



## AUSTRALIAN INSTITUTE OF MEDICAL AND CLINICAL SCIENTISTS

### AIMS Membership Single Discipline Examination – Anatomical Pathology

#### Guide to Study & Suggested Reading List

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

- Knowledge of the theory and practice of the preparation of biological tissues for light microscopy including fixation, processing, decalcification, microtome and general staining methods such as Haematoxylin and Eosin.
- Knowledge of tissue handling requirements for routine processing for different tissue types.
- Theoretical knowledge and clinical application of Special stains, Immunohistochemical and Immunofluorescence techniques.
- Knowledge of normal histology and basic pathological processes.
- Knowledge of tissue handling requirement for ancillary testing such as molecular, microbiology and cytogenetic testing.
- Knowledge of different cytological preparation techniques to optimise for diagnostic testing.
- Knowledge of tissue preparation for Electron Microscopy.
- Knowledge of Laboratory Safety as applied to Anatomical Pathology laboratories.
- Knowledge of Quality Control as applied to Anatomical Pathology laboratories.

##### Recommended reading list:

- Suvarna KS, Layton C and Bancroft JD *Bancroft's Theory and Practice of Histological Techniques*, Elsevier
- Cook DJ and Warren PJ *Cellular Pathology: An Introduction to Techniques and Applications*, Scion Publishing Ltd
- Eroschenko VP *Atlas of Histology with Functional Correlations*, Wolters Kluwer
- Stevens A, Lowe JS and Young B *Wheater's Basic Histopathology: a colour atlas and text*, Churchill Livingstone, Edinburgh
- Cibas ES and Ducatman BS *Cytology: Diagnostic Principles and Clinical Correlates*, Elsevier
- Freida L. Carson (Editor) and Christa Cappellano (Editor), *Histotechnology: A Self-Instructional Text Hardcover*

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#### Sample Examination Questions

#### ESSAY QUESTION

**(30 minutes per essay question)**

Given a fresh piece of bone 6mm in thickness, describe how you would produce an unstained paraffin section of this piece of bone. Describe all the steps involved in producing the slide with reasons for each step.

#### SHORT ANSWER QUESTIONS

**(Approximately 4 minutes per question)**

1. Name two sites in the body lined by simple squamous epithelium. (1 mark)
2. What percentage of dissolved formaldehyde gas is present in 10% formalin solution? (1 mark)
3. Name two (2) types of microtomes. (1 mark)
4. At what thickness are sections for routine paraffin cut? (1 mark)
5. Name two (2) natural dyes. (1 mark)
6. What is the standard (routine) stain for biological tissues? (1 mark)
7. What is the usual fixative for cervical smears for cytological diagnosis? (1 mark)
8. What type of epithelium lines the skin? (1 mark)
9. What is the most common embedding media used when processing tissues for light microscopy? (1 mark)
10. What stain is normally used to highlight on tissue sections: (2 marks)
  - a. Bacteria
  - b. Fungi
  - c. Mucin
  - d. Haemosiderin
11. Simple squamous epithelium is found in:
  - a. Skin
  - b. Bronchus

- c. Thyroid
  - d. Mesothelium
12. What percentage of dissolved formaldehyde gas is present in 10% formalin solution?
- a. 37%
  - b. 4%
  - c. 10%
  - d. 100%
13. Which stain is normally used to highlight on tissue sections for Melanin pigment?
- a. Perls
  - b. Grocott
  - c. Masson Fontana
  - d. Rubanic acid
14. Which type of tissue preparation is required for karyotype testing?
- a. Fresh
  - b. Frozen
  - c. Formalin
  - d. Glutaraldehyde
15. Which is not an accreditation requirement for ISO15189?
- a. Conditions for receipt of stock
  - b. Registration of IVD tests
  - c. Quality management system
  - d. National registration of staff