



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

25 July 2019



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) Write short notes on the incidence and therapeutic and/or prognostic significance of BRAF alternations (mutations or abnormalities) in the following tumours
- i) Malignant melanoma. (2)
 - ii) Papillary thyroid carcinoma. (2)
 - iii) Colonic adenocarcinoma. (1)
 - iv) Mention the two most common mutated subtypes of *BRAF* relevant to diagnostic pathology. (1)
- b) Write short notes on measles under the following headings
- i) How is this virus spread? (0.5)
 - ii) Pathology of measles pneumonia and its differential diagnosis. (3)
 - iii) Pathology of measles in lymph node infection. (1)
 - iv) Late pathologic findings in the Central Nervous System. (2)
- c) Write short notes on
- i) The aetio-pathogenesis and microscopic pathology of pseudoangiomatous stromal hyperplasia (PASH) of the breast. (4)
 - ii) The macroscopic and microscopic features of breast myofibroblastoma. (5)
 - iii) The microscopic features (2.5) and genetic association(s) (1) of angiomyolipoma. (3.5)
- [25]
- 2 a) List the electron microscopic features of each of the following renal disorders
- i) Acute post streptococcal glomerulonephritis. (2)
 - ii) Membranous glomerulonephritis. (4)
 - iii) Alport syndrome. (2)
 - iv) Minimal change disease. (2)
- b) Discuss the use of immunohistochemistry to distinguish between thymic carcinoma and thymoma. (7)

- c) Discuss the features that can be used to distinguish between dermatofibrosarcoma protuberans and dermatofibroma (benign fibrous histiocytoma) under the following headings
- i) Gross appearance. (1)
 - i) Light microscopy. (4)
 - ii) Immunohistochemistry. (3)
- [25]
- 3 a) Describe an algorithmic approach to the morphological and immunohistochemical classification of lung carcinoma on a small biopsy sample. (15)
- b) List 6 molecular alterations seen in lung adenocarcinomas that may inform targeted therapies. (3)
- c) Discuss the immunohistochemical stains, their staining patterns and the molecular genetic alterations of gastro-intestinal stromal tumours. (7)
- [25]
- 4 a) Discuss dilated (congestive) cardiomyopathy (CMO) and arrhythmogenic right ventricular cardiomyopathy under the following headings
- i) Dilated CMO - aetiopathogenesis and pathological features (gross and microscopic). (8)
 - ii) Arrhythmogenic right ventricular cardiomyopathy – aetiopathogenesis and pathological features (gross and microscopic). (4)
- b) List the 5 cytoplasmic intermediate filaments. (2.5)
- c) Pertaining to the technique of immunohistochemistry, list antigen retrieval techniques and discuss possible causes of false negative and false positive results. (7.5 marks)
- d) Briefly describe the differences between monoclonal and polyclonal antibodies according to their sensitivity and specificity and provide an example of each. (3)
- [25]



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26 July 2019



Paper 2

(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) Discuss the pertinent diagnostic histopathological features and the appropriate ancillary investigations for the following infections in the upper digestive tract (oesophagus, stomach and proximal small intestine)
- i) *Helicobacter pylori*. (5)
 - ii) *Helicobacter heilmannii*. (1)
 - iii) *Mycobacterium avium intracellulare*. (4)
 - iv) Whipple disease. (2)
- b) List the pathological differences that can facilitate a distinction between a plasmacytoma/myeloma and a plasmablastic lymphoma. (5)
- c) Write short notes on hepatoblastoma, under the following headings
- i) Epidemiology and predisposing syndromes. (1)
 - ii) Histopathological classification including brief description of each type. (7)
- [25]
- 2) a) Discuss 5 conditions in which benign thyroid parenchyma can be found outside the thyroid gland. (5)
- b) List the pathological (excluding histochemical & immunophenotypic) features used to distinguish a primary ovarian mucinous carcinoma from a metastasis from the large bowel. (7)
- c) Write notes on PEComas of the lung under the following headings
- i) Microscopic features. (4)
 - ii) Immunohistochemistry. (2)
- d) List the criteria used to diagnose maternal vascular malperfusion of the placenta. (7)
- [25]
- 3 a) List the reporting categories proposed by the Paris System for reporting urinary cytology. (2.5)
- b) List the diagnostic categories used in the Bethesda System for reporting thyroid cytology. (4)
- c) Tabulate the common age profiles and locations of the three morphological variants of rhabdomyosarcoma. (7)

- d) Briefly discuss the cytogenetic alterations commonly seen in alveolar rhabdomyosarcoma. (2.5)
- e) List the three tiers of meningeothelial tumours according to their biological potential and indicate their corresponding WHO grades. (3)
- f) List the WHO criteria used to stratify meningeothelial tumours into the two more aggressive categories. (6)
- [25]
- 4 a) Discuss the benign mimics of malignancy that may occur in the prostate gland. (7)
- b) Describe the epidemiology and microscopic pathology of nasopharyngeal carcinoma. (8)
- c) Describe the following entities according to the location in which they occur and the pathological features (gross and microscopic)
- i) Cholesteatoma. (4)
- ii) Craniopharyngioma. (6)
- [25]