



THE COLLEGES OF MEDICINE OF SOUTH AFRICA

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Part I Examination for the Fellowship of the
College of Pathologists of South Africa – Anatomical Pathology



30 January 2020

1 Paper only

(3 hours)

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

- 1
 - a) With regards to the following steps of the cell cycle (G1, G1/S, S, G2, G2/M, M), briefly state what occurs in each of the steps. (3)
 - b) Describe the light microscopic features of an apoptotic cell (excluding changes in the background tissue). (2)
 - c) List the four most common tissue sites where metastatic calcification occurs. (2)
 - d) Describe the 3 major tissue changes that occur in acute inflammation (i.e. the major components of acute inflammation). (3)
 - e) Describe the 3 major tissue changes that occur in chronic inflammation. (3)
 - f) Mention 3 complications of soft tissue repair and give one example for each of the complications. (3)
 - g) A patient dies from chronic congestive cardiac failure. Describe the expected macroscopic (3 x ½) and light microscopic (3 x ½) findings of the spleen at autopsy. (3)
 - h) Tabulate 3 differences between antemortem thrombus and postmortem clot. (3)
 - i) Name the classic germline mutated gene involved in adenomatous polyposis coli (½), the type of mutation affecting the gene (½), the functional role of the gene (½), and the immediate downstream sequence of molecular events resulting from the mutation of that gene (3 x ½). (3)
- 2
 - a) Regarding acute, invasive fungal rhinosinusitis by Mucormycosis (molds of Zygomycetes class):
 - i) Mention 4 predisposing factors to infection. (2)
 - ii) Write short notes on the pathogenesis of this infection. (2)
 - iii) Write short notes on the pathology of acute invasive fungal rhinosinusitis. (3)
 - b) Radiation is used in the treatment of many cancers. Describe the possible changes induced by radiation that can be seen on light microscopy in a rectal biopsy from a patient who had pelvic irradiation as follows:
 - i) Mucosal and stromal changes. (3)
 - ii) Vascular changes. (2)
 - c) For each of the following errors in morphogenesis, provide 2 examples of congenital anomalies that result from that error:
 - i) Malformation. (1)
 - ii) Disruption. (1)
 - iii) Deformation. (1)

- d) With regards to Takayasu's arteritis
- i) Mention the pathological definition that is used for Takayasu's arteritis. (1)
 - ii) Provide 2 of the most common sites of involvement. (1)
 - iii) Mention 2 macroscopic features of blood vessels. (1)
 - iv) Describe the light microscopic pathology. (3)
- e) Mention 4 clinicopathological types of vegetative endocarditis (4 x 1/2) and the characteristic macroscopic appearance of each type respectively (4 x 1/2). (4)
- [25]
- 3
- a) Broadly group the precipitating causes of Acute Respiratory Distress Syndrome (5 x 1/2) and give an example for each of your groupings (5 x 1/2). (5)
 - b) Give 3 criteria that are required to diagnose the nephrotic syndrome (3 x 1/2) and provide an explanation for their pathogenesis respectively (5 x 1/2). (4)
 - c) Mention 2 broad groups of conditions associated with acute tubular necrosis (2 x 1/2), explain their respective pathogeneses (4 x 1/2), and provide 1 cause for each group (2 x 1/2). (4)
 - d) Write short notes on the role that stellate cells (Ito cells) play in chronic liver disease with fibrosis and scarring. (5)
 - e) Write short notes on the macroscopic and microscopic manifestations of tuberculosis in the brain. (7)
- [25]
- 4
- a) Tabulate and compare partial and complete hydatidiform moles with regards to typical pathogenesis (4 x 1/2), commonest ploidy (2 x 1/2), light microscopic features (6 x 1/2), and clinical significance (4 x 1/2). (8)
 - b) With regards to gynaecomastia, write short notes on clinical presentation (2 x 1/2) and light microscopic features (4 x 1/2). (3)
 - c) With regards to hypopituitarism:
 - i) Describe the pathogenesis of Sheehan's syndrome. (2)
 - ii) List 8 causes of hypopituitarism other than Sheehan syndrome and provide an example for each cause. (8)
 - d) Write short notes on the light microscopic features of Paget disease of the bone. (4)
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