**Diploma of Expert Practice in Immunocytochemistry**

**Examination 2020**

**Paper 1**

Short-answer questions

120 minutes

1. Attempt **6 out of 9** questions – **choose 2 from each section**
2. Each question is worth 20 marks
3. You must transfer your answers directly into the answer booklet

**The question paper is not to be removed from the examination room**

**Pre-Analysis**

1. Define what is meant by the term “cold ischemic time”. What impact does cold ischemia have on immunocytochemical staining results and what steps can the laboratory take to prevent this?

2. What steps would you take to prepare formalin-fixed, paraffin-embedded tissue sections for immunocytochemical (ICC) staining procedures? Discuss the impact of poor section quality on ICC staining results.

3. Discuss the advantages and disadvantages of cell blocks versus cytological smears for immunocytochemistry staining.

**Analysis**

4. Discuss the scope and range of antigen retrieval solutions used within automated immunocytochemical staining platforms.

5. What procedures would you undertake to determine the usefulness of proposed positive control tissue for diagnostic immunocytochemical investigations?

6. Compare and contrast chromogenic and fluorescence immunocytochemistry staining techniques.

**Post Analysis**

7. A section has repeatedly detached during ICC staining. Discuss how you would rectify this problem.

8. Discuss the health and safety risk assessments that should be performed within a busy diagnostic immunocytochemistry service.

9. Discuss the uses of digital imaging in the field of immunocytochemistry.

# Diploma of Expert Practice in Immunocytochemistry

## Examination 2020

## Paper 2

Interpretive Questions

120 minutes

1. Attempt **3 out of 5** questions
2. Each question is worth 100 marks
3. You must transfer your answers directly into the answer booklet
4. Begin each new answer on a new page

1a. Discuss and give an overview of immunocytochemistry in the investigation of undifferentiated malignancies. (50 marks)

1b. If an undifferentiated tumour was confirmed as a carcinoma describe, with justification for your choices, the markers you would employ to determine the site origin of this tumour. (50 marks)

2. Figures 1 and 2 are of a cytological preparation of malignant cells from a pleural effusion from a 68-year-old male. Subsequent tissue biopsy showed these cells to be positive for calretinin as shown in Figure 3.

**Figure 1:** A Papanicolaou-stained preparation from the pleural effusion

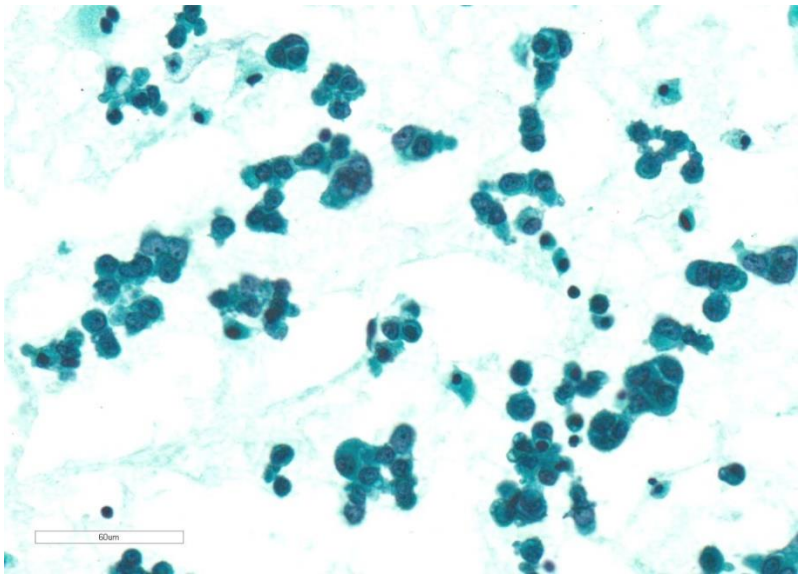



**Figure 2:** A May-Grünwald & Giemsa stained preparation from the pleural effusion

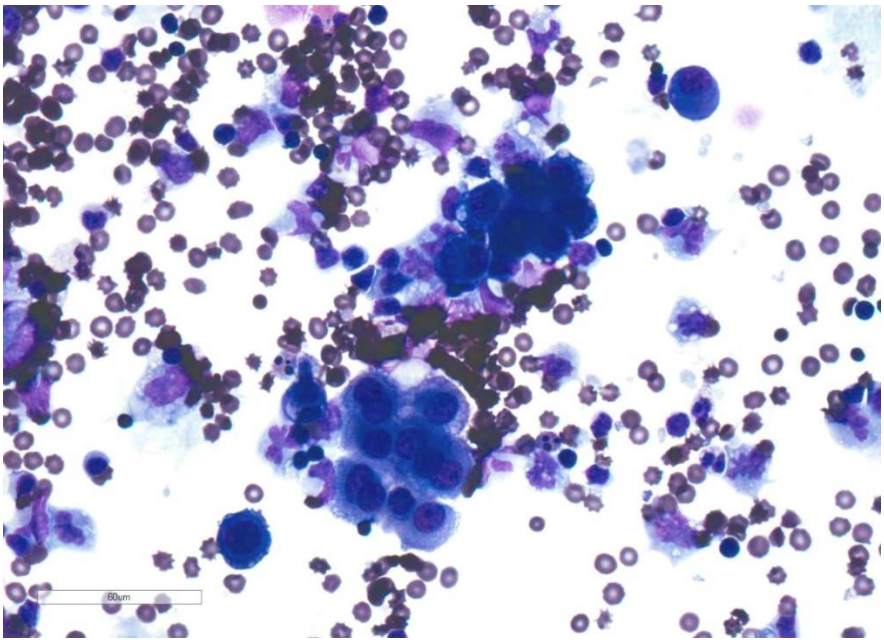
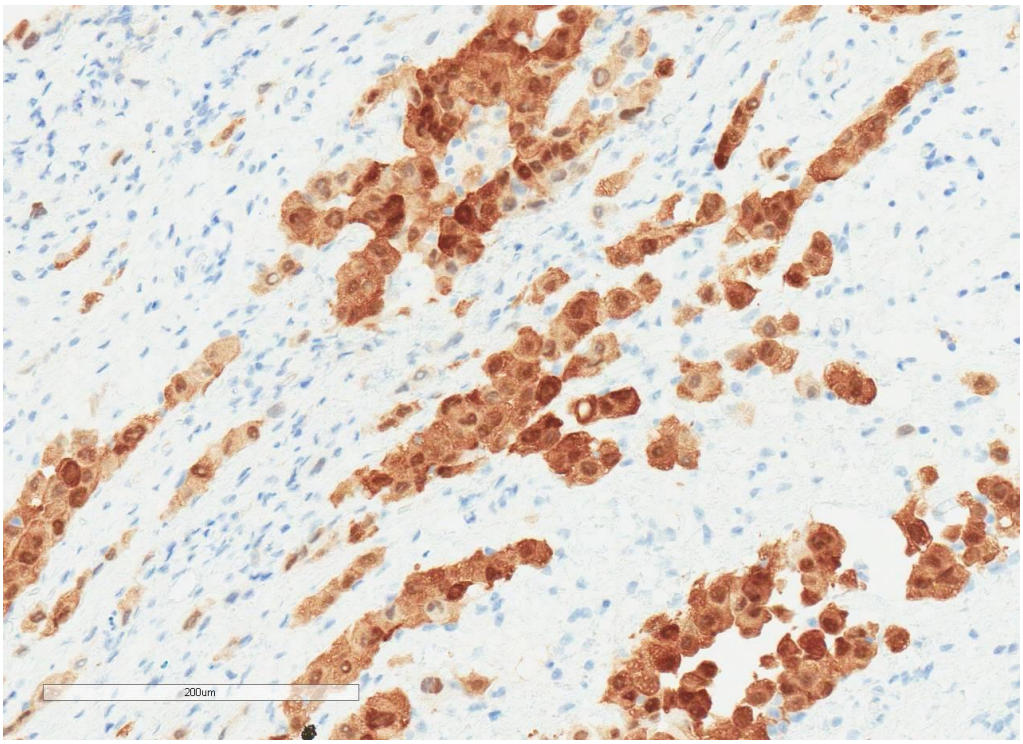


**Figure 3:** Immunocytochemistry for Calretinin in a section of the pleural biopsy




a. Based on these results, discuss a likely diagnosis and the significance of the calretinin staining. (20 marks)

b. Suggest a suitable panel of antibodies to confirm your suspicions and exclude any differential diagnoses. (40 marks)

c. Describe the staining patterns of the antibodies you have named in b) and the relative merits of each marker. (40 marks)

3. Discuss the use of immunocytochemistry to detect viral and bacterial agents in the investigation of disease.

4. You have a CD30 positive tumour:

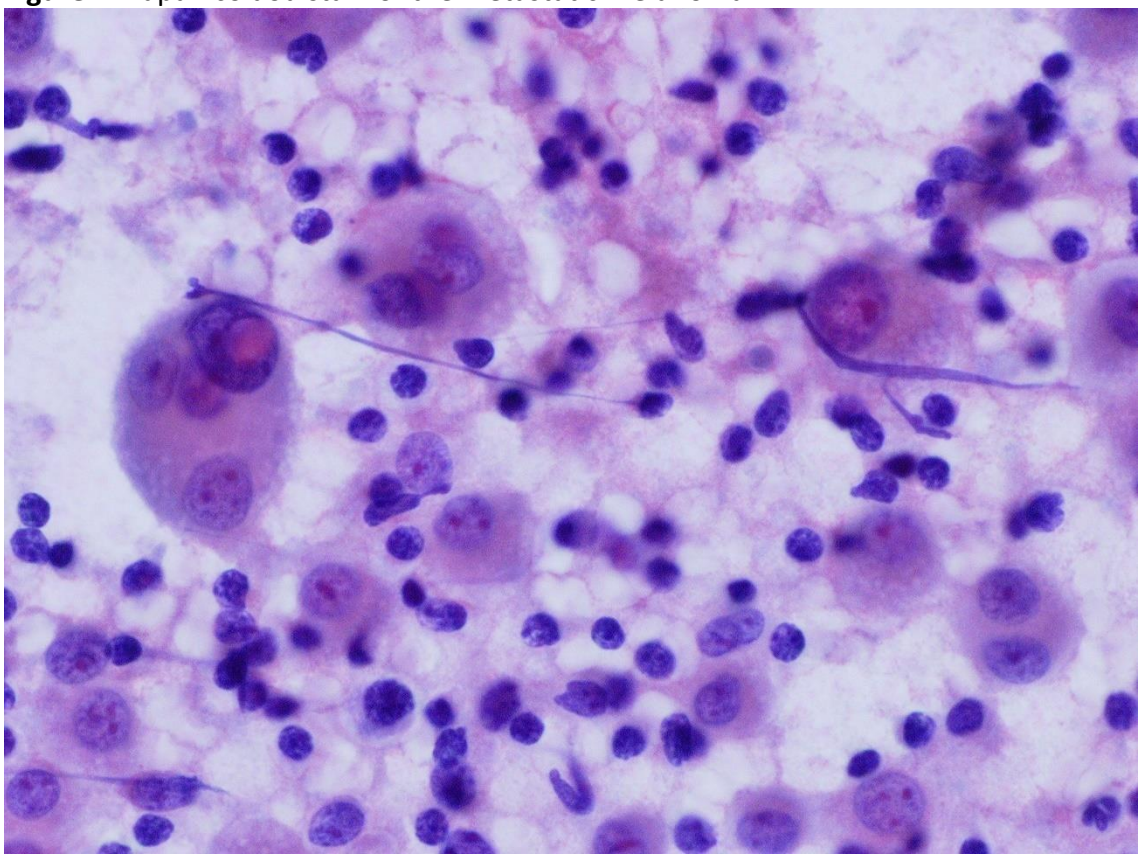
a. What key malignancies might this staining pattern represent? (30 marks)

b. Suggest the use of further immunocytochemistry (ICC) tests to confirm a differential diagnosis. (60 marks)

c. What further ancillary tests might be appropriate in the context of these tumours? (10 marks)

5. A 55-year-old man had presented with a primary skin lesion on his forearm which was diagnosed as a malignant melanoma. A fine-needle aspiration (Figure 1) of a swelling close to the primary lesion was performed and at the same time a sentinel lymph node biopsy was undertaken.

**Figure 1**. Papanicolaou stain of the metastatic melanoma



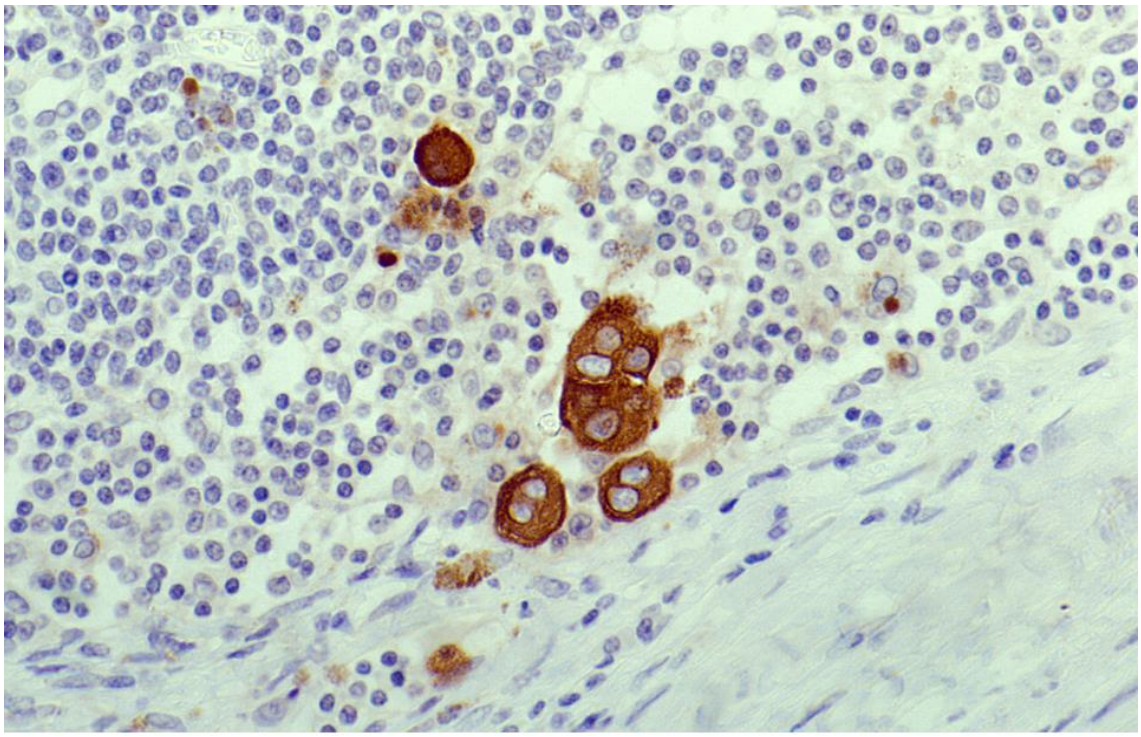
a. Describe the morphological features of these lesional cells. (20 marks)

b. What is a sentinel lymph node? (10 marks)

c. What would be the consequences of a positive sentinel lymph node? (20 marks)

Figure 2 is representative of the tumour cells subsequently examined from the sentinel lymph node biopsy.

**Figure 2.** Melan A labelling of a cluster of tumour cells just on the inside edge of the subcapsular sinus.



d. Evaluate the advantages and disadvantages of different melanoma markers available in diagnostic practice. How would you assure the accuracy and reliability of your results?
(50 marks)