination, emphasis will be placed on the candidate’s ability to gather relevant clinical data and to follow a logical diagnostic process giving a differential diagnosis and treatment options. Radiographs and PowerPoint slides will be used. Questions regarding suture materials, surgical instruments, bone anatomy and haematology and biochemistry blood results may be included.

The viva voce examination may include the following topics but may not be confined to these topics:

- The Principles of Small Animal Surgery - The examination will include the application of Halsted’s Principles in surgery, the use of various suture materials and suture patterns, staples and stapling devices and surgical drains in small animal surgery; principles of postoperative care and fluid therapy; the prevention of nosocomial infections.
- Wounds - the classification of types of wounds, diagnosis and treatment options; the use of available wound dressings.
- Burns - aetiology/pathogenesis of burns, and systemic and local treatments.
- Plastic Surgery - principles of graft healing, types of skin flaps and grafts that can be used.
- Treatment of multi-trauma cases and the use of antimicrobials in small animal surgery.
- Surgical conditions.
- Soft Tissue Systems - Aetiology/pathogenesis, diagnosis, treatment and prognosis for surgical conditions of the following soft tissue systems:
  - The skin, respiratory tract, cardiovascular system, the thoracic cavity, the thyroid and parathyroid glands, aural disease and ocular disease, gastrointestinal tract including dentistry, urinary tract, male and female genital tracts, the peritoneal cavity, the pancreas, conditions of the liver and biliary tract, adrenal glands, surgical treatment of hernias, and conditions involving muscles, tendons and ligaments.
- Oncology - Principles of oncological diagnosis and the treatment and prognosis for canine and feline tumours.
Orthopaedics -
- Knowledge of bone healing.
- The classification and description of fractures. Selection of appropriate fracture fixation methods according to Fracture Assessment Scoring. The theory of the application of compression, neutralisation and bridging plates, locking plates and minimum contact plates, lag screws, intramedullary pinning, interlocking nailing, external skeletal fixators and external coaptation, and treatment of intra-articular fractures.
- The aetiopathogenesis, diagnosis, radiographic recognition, and possible treatment options for the following fracture and other orthopaedic conditions: conditions of all joints, bones and fractures; correction of angular bone deformities and spinal fractures; osteomyelitis; panosteitis; tendon injury.

Neurology - the recognition of spinal lesions, the localisation of spinal lesions by clinical examination and diagnostic procedures. The aetiopathogenesis, breed prevalence, differential diagnosis, diagnosis and treatment guidelines for common spinal conditions.

Radiology -
- The candidate should be able to assess, interpret, critique and discuss radiographs of small animals suffering from any medical or surgical condition and to indicate where further radiographic studies are indicated.
- The candidate should be able to discuss the principles of radiology, including radiation safety.

RECOMMENDED REFERENCES

The following textbooks are recommended:


» Consultation of a good small animal anatomy textbook is essential.
A range of tasks, competences, skills and knowledge will be examined and may include some or all of the following:

<table>
<thead>
<tr>
<th>Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to assess, interpret, critique and discuss radiographs and radiographic techniques in the diagnosis of small animal medical and surgical diseases.</td>
</tr>
<tr>
<td>Ability to demonstrate a rational and logical protocol aimed at solving small animal surgical problems commonly encountered in small animal practice.</td>
</tr>
<tr>
<td>Ability to investigate and reveal a rational understanding of common small animal surgical diseases at presentation and form relevant lists of differential diagnoses.</td>
</tr>
<tr>
<td>Ability to choose and employ appropriate diagnostic tests when testing differential diagnoses in the diagnosis of small animal medical and surgical diseases.</td>
</tr>
<tr>
<td>Ability to assess prognostic factors in case management to guide client advice, influence the selection of surgical procedures, and inform prognosis.</td>
</tr>
<tr>
<td>Ability to explain the pathogenesis of common small animal medical and surgical diseases to assist clients in their understanding and avoidance of future recurrence.</td>
</tr>
<tr>
<td>Ability to select and justify appropriate surgical solutions to common small animal surgical problems.</td>
</tr>
<tr>
<td>Ability to assess the prognosis of small animals that may present with a range of medical and surgical diseases as well as those undergoing surgical treatments.</td>
</tr>
<tr>
<td>Demonstrate awareness of personal surgical limitations and show willingness to seek advice, or refer cases to appropriate veterinary specialists.</td>
</tr>
<tr>
<td>Discuss the aftercare requirements of surgical patients who may have undergone a range of surgical procedures in-house or elsewhere.</td>
</tr>
</tbody>
</table>

**b) Anaesthesia**

Candidates may be asked to:

<table>
<thead>
<tr>
<th>Task</th>
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</thead>
<tbody>
<tr>
<td>Discuss the pharmacological properties of drugs commonly used in the perioperative period (eg tranquillisers, opioids, intravenous anaesthetics, inhalation agents, non-steroidal anti-inflammatories, local anaesthetics etc) and apply this knowledge to clinical cases described by the examiner.</td>
</tr>
<tr>
<td>Plan anaesthesia and analgesia for patients taking into consideration species differences and needs particular to different disease states eg cat with renal failure, brachycephalic dog, patient presented for fracture repair.</td>
</tr>
<tr>
<td>Discuss monitoring of the anaesthetised patient for both depth of anaesthesia and physiological stability using both basic skills and electronic devices.</td>
</tr>
<tr>
<td>Demonstrate sound knowledge of anaesthetic equipment eg anaesthetic delivery systems, their assembly, safety checks and settings (vaporiser setting and fresh gas flow rates), endotracheal tubes etc.</td>
</tr>
<tr>
<td>Discuss the management of adverse events that may occur during anaesthesia eg hypotension, hypothermia, cardiac arrest etc.</td>
</tr>
</tbody>
</table>
A range of tasks, competences, skills and knowledge will be examined and may include some or all of the following:

<table>
<thead>
<tr>
<th>Knowledge of pharmacological properties of drugs commonly used in the perioperative period (e.g., tranquillisers, opioids, intravenous anaesthetics, inhalation agents, non-steroidal anti-inflammatories, local anaesthetics etc) and apply this knowledge to clinical cases.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan anaesthesia and analgesia for patients taking into consideration species differences and needs particular to different disease states e.g., cat with renal failure, brachycephalic dog, patient presented for fracture repair.</td>
</tr>
<tr>
<td>Discuss monitoring of the anaesthetised patient for both depth of anaesthesia and physiological stability using both basic skills and electronic devices.</td>
</tr>
<tr>
<td>Demonstrate sound knowledge of anaesthetic equipment e.g., anaesthetic delivery systems, their assembly, safety checks and settings (vaporiser setting and fresh gas flow rates), endotracheal tubes etc.</td>
</tr>
<tr>
<td>Discuss the management of adverse events that may occur during anaesthesia e.g., hypotension, hypothermia, cardiac arrest etc.</td>
</tr>
</tbody>
</table>

**SECTION 8: REPRODUCTION - ALL SPECIES**

You will be asked to discuss the diagnosis and management of real-life cases involving several reproductive and obstetrical problems affecting common domestic farm animal and companion animal species.

You need to be familiar with commonly used veterinary obstetrical instruments and must be able to demonstrate how to use them.

You will also be asked to discuss how you would go about investigating a reproductive or obstetrical problem affecting a herd, flock, or group of animals, your interpretation of data derived from this investigation and your recommendations on how to manage or control the problem.

A range of tasks, competences, skills and knowledge will be examined and may include some or all of the following:

<table>
<thead>
<tr>
<th>Ability to obtain sufficient information to allow the reproductive problem to be defined in discussing case studies of reproductive problems.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to describe and differentiate normal from abnormal findings when investigating a clinical case involving the reproductive system.</td>
</tr>
<tr>
<td>Ability to provide scientifically valid and practical recommendations on the management of reproductive problems in domestic animals.</td>
</tr>
<tr>
<td>Ability to employ appropriate methods to evaluate the likely fertility of breeding animals.</td>
</tr>
<tr>
<td>Ability to evaluate information related to reproductive performance of a group of breeding animals and make prioritised recommendations on how to improve performance.</td>
</tr>
<tr>
<td>Ability to describe the use of different assisted reproductive technologies including manipulative procedures, and make recommendations on the most appropriate option in case scenarios.</td>
</tr>
</tbody>
</table>
Ability to effectively evaluate and investigate a case of dystocia and make scientifically valid and practical recommendations on how to manage the case.

Ability to employ and effectively carry out appropriate obstetrical procedures by demonstrating knowledge of obstetrical instruments and conducting a simple manipulative procedure.

Ability to employ surgical intervention in obstetric cases using skills in anaesthesia, analgesia, surgery, and after-care at the ‘entry level’ standard.

SECTION 9: PATHOLOGY & CLINICAL PATHOLOGY

This examination consists of 10 questions on pathology and clinical pathology presented in sequence to candidates as images and questions in Powerpoint format. These are projected onto a large presentation screen. Ten minutes are allowed for making hand-written answers to each question in an answer booklet.

Most images will be of gross specimens; however a few photomicrographs will be included, together with history and questions. The examination will assess practical ability as well as theoretical knowledge of pathology (morbid anatomy), clinical pathology, microbiology and parasitology.

Candidates will be expected to recognise and describe abnormalities in the specimen, identify the primary disease process/es that has/have caused the change, make a preferred pathological (and, where appropriate, an aetiological) diagnosis and provide a list of differential diagnoses where appropriate. In some cases supplementary questions might be asked about appropriate submission of diagnostic specimens from the material, or management of the case.

If a candidate misinterprets a depicted abnormality and hence makes an incorrect pathological diagnosis, some credit for that question may be salvaged if subsequent choices of disease processes, diagnosis and management options, etc, show that the candidate is using correct deductive logic.

This examination is designed to assess the candidate’s ability to distinguish the significant pathological changes of common diseases of all species from insignificant features such as post-mortem change, and to draw correct interpretations and conclusions from the material. The disease conditions will cover as wide a range of domestic species as possible, including birds, as well as companion and production animals.

Microscopes will not be used in the exam, nor will protective clothing be needed. Paper will be provided; candidates need only bring suitable writing equipment.
SECTION 10: PREVENTIVE AND NATIONAL/STATE REGULATORY MEDICINE

This section covers a broad area of knowledge that will be required to practice preventative veterinary medicine in populations and individuals. This is in the context of disease epidemiology, control, management and eradication and relevant drivers, public and One Health and understanding the respective roles and responsibilities of government and practitioners. It also covers veterinary chemical and animal welfare legislation and principles.

Note that candidates are expected to have country specific areas of knowledge (for example government administration and structures) for Australia or New Zealand for their respective country of intended work, but also must be prepared to answer questions pertaining to the other country.

You will be expected to be able to discuss preventive medicine and National/State regulatory veterinary medicine as it operates in Australia and New Zealand, and outline international regulatory and standards setting bodies which influence related domestic policies. It is important to understand and be able to explain the principles of Australia and New Zealand’s quarantine systems and discuss reasons why either may choose to eradicate an exotic disease.

You will be expected to understand the principles of disease prevention, control and eradication within a population, and apply the epidemiology of different diseases to control programs, giving examples. You should understand diagnostic test characteristics, what factors help determine which is best to use, and be able to calculate and explain sensitivity and specificity when given a simple two-by-two table.

As part of this you will be expected to discuss exotic and endemic diseases of importance to Australia and New Zealand (including zoonotic aspects, differences in approach and One Health concepts). This includes the various disease control programs currently operating in Australia and New Zealand, and those that would be implemented if an emergency disease were to be diagnosed in Australia or New Zealand.

You will need to describe the necessary steps to be taken by a veterinarian if these conditions are suspected, and principles of control or eradication. These include, but are not limited to:

a) Exotic diseases:
- Foot and Mouth Disease
- African Horse Sickness
- Screw worm fly
- Classical Swine Fever
- Newcastle Disease
- Avian Influenza
- Equine influenza
- Rabies
- African Swine Fever
- Tuberculosis (as is the case in Australia)
- Bluetongue
- Bovine Spongiform Encephalopathy
b) Endemic diseases:
- Anthrax
- Johne’s Disease (paratuberculosis)
- Tuberculosis (as is the case in New Zealand)
- Sheep Footrot
- Strangles
- Hendra virus
- Leptospirosis

You will be expected to be able to discuss:

| Scheduling (classes in New Zealand) of veterinary drugs and agricultural chemicals; |
| Reporting adverse drug experience to the Australian Pesticides and Veterinary Medicines Authority (or Ministry for Primary Industries in New Zealand); |
| Withholding periods for veterinary drugs, and agricultural and veterinary chemicals; |
| Significance of residues of veterinary drugs and agricultural and veterinary chemicals; |
| Legal requirements for the use of animals for scientific purposes; |
| Animal welfare legislation as applied to veterinarians, (Queensland legislation to be used as the model); |
| Legislation and codes of practice that apply to the veterinary profession in Australia and New Zealand. |

Animal Health Australia has made available to NVE candidates its training program “Accreditation Program for Australian Veterinarians” (APAV) which will help to provide you with an awareness of national regulations, policies and issues in the area of animal health in Australia. New Zealand candidates should be aware of this material.

- Go to this link: http://www.animalhealthaustralia.com.au/training-centre/accreditation-program-for-australian-veterinarians-apav/
- Select “online APAV Initial Accreditation Training Program”. You have to create an account. (It is free!)
- Select course enrolment on the left menu. In the table there will be a drop down box in the top right that says ‘select a course’ – click on this and select APAV.

You then get access to all the information and some exercises to do. You don’t have to pay; payment is only required if you want to be accredited.

Please note you cannot become APAV accredited until you are a fully registered veterinarian with an Australian State or Territory Registration Board and are approved by your State Chief Veterinary Officer. The purpose of enabling you to have access to this program is for education and revision purposes only.
Some suggested reference sites:

- OIE - www.oie.int
- FAO - www.fao.org
- Promed - www.promedmail.org
- Animal Health Australia - www.animalhealthaustralia.com.au
- DAWR - www.agriculture.gov.au
- State/Territory government websites
- Ministry of Primary Industries NZ - www.mpi.govt.nz

A range of tasks, competences, skills and knowledge will be examined and may include some or all of the following:

- Ability to recognise the possibility of an exotic disease and take action to contain it. This requires that the candidate has knowledge of the necessary steps to be taken, by a veterinarian, on suspicion of an exotic disease in cattle, sheep, horses, pigs or poultry in the context of: (i) Foot and Mouth Disease, (ii) African Horse Sickness, (iii) Screw worm fly, (iv) Classical Swine Fever, (v) Newcastle Disease, (vi) Avian Influenza, (vii) Equine Influenza, (viii) Rabies, (ix) African Swine Fever, (x) Tuberculosis, (xi) Bluetongue, (xii) Bovine Spongiform Encephalopathy. Note that candidates are advised that other exotic diseases of importance to Australia (or New Zealand) may be covered.

- Ability to recognise the possibility of an endemic disease and knowledge of the steps to be taken, by a veterinarian, to control: (i) Anthrax, (ii) Johne’s Disease, (iii) Tuberculosis, (iv) Sheep Footrot, (v) Strangles, (vi) Hendra virus, (vii) Leptospirosis. Note that candidates are advised that other endemic diseases of importance to Australia (or New Zealand) may be covered.

- Understand the principles of disease prevention, control and eradication within a population and apply the epidemiology of different diseases to control programs.

- Understand diagnostic test characteristics, which factors help determine which is best to use and be able to calculate and explain sensitivity and specificity when given a simple two-by-two table.

- Possess a working knowledge of the legislation and codes of practice that apply to the veterinary profession in Australia (or New Zealand).

- Knowledge of the scheduling of veterinary drugs and agricultural chemicals in Australia (or New Zealand) and the regulatory requirements in relation to Schedule 4 and Schedule 8 drugs.

- Knowledge of how to report an adverse drug reaction to the Australian Pesticides and Veterinary Medicines Authority or the New Zealand Ministry for Primary Industries.

- Knowledge of the withholding periods for veterinary drugs and chemicals, for meat and milk, when used in food producing animals.

- Knowledge of the significance of residues of veterinary drugs and agricultural and veterinary chemicals in animal products (meat, milk, wool).

- Knowledge of the legal requirements for undertaking experiments in animals, namely, the Australian Code of Practice for the Care and Use of Animals for Scientific Purposes (applicable in all States/Territories) or the New Zealand equivalent.

- Knowledge of the legal obligations/restraints imposed on veterinarians by animal welfare legislation.
SECTION 11: PRACTICAL ANAESTHESIA

You will be required to carry out a thorough clinical examination and assessment on a companion animal as to its suitability for anaesthesia.

You will be informed of the animal’s weight.

You will have some choice of premedication, analgesic and anaesthetic drugs.

You will be asked to assemble and check the anaesthetic machine (a circle absorber with vaporiser out of circle).

You will calculate the required dosage in consultation with the examiner, and carry out the anaesthesia to the point where the animal is stable under the anaesthetic process.

All steps in the process are monitored by the examining anaesthetist.

A range of tasks, competences, skills and knowledge will be examined. You will be expected to be able to:

<table>
<thead>
<tr>
<th>Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carry out a pre-anaesthesia physical examination on a dog.</td>
</tr>
<tr>
<td>Choose appropriate drugs and doses for premedication, induction and maintenance of anesthesia and perioperative analgesia (including intraoperative analgesia).</td>
</tr>
<tr>
<td>Accurately determine volumes of all drugs to be administered.</td>
</tr>
<tr>
<td>Accurately determine flow rates for intra-operative fluid administration.</td>
</tr>
<tr>
<td>Prepare all equipment needed for anaesthesia including the anaesthetic machine.</td>
</tr>
<tr>
<td>Demonstrate an appropriate method of securing a catheter in a peripheral vein.</td>
</tr>
<tr>
<td>Select appropriate endotracheal tubes and test for cuff integrity.</td>
</tr>
<tr>
<td>Demonstrate a method of safely inducing anaesthesia.</td>
</tr>
<tr>
<td>Demonstrate a method of safely intubating the patient.</td>
</tr>
<tr>
<td>Connect the patient to the anaesthetic machine with suitable fresh gas flow and vaporizer settings.</td>
</tr>
<tr>
<td>Monitor the patient’s depth of anaesthesia and physiological stability using basic techniques (eg palpation, watch and stethoscope) and some electronic monitoring devises (eg pulse oximeter, capnography, blood pressure monitor); and</td>
</tr>
<tr>
<td>- Know acceptable ranges of values for pulse rate (bpm), oxygen saturation (% saturation), peak expired and inspired CO₂ (mm Hg or %) and blood pressure (mm Hg).</td>
</tr>
</tbody>
</table>
SECTION 12: PRACTICAL SMALL ANIMAL SURGERY

You are asked to perform a common surgical procedure such as an ovariohysterectomy or cystotomy using full aseptic surgical procedures. Assessment is made on:

- aseptic preparation of both surgeon and patient;
- surgical technique:
  - tissue handling and haemostasis
  - instrument dexterity and competence
  - suture selection and knot security
  - overall appreciation of the duration of surgery
- knowledge of surgical anatomy; and
- likely outcome to problems arising as a result of poor technique, infection or complications and interference to the surgical site by the patient; and
- discussion of instructions for after care at home after discharge – this may include a written discharge instruction sheet to the owner.

A range of tasks, competences, skills and knowledge will be examined and may include some or all of the following:

- Ability to determine if the surgical treatment is indicated and appropriate.
- Ability to plan and prepare the surgical procedure including pre-operative procedures to maintain asepsis for the surgeon.
- Ability to prepare the animal prior to surgery including pre-operative procedures to maintain asepsis for the patient.
- Ability to use surgical equipment and employ appropriate surgical techniques to perform the procedure safely. This includes knowledge of the proper names of the instruments.
- Ability to carry out procedures at ‘entry level’ standard and within an acceptable timeframe. Appreciate that a lack of knowledge or competence will require the procedure to be terminated on the grounds of animal welfare.
- Ability to anticipate and take steps to prevent surgical complications.
- To show competence in tissue handling, haemostasis, lavage and the correct approximation of tissues.
- Ability to modify techniques to meet changing needs.
- Demonstrate an understanding supportive care/therapy appropriate to the needs of the procedure and the patient.
- Ability to provide post-operative care and assessment, including provision of instructions for after-care at home after discharge.
- Demonstrate an understanding of potential complications and/or problems.
- Ability to exercise judgment in veterinary practice.

Note: Sections 11 and 12 are usually combined and can take up to 3 hours in total. There is a time limit on the surgery component of 2 hours. If this time is exceeded the examiners may terminate the examination on humane grounds due to animal welfare concerns.
6.5 Pass Marks for the Final (Clinical) Examination

Each of the twelve sections of this examination is marked as “met the required standard of competency” or “did not meet the required standard of competency”. There are three result categories in the final examination:

(a) Met the required standard of competency in all sections;

(b) SUPPLEMENTARY, where at least eight full sections are at the required standard of competency. The remaining sections must be re-taken at the next available examination session; and

(c) ‘Did not meet the required standard of competency’ in more than four full sections. The candidate must repeat the entire Final (Clinical) Examination. The next attempt must be taken at the next available examination session and be within five years of achieving a pass in the Preliminary (MCQ) Examination.

NOTE: Candidates who do not meet the required standard of competency in one subsection (a) or (b) in Sections 1, 2, 3, 4 or 7 will only be required to re-sit that specific subsection. However, you need to have met the required standard in both (a) and (b) to record a pass in examination sections 1, 2, 3, 4 or 7.

7. EXAMINATION RESULTS

The results of the Preliminary and Final Examinations will usually be made known to you formally by email from AVBC within eight weeks of the date of each of these examinations.

8. APPEALS

AVBC will consider appeals where a candidate has been prevented by circumstances beyond their control from performing in an examination at their true level. If you believe you have grounds for appeal against the process in any section of the Preliminary or Final Examination, an appeal can be made to AVBC. Before making an appeal, you should contact the NVE Coordinator of the AVBC on (03) 9620 7844.

If you become aware of any issues or circumstances prior to the examination that may affect your performance you must submit written notice, with supporting evidence, to the NVE Coordinator before the examination date.

If you have particular difficulties on the day of the examination, such as sickness, please tell the supervisor of the MCQ venue, or during the Final (Clinical) Examination, the NVE Coordinator or the Chief Examiner, and then write with supporting evidence, immediately after the exam, to the NVE Coordinator at the address below. In the case of sickness, a medical certificate must be obtained and included.

Appeals should be submitted in writing, giving the grounds for the appeal and any other relevant information. An appeal must be submitted within 28 days of notice of examination results. A fee for lodging an appeal will be applied. Further details concerning the guidelines on Counselling and Appeals are available from the NVE Coordinator.

NVE Coordinator
Australasian Veterinary Boards Council Inc (AVBC)
Level 8, 470 Collins Street
MELBOURNE VIC 3000
Tel: +61 3 9620 7844
9. READING LIST

Please note that the AVBC is unable to provide you with these texts or to act on your behalf in their purchase.

The Preliminary and Final Examinations are set on the assumption that you have undertaken some reading revision. The following lists have been compiled to help you in that regard. The most recent edition at the time of publication has been listed. If this is not available it is appropriate to use an older edition but this may not contain information that is current.

If the Preliminary (MCQ) Examination is attempted overseas, the list may be unavailable. You should then consult a school of veterinary science in your country for equivalent texts.

KEY REFERENCES

The links below were correct on the date of handbook upload.


Bowman, D.D., Georgi’s Parasitology for Veterinarians, 10th Ed, 2013

Carter, G.R. & Wise, D.J., Essentials of Veterinary Bacteriology and Mycology, 6th Ed, 2004


McGavin, D et al., Thomson’s Special Veterinary Pathology, 3rd Ed, 2000


Pfieffer, D.U., Veterinary Epidemiology: An Introduction, 2009

Robinson, N.E., Current Therapy in Equine Medicine, 7th Ed, 2014
Stevenson, M, An Introduction to Veterinary Epidemiology, 2008  


Taylor DJ. Pig diseases, 9th Ed, 2013


West D.M., Bruere A.N., Ridler, A.L.; The Sheep: Health, Disease & Production, 2009. Publisher: Veterinary Continuing Education - Massey University, Palmerston North, NZ.

Zimmerman, JJ et al. (ed.) 2012, Diseases of Swine, 10th Ed, Wiley-Blackwell, Chichester, West Sussex

GENERAL REFERENCES

McKenzie RA. Toxicology for Australian Veterinarians, Publisher: RA McKenzie, 2002.

Datefield, R, Veterinary Toxicology for Australia and New Zealand, 2017

Candidates may also consult:

• Australasian faculty handbooks which indicate the scope of the curricula used in Australian veterinary education. Handbooks may be obtained online from Australasian universities with faculties of veterinary science.

• prominent veterinary periodicals, for information about new treatments. Textbooks can be correct in principle but out of date.
USEFUL WEBSITES

The links below were correct on the date of handbook upload.

<table>
<thead>
<tr>
<th>Online courses</th>
<th>University of Sydney Veterinary Information Portal</th>
</tr>
</thead>
<tbody>
<tr>
<td>These courses have been designed to help candidates prepare for the North American Veterinary Licensing Examination (NAVLE). They are not endorsed by AVBC and some of the information may not be relevant to an Australian context, but they may provide useful revision and practice at answering multiple choice questions.</td>
<td><a href="http://sydney.edu.au/vetscience/teaching_learning/eresources/">http://sydney.edu.au/vetscience/teaching_learning/eresources/</a></td>
</tr>
<tr>
<td>You can download articles and summaries of a wide selection of diseases and disease strategy. These contain excellent descriptions of the diseases. You can also open the “Publications” link to find the annual reports which provide an overview on regulatory, trade and production diseases of livestock.</td>
<td><strong>Australian code of practice for the care and use of animals for scientific purposes</strong> <a href="http://www.nhmrc.gov.au/guidelines-publications/ea28">http://www.nhmrc.gov.au/guidelines-publications/ea28</a></td>
</tr>
<tr>
<td><strong>Information on chemical residues and adverse experiences</strong> <a href="http://www.apvma.gov.au">http://www.apvma.gov.au</a></td>
<td><strong>Standard Uniform Schedule of Medicines and Poisons</strong></td>
</tr>
<tr>
<td><strong>Diseases Acquired From Animals</strong> <a href="https://www.safeworkaustralia.gov.au/">https://www.safeworkaustralia.gov.au/</a></td>
<td><strong>State Registration Board websites</strong> (see Appendix B) You can view the current and relevant Acts and Regulations applicable to veterinarians in each State and Territory.</td>
</tr>
</tbody>
</table>
Food Hygiene and Large animals
www.mla.com.au

Veterinary school websites which may contain a detailed description of units of study (see Appendix A)

The International Veterinary Information Service
www.ivis.org

Pharmacology

Radiology websites:

- Imaging Anatomy website of the Illinois College of Veterinary Medicine
  http://vetmed.illinois.edu/courses/imaging_anatomy/
- DVM Insight Image Library
- Teaching and learning about veterinary radiology
  http://www.veterinaryradiology.net/

NAVLE website for practice questions
http://nbvme.org/?id=80&page=Practice+Versions-NAVLE

PAVE website for practice questions
https://www.aavsb.org/licensure-assistance/international-pathway/take-qualifying-science-examination/

BRIDGING COURSES

There are no bridging courses available and the AVBC is not able to recommend any suitable alternatives.

COUNSELLING ADVICE

Counselling advice may be available through the NVE Board of Examiners.
LIBRARY FACILITIES

If you are in Australia you may be able to access the library facilities of the veterinary schools. Please contact the individual libraries.

UNIVERSITY OF MELBOURNE

You may become a paying member of the library which entitles you to borrow a certain number of low-use books (those not required by students or staff). The latest editions of texts are not available if required by staff or students but older editions may be available.
https://library.unimelb.edu.au/veterinary-science

MURDOCH UNIVERSITY

Any person can use the resources within the library. If you wish to borrow material from the library then you need to join as a community borrower. There is a cost involved. Many of the major texts are kept in a reserve section where they can only be borrowed overnight.
http://library.murdoch.edu.au/

UNIVERSITY OF QUEENSLAND

You may join as a community member. A cost is involved. You may have access to the materials on site but you must be a member to borrow.
https://web.library.uq.edu.au/locations-hours/uq-gatton-library-jk-murray-library

UNIVERSITY OF SYDNEY

NVE applicants are eligible for community borrower membership. There is a fee involved. This allows you to borrow from any University of Sydney library. There is a limit of 10 items per time.
https://library.sydney.edu.au/libraries/locations.html

CHARLES STURT UNIVERSITY

Wagga Wagga NSW
http://www.csu.edu.au/division/library/home

JAMES COOK UNIVERSITY

Townsville QLD
http://www.jcu.edu.au/library

THE UNIVERSITY OF ADELAIDE

Roseworthy Campus, Roseworthy SA
https://www.adelaide.edu.au/library/about/libraries/roseworthy/
Appendix A

APPENDIX A - SCHOOLS OF VETERINARY SCIENCE IN AUSTRALASIAN UNIVERSITIES

School of Veterinary Science
University of Sydney
NSW 2006
Tel: (02) 9351 2222
www.usyd.edu.au

School of Veterinary Science
The University of Queensland
Gatton Campus
QLD 4343
Tel: (07) 5460 1834
www.uq.edu.au/gatton

School of Veterinary Science
University of Melbourne
Parkville Campus
VICTORIA 3052
Tel: (03) 9371 2261
www.fvas.unimelb.edu.au

School of Veterinary and Biomedical Sciences
Murdoch University
MURDOCH WA 6150
Tel: (08) 9360 2636
www.murdoch.edu.au

School of Animal and Veterinary Science
Charles Sturt University
Boorooma St
NORTH WAGGA, NSW 2650
Tel: (02) 6933 4353
www.csu.edu.au

School of Veterinary and Biomedical Sciences
James Cook University
TOWNSVILLE QLD 4811
Tel: (07) 4781 4449
www.jcu.edu.au

Institute of Veterinary, Animal and Biomedical Sciences
Massey University
Private Bag 11 222
Palmerston North 4442
NEW ZEALAND
www.massey.ac.nz

The School of Animal and Veterinary Sciences
Roseworthy Campus
The University of Adelaide
ROSEWORTHY SA 5371
Tel: (08) 8313 7660
www.adelaide.edu.au/vetsci/
Appendix B

APPENDIX B - AUSTRALASIAN VETERINARY REGISTRATION BOARDS

NEW SOUTH WALES
Veterinary Practitioners Board of NSW
Suite 7.09, 247 Coward Street
MASCOT NSW 2020
Tel: (02) 8338 1177
Email: admin@vpb.nsw.gov.au
www.vpb.nsw.gov.au

VICTORIA
Veterinary Practitioners Registration Board of Victoria
Level 11, 470 Collins Street
MELBOURNE VIC 3000
Tel: (03) 9620 7444
Email: communications@vetboard.vic.gov.au
www.vetboard.vic.gov.au

QUEENSLAND
Veterinary Surgeons Board of Queensland
Level 4, 41 George Street
BRISBANE QLD 4000
Tel: (07) 3087 8777
Email: vsbqld@daf.qld.gov.au
www.vsb.qld.gov.au

TASMANIA
Veterinary Board of Tasmania
PO Box 909
SANDY BAY TAS 7006
Tel: (03) 6294 6961
Email: vbt@netspace.net.au

VETERINARY COUNCIL OF NEW ZEALAND
Veterinary Council of New Zealand
Box 10 563
WELLINGTON 6143
NEW ZEALAND
Tel: 0011 64 4 473 9600
Email: vet@vetcouncil.org.nz
www.vetcouncil.org.nz

SOUTH AUSTRALIA
Veterinary Surgeons Board of South Australia
PO Box 7395
Hutt Streef
ADELAIDE SA 5000
Tel: (08) 8359 3334
Email: admin@vsbsa.org.au
www.vsbsa.org.au

WESTERN AUSTRALIA
Veterinary Surgeons Board of Western Australia
PO Box 1721
MELVILLE SOUTH WA 6156
Tel: (08) 9317 2353
Email: admin@vsbwa.org.au
www.vsbwa.org.au

AUSTRALIAN CAPITAL TERRITORY
ACT Veterinary Surgeons Board
Transport Canberra and City Services
GPO Box 158
CANBERRA ACT 2601
Tel: (02) 6207 0012
Email: TCCS.vetboard@act.gov.au
www.tccs.act.gov.au

NORTHERN TERRITORY
Veterinary Board of the Northern Territory
GPO Box 3000
DARWIN NT 0801
Tel: (08) 8999 2028
Email: vetboard@nt.gov.au
Appendix C

APPENDIX C - OTHER USEFUL ADDRESSES

AUSTRALIAN VETERINARY ASSOCIATION
Unit 40, 6 Herbert Street
ST LEONARDS NSW 2065
Australia
Tel: 02 9431 5000
Email: members@ava.com.au
www.ava.com.au

NEW ZEALAND VETERINARY ASSOCIATION
PO Box 11 212
WELLINGTON 6142
NEW ZEALAND
Tel: 0011 64 4 471 0484
Email: nzva@vets.org.nz
www.nzva.org.nz

NVE COORDINATOR
Australian Veterinary Boards Council Inc (AVBC)
Level 8, 470 Collins Street
MELBOURNE VIC 3000
Australia
Tel: 03 9620 7844
Email: nve@avbc.asn.au
www.avbc.asn.au

OET
For information about the OET, please refer to the OET Centre website at:
www.occupationalenglishtest.org
Tel: + 61 3 8656 4000

IELTS
For information about IELTS Academic, please refer to the IELTS website at:
www.ielts.com.au

TOEFL-IBT
For information about TOEFL-iBT, please refer to the IETS/TOEFL website at:
https://www.ets.org/toefl/ibt/about
Email: info.melbourne@idp.com

PTE ACADEMIC
For information about PTE Academic, please refer to the Pearson PTE Academic website at:
www.pearsonpte.com
Appendix D

APPENDIX D - SAMPLE MCQ QUESTIONS (NVE PRELIMINARY EXAMINATION)

Please note that the following sample MCQ questions are intended to provide candidates with an example of the type of questions and format used in the MCQ. They do not reflect the degree of difficulty of questions in the exam papers.

Further examples of multiple choice questions which examine the type and breadth of knowledge expected of candidates of the National Veterinary Examination can be found in the series of books published by Mosby titled:

• Mosby’s Review Questions and Answers for Veterinary Boards ISBN 0-8151-7462-4
• Veterinary medicine - United States - Examinations, questions etc
• The Veterinary Board Review (CD Rom) is also available. See reference under useful websites.
  (If the Mosby series is unavailable try Saunders Comprehensive Review for the NAVLE).

Also try the NAVLE and PAVE websites for more practice questions:

• NAVLE website for practice questions
  http://nbvme.org/?id=80&page=Practice+Versions-NAVLE

• PAVE website for practice questions
  https://www.aavsb.org/licensure-assistance/international-pathway/take-qualifying-science-examination/
The answers to the following sample MCQ questions are given on page 52.

PAPER 1: BASE KNOWLEDGE

1. In the resting thoroughbred horse, the occurrence of a third heart sound
   A is indicative of asymmetrical ventricular contraction
   B may be a normal physiological event
   C is indicative of synchronous diaphragmatic flutter
   D is indicative of complete heart block

2. The resting heart rate of a clinically normal thoroughbred horse in race training is usually within the range of
   A 20 to 40 beats per minute
   B 40 to 60 beats per minute
   C 60 to 80 beats per minute
   D 80 to 100 beats per minute

3. Which one of the following abnormalities produces a systolic murmur?
   A mitral valve stenosis
   B aortic valve insufficiency
   C mitral valve insufficiency
   D tricuspid valve stenosis

4. Which one of the following nutritional states has been associated causatively with post-parturient haemoglobinuria in cattle?
   A phosphorus deficiency
   B calcium deficiency
   C vitamin C deficiency
   D zinc deficiency

5. Which one of the following physical factors, when applied to animals during pregnancy, is known to cause congenital defects?
   A high altitude
   B severe cold
   C high temperatures
   D exposure to high levels of ultraviolet irradiation
6. There is evidence that arthrogryposis in cattle is caused by
   A  *Brucella abortus* infection
   B  manganese deficiency in late pregnancy
   C  lupin poisoning after 90th day of gestation
   D  Akabane virus infection

7. Which one of the following methods of diagnosis would you use to identify cases of ovine brucellosis in rams if only one method was permitted?
   A  palpation of the scrotum and contents
   B  cytological examination of semen
   C  bacterial examination of semen
   D  complement fixation test

8. Long distance spread of the infective agent down-wind, without the assistance of insect vectors, is characteristic of
   A  contagious bovine pleuropneumonia
   B  foot and mouth disease
   C  African Horse Sickness
   D  Mycotic dermatitis (*Dermatophilus congolensis*)

9. It is generally regarded that the minimum time to allow a dairy calf to stay with its dam to ensure a passive transfer of antibodies in the colostrum is which one of the following
   A  2 hours
   B  12 hours
   C  2 weeks
   D  2 months

10. The combination of results likely to be found in rumen overload is
    A  high rumen pH and high plasma P
    B  low plasma P and low packed cell volume
    C  low rumen pH and high plasma Na
    D  low rumen pH and high plasma lactate
11. Autopsy findings of uniformly pale, slightly swollen kidneys of normal consistency would be most consistent with
   A interstitial nephritis
   B pyelonephritis
   C nephrosis
   D renal neoplasm

12. The primary pathological lesion produced by *Brucella ovis* infection in rams is
   A seminal vesiculitis
   B epididymitis
   C orchitis
   D balanoposthitis

13. Severe inflammation of hair follicles resulting in alopecia, crust formation and secondary infections in the dog, is characteristic of
   A dermatophilus infection
   B demodex infestation
   C sarcoptic mange
   D hyperadrenocorticism (Cushing’s Syndrome)

14. The most important method of spread of *Brucella abortus* among cattle is
   A ingestion
   B passive venereal transfer
   C placental
   D respiratory
PAPER 2: CLINICAL REASONING

1. As abattoir post-slaughter inspection veterinarian, you find irregularly-distributed small dark red foci up to 10mm diameter on capsular and cut surfaces of the liver of a prime heavy feedlot steer that seemed normal at pre-slaughter inspection. The larger of these foci have a spongy texture on section and are slightly sunken below the level of adjacent apparently normal parenchyma. Your provisional gross diagnosis is hepatic telangiectasis. The most appropriate action for you to take would be

A  to pass this liver and the rest of the carcass for human consumption since the lesion is not considered to represent any hazard to human health.

B  to downgrade this liver to processing grade (for sausage and other processed product) on aesthetic grounds and pass the rest of the carcass for human consumption.

C  to condemn the liver and submit samples of it for laboratory testing for pathogens, and hold the carcass in the chiller pending receipt of results.

D  to condemn the liver and the rest of the carcass because these haemorrhagic lesions suggest that the animal was septicaemic before slaughter.

2. During the past week 10 deaths have occurred in 3 adjacent pens (25 cattle in each) in a feedlot. Most animals have died after becoming unable to rise; some have simply been found dead. Recumbent cattle are aware of their surroundings and try to rise when prodded. You perform necropsies on two carcasses but find no specific abnormalities. To help manage the situation, your FIRST action should be

A  to take blood samples (into EDTA and heparin tubes) from all recumbent animals for laboratory examination.

B  to secure samples of drinking water for testing for toxins; in particular botulinum and lead.

C  to isolate the feed that was last delivered to these pens, and examine it for decaying animal matter.

D  to take rectal temperatures of a representative sample of cattle in the 3 pens to check for the presence of ephemeral fever.

3. Two dozen one day-old chicks were purchased to add to a back-yard poultry flock. You are consulted because at least seven of the birds, now a week old, aren’t eating, are depressed and are showing intermittent rapid fine tremors of wings and head. Your most appropriate action would be to

A  immediately add a soluble multivitamin supplement to the drinking water, since the signs are pathognomonic for riboflavin deficiency.

B  immediately increase the temperature of the brooder, because the birds are having to shiver to keep warm.

C  immediately quarantine affected birds in a separate building and add soluble antibiotics to the drinking water of the entire flock.

D  immediately quarantine the entire flock and submit a couple of the worst-affected birds to a state government diagnostic laboratory.
4. A single grower pig in a housed pen of 25 animals is found dead, having shown no clinical abnormalities beforehand.

The carcass is well-grown. Which of the following conditions is most likely to have been the cause of death?

A. Mulberry heart disease  
B. Encephalomyocarditis virus infection  
C. Clostridial enterotoxaemia  
D. Glasser's disease ((Haemophilus sp. infection)

5. A horse presents with a wound over the dorsal metacarpus. The horse “knuckles over” at the fetlock joint when walking and stands with the fetlock flexed.

The most likely structures affected include

A. superficial flexor tendon  
B. common and lateral digital extensor tendon  
C. fetlock joint capsule  
D. deep flexor tendon
6. A 2-year-old Quarterhorse presents with bilateral effusion of the tibiotarsal joint. The horse is not lame and is not lame after hock flexion.

What is the most likely diagnosis?

A Bone spavin of the distal hock joints
B Osteochondrosis of the distal intermediate ridge
C Osteoarthritis of the tibiotarsal joint
D Bilateral idiopathic joint effusion

7. A ten-year-old Yorkshire terrier has had a cough that has been present for 2 weeks. The cough is worse at night and the dog has some mild exercise intolerance. On examination there is a Grade 3 mitral valve murmur and a heart rate of approximately 140. There are no crackles or abnormal respiratory sounds heard. Which one of the following statements is MOST appropriate for this dog?

A This dog definitely has CHF and would benefit from furosemide therapy.
B The absence of respiratory abnormalities rules out pulmonary disease.
C This dog may have concurrent pulmonary and cardiac disease.
D Echocardiography is the only diagnostic test necessary to establish a definitive diagnosis.
## ANSWERS TO SAMPLE MCQ QUESTIONS

### PAPER 1: BASE KNOWLEDGE
1. B  
2. A  
3. C  
4. A  
5. C  
6. D  
7. D  
8. B  
9. B  
10. D  
11. C  
12. B  
13. B  
14. A

### PAPER 2: CLINICAL REASONING
1. B  
2. C  
3. D  
4. A  
5. B  
6. B  
7. C