AUSTRALIAN AND NEW ZEALAND COLLEGE OF VETERINARY SCIENTISTS
MEMBERSHIP GUIDELINES

Veterinary Microbiology and Microbial Diseases

ELIGIBILITY REQUIREMENTS OF CANDIDATE

The candidate must meet the eligibility prerequisites for Membership outlined in the Membership Candidate Handbook.

OBJECTIVES

To demonstrate that the candidate has acquired a significant level of postgraduate knowledge and skill in the field of Veterinary Microbiology and Microbial Diseases, and is able to give sound advice in this field to veterinary colleagues.

LEARNING OUTCOMES

- The candidate will be expected to have a sound\(^1\) knowledge of:
  - The bacterial, viral and mycological diseases of companion and commercial animals, including poultry and commercially farmed aquatic species that occur in Australia and New Zealand, and of the major exotic microbial animal diseases.
  - Diagnostic procedures used for the investigation of microbial disease, including:
    - Routine laboratory procedures and the principles of laboratory safety, sterilisation, aseptic technique, and methods of microbial preservation. 
      *Microbial biochemical profiles or cultural characteristics need not be committed to memory.*
    - Immunodiagnosis, especially serological techniques used in major disease control programs.
  - Principles of treatment, control and prevention of microbial diseases.
  - Microbial zoonoses, including the micro-organisms of companion and commercial animals that may infect humans, the Public Health aspects of microbial zoonotic diseases, and the epidemiology control of these zoonoses.

\(^{1}\)Knowledge levels:
- **Detailed knowledge** — candidates must be able to demonstrate an in-depth knowledge of the topic including differing points of view and published literature. The highest level of knowledge.
- **Sound knowledge** — candidate must know all of the principles of the topic including some of the finer detail, and be able to identify areas where opinions may diverge. A middle level of knowledge.
- **Basic knowledge** — candidate must know the main points of the topic and the core literature

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The candidate will be expected to **be able to**:

- Microbiologically examine tissue, faeces, milk or urine samples from companion or commercial animals using standard techniques.
- Apply basic microbiological knowledge and, using standard identification keys and texts, identify micro-organisms in the common companion and commercial animals.
- Explain, using examples, the role of epidemiological models in predicting outbreaks of, and controlling, microbial disease.
- Provide, to the veterinary profession or public, information and advice on microbial infections in domestic animals, including poultry and caged birds, using concise clear communication in an appropriate medium.

EXAMINATIONS

The Membership examination has **two (2) sections**, the **Written** and **Practical/Oral**, with each section worth 50% of the overall grade.

The **Written** consists of **two (2) parts**:

1. **Written Paper 1** (2 hours – 50%)

   *Written Paper 1* assesses knowledge of General Pathobiology, including immunology and disease mechanisms associated with microorganisms. The candidate should be able give examples of the application of the principles of pathobiology to specific microbial diseases. The candidate should be aware of recent advances in pathobiology (as covered in recent review articles). There is some choice in this examination.

2. **Written Paper 2** (2 hours – 50%)

   *Written Paper 2* assesses knowledge of Veterinary Microbiology and Microbiological Diseases. There is considerable choice in this paper.

The **Practical/Oral** consists of **two (2) parts**:

1. **Practical** (2 hours - 70%)

   *Practical* assesses the ability of the candidate to examine microscopic smears and report on the findings; to assess culture plates of bacteria and fungi and tissue cultures of viruses and report on the findings; to assess the results of immunodiagnostic tests and report on the findings. The candidate may be required to evaluate photographs and projected images.

2. **Oral** (1 hour - 30%)

   *Oral* provides the candidate with a further opportunity to demonstrate their knowledge of Microbiology and Microbial Diseases. Follow-up matters from the *Written* and other parts of the *Practical/Oral* should not occupy more than 25% of *Oral*.

RECOMMENDED RESOURCES (BOOKS, JOURNALS, WEB SITES)

Candidates are expected to read widely, paying particular attention to areas not part of their normal work experiences.

The following list of books and journals is intended as a guide to the scope of references candidates will use. Candidates should be guided by their mentors. The list is not comprehensive and is not intended to indicate the content of the examination.

*It should be noted that many text books have a North American focus and may not accurately reflect what is seen in Australia and New Zealand. Good veterinary microbiology resources are often found in medical journals and web sites.*
Books
Animal Health in Australia, Australian Bureau Animal Health, Department of Primary Industry:
Volume 1 (1981) – Viral Diseases of Farm Livestock by WIB Beveridge
Volume 4 (1983) – Bacterial Diseases of Cattle, Sheep and Goats by WIB Beveridge
Volume 6 (1985) – Bacterial and Fungal Diseases of Pigs by JR Buddle
Volume 7 (1985) – Viral, Bacterial and Fungal Diseases of Poultry by WIB Beveridge, L Hart
OR


Humphrey JD, Langdon JS (1985) *Diseases of Australian Fish and Shellfish* Proceedings of Workshop Australian Fish Health Reference Laboratory, Regional Veterinary laboratory, Benalla 27-30 May 1985.


Australian Standard AS 2243, Safety in Laboratories, Parts 1-9 can be purchased from Standards Australia outlets in all Capital cities.

**Journals (particularly of the immediate past 5 years).**

American *Journal of Veterinary Research.*

Australian *Veterinary Journal.*

*Journal of Clinical Microbiology* (http://www.journals.asm.org/)

NZ *Veterinary Journal.*

*Research in Veterinary Science.*

Veterinary Pathology.


*Journal of Veterinary Microbiology*  

*Journal of Veterinary Medicine – Series B*  

*Letters in Applied Microbiology*  

*Journal of Applied Microbiology*  

*Journal of Emerging Infectious Diseases –* (http://www.cdc.gov/ncidod/eid/)

**Journals for Review Articles**

*Clinical Microbiology Reviews* (http://www.journals.asm.org/).  

*Immunology Today.*  

*New England Journal of Medicine.*

**Websites**

Microbiology resources- general  
http://www.microbiology-direct.com/  
http://www.microbes.info/  

Lists of microbiology journals – including advice on on-line availability

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Veterinary bacteriology tests

Veterinary viral pathogens
http://vtpb-www.cvm.tamu.edu/vtpb/vet_micro/descriptions_viruses/

Veterinary mycology
http://www.vetmed.wisc.edu/students/vetmycology/lab.html

Aquatic Animal Health Standard Diagnostic Techniques:

Australian National Quality Assurance Program
http://www.anqap.com/

Australian and New Zealand Standard Diagnostic Procedures (limited number only)
http://www.scahls.com/stds.htm

Zoonoses (General)
http://www.cdc.gov/ncidod/EID/vol4no3/murphy.htm
http://www.who.int/health-topics/zoonoses.htm
http://vetgate.ac.uk/browse/cabi/detail/e1760ee496b6fe4203b90d2969611dfc.html
http://www.vetmed.wisc.edu/pbs/zoones/

Zoonoses (Australia and New Zealand)

Emerging infectious diseases – Australia and New Zealand

Laboratory safety – Australian

FURTHER INFORMATION

For further information contact the College Office

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