



## AUSTRALIAN INSTITUTE OF MEDICAL AND CLINICAL SCIENTISTS

### AIMS Membership Single Discipline Examination – Immunopathology

#### Guide to Study & Suggested Reading List

##### Areas of knowledge expected from candidates:

- An understanding of the preparation and processing of blood samples.
- Knowledge of the theory and practice of methods used in immunology laboratories including protein electrophoresis and immunofixation, nephelometry/turbidimetry, immunofluorescence, ELISA, autoantibody detection, allergy testing, gel precipitation methods, flow cytometry.
- Knowledge of pre-analytical, analytical and post-analytical variables that affect immunology tests and results.
- Knowledge of the disease associations of the tests performed and the purpose of the tests.
- Knowledge of laboratory safety as applied to Immunology laboratories.
- Knowledge of quality control and quality assurance as applied to Immunology laboratories.
- Basic knowledge of Quality Management Systems and accreditation requirements.

##### Recommended Reading List:

- Delves PJ, Martin SJ, Burton DR and Roitt IM (2017) *Roitt's Essential Immunology, 13th edn*, Wiley
- Male D, Stokes Peeble R and Male V (2020) *Immunology, 9th edn*, Elsevier
- Murphy K and Weaver C (2016) *Janeway's Immunobiology, 9th edn*, Wiley
- Punt J, Stranford S, Jones P and Owen JA (2018) *Kuby Immunology, 8th edn*, McMillian Science
- Shoenfeld Y, Dershwil ME, Meroni PL (2007) *Autoantibodies 2nd edn*, Elsevier
- Roitt IM, Brostoff J, Male DK (2001) *Immunology 6th edn*, Mosby
- Roitt IM and Delves PJ (2001) *Essential Immunology 10th edn*, Blackwell Science
- Detrick B, Schmitz JL, Hamilton RG (2016) *Manual of Molecular and Clinical Laboratory Immunology, 8th edn*, ASM Press
- <https://www.anapatterns.org/index.php>



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#### Sample Examination Questions

1. Why would we perform EPG or IFE on urine?
2. What is QAP and what is its role?
3. What disease is associated with antibodies to double stranded DNA? What is the sensitivity of dsDNA?
4. Describe the process of direct immunofluorescence. Give two (2) examples of its use.
5. What is the function of beta 2 mercaptoethanol in protein electrophoresis and immunofixation.
6. What genetic tests are available for coeliac disease? Explain their value.
7. Briefly discuss anti phospholipid antibody testing in the immunology laboratory.
8. In flow cytometry, how and why do we calculate the lymphosum?
9. When performing a pathology assay, what information needs to be recorded to meet accreditation standards?
10. Which tissue substrates are commonly used for detection of mitochondrial antibodies (AMA) by indirect immunofluorescence? Describe the staining pattern. The detection of which other autoantibodies is affected by the presence of AMA?
11. What is a line blot? Describe how a line blot assay works. Give an example of a test performed by this method.
12. Discuss ANCA. Include the important antigens and their disease associations.
13. What is the significance of tests for specific IgE?
14. What is nephelometry? Name three (3) analytes commonly measured by this technique.
15. What is the effect of antigen excess on a nephelometric or turbidimetric assay? How can it be avoided or corrected?