



THE COLLEGES OF MEDICINE OF SOUTH AFRICA

Incorporated Association not for gain
Reg No 1955/000003/08

Final Examination for the Fellowship of the College Of Pathologists of South Africa - Anatomical

27 February 2020



Paper 1

(3 hours)

All questions to be answered. Each question to be answered in a separate book (or books if more than one is required for the answer)

- 1 a) In the interpretation of immunohistochemical assays
- i) List potential causes of background or artifactual staining that you would consider for troubleshooting. (4)
 - ii) Tabulate the advantages and disadvantages of monoclonal and polyclonal antibodies in the interpretation of immunohistochemical assays. (4)
- b) Writes notes on test validation in surgical pathology laboratory under the following subheadings
- i) 3 parameters evaluated in qualitative test validation giving one example. (2)
 - ii) 5 parameters evaluated in quantitative test validation giving one example. (3)
- c) About PCR in surgical pathology
- i) List 8 major applications, giving some examples. (4)
 - ii) List 4 reasons why false negative results may occur. (2)
- d) Discuss the reasons for the diagnosis of Atypical Small Acinar Proliferation (ASAP) in prostatic biopsies. (6)
- [25]
- 2 a) With regards to medulloblastoma, discuss the following
- i) Histologically defined classification. (4)
 - ii) Genetically defined classification, including immunohistochemical stains utilised in this classification. (6)
- b) In the routine evaluation of breast carcinoma, outline the reporting of oestrogen receptor, progesterone receptor and HER2 immunohistochemistry, detailing technical and interpretive aspects of these tests. (5)
- c) When performing an autopsy, what macroscopic findings might a pathologist encounter
- i) In the heart in Systemic Lupus Erythematosus? (2)
 - ii) In the urogenital tract in schistosomiasis? (2)
 - iii) In the heart of a neonate with Tetralogy of Fallot? (2)
 - iv) In the lung, in the 4 stages of lobar pneumonia? (2)
 - v) In the small intestine and liver in Typhoid? (2)
- [25]

- 3 a) Provide a panel of immunohistochemical markers you can use to distinguish renal clear cell carcinoma from the following tumours (14)
- i) Clear cell tumour (sugar tumour) of the lung.
 - ii) Hepatic clear cell carcinoma.
 - iii) Ovarian/endometrial clear cell carcinoma.
- b) Briefly discuss the biosafety principles for infection control during autopsies. (11)
[25]
- 4 a) i) Discuss the molecular pathogenesis of Hereditary medullary thyroid carcinoma. (7)
ii) List 6 immunohistochemical stains expected to be positive in medullary thyroid carcinoma. (3)
- b) Discuss the pitfalls of using proteolytic enzyme digestion antigen retrieval and microwave antigen retrieval in immunohistochemistry. (4)
- c) Describe the renal electron microscopic findings in post-infectious glomerulonephritis. (2)
- d) Discuss cell-rich subepidermal blisters under the following headings
- i) List 5 examples of a cell rich subepidermal blister. (2.5)
 - ii) For each of the above examples, state the exact level of the basement membrane split which would be seen on electron microscopy. (3.5)
- e) List 6 histochemical stains that highlight Michaelis Gutmann bodies. (3)
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Paper 2

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All questions to be answered. Each question to be answered in a separate book (or books if more than one is required for the answer)

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- 1 a) Write notes on the glomerular capillary endotheliosis under the following subheadings
- i) Definition. (0.5)
 - ii) Patho-mechanism. (1)
 - iii) Microscopic features. (4)
 - iv) Electron microscopic appearances. (2)
 - v) Immunofluorescence. (0.5)
- b) Write notes on lymphomatoid granulomatosis under the following subheadings
- i) Definition. (3)
 - ii) Microscopic features in the lung. (3)
 - iii) Grading. (2)
- c) List the most useful cytomorphologic features in the diagnosis of malignancy in bile duct brushings specimens. (7)
- d) List four conditions associated with nodular regenerative hyperplasia of the liver. (2)
- [25]
- 2 a) Compare ovarian low-grade serous carcinoma and ovarian high-grade serous carcinoma under the following headings
- i) Origin, including precursor lesion. (2)
 - ii) Molecular abnormalities. (2)
 - iii) Prognosis and response to chemotherapy. (2)
- b) List the conditions in which squamous metaplasia of endometrial glands is most likely to be found. (2)
- c) Discuss atypical polyploid adenomyoma. (3)
- d) Outline your approach to a spindle cell lesion of the bladder with cytologic atypia in an adult patient with regards to
- i) Differential diagnosis. (3)
 - ii) Potentially useful immunohistochemical stains. (3)
- e) Discuss the use of the immunohistochemical marker CD30 in the evaluation of lymphomas. (3)
- f) Discuss the grading of soft tissue sarcomas. Including potential pitfalls of this grading system. (5)
- [25]

- 3 a) Write short notes on intraductal papillary mucinous neoplasm (IPMN) under the following headings
- i) Gross and light microscopic features. (6)
 - ii) Molecular markers/mutations. (2)
 - iii) Differential diagnosis and name distinguishing feature. (1)
- b) Briefly discuss Castleman disease, hyaline vascular type under the following headings
- i) Microscopy. (5)
 - ii) Immunohistochemistry. (3)
- c) Write short notes on the gross and microscopic features of goblet cell adenocarcinoma (goblet cell carcinoid). (8)
- [25]
- 4 a) Describe NUT carcinomas under the following headings
- i) List the known molecular aberrations of this malignancy. (2)
 - ii) Describe the characteristic light microscopic features. (4)
 - iii) Compare and contrast the immunohistochemical profile of NUT carcinomas and SMARCB1 deficient sinonasal carcinoma. (3)
- b) Describe the light microscopic findings of Pleomorphic hyalinising angiectatic tumour (PHAT). (5)
- c) Describe the Weiss criteria for the classification of adrenal cortical tumours. (4)
- d) Describe the light microscopic features of chondromyxoid fibroma. (4)
- e) Discuss Coeliac disease under the following headings
- i) List the two (2) HLA haplotypes associated with Coeliac disease. (1)
 - ii) List one (1) antigenic environmental trigger of this condition. (0.5)
 - iii) List the factors assessed in the Modified Marsh-Oberhuber classification of coeliac disease. (1.5)
- [25]