



COLLEGE OF HEALTH, AGRICULTURE AND NATURAL SCIENCES
DEPARTMENT OF BIOMEDICAL AND LABORATORY SCIENCES
BACHELOR OF MEDICAL LABORATORY SCIENCES HONOURS DEGREE

SLS405: HISTOPATHOLOGY II

END OF SEMESTER FINAL EXAMINATIONS

19 NOVEMBER 2021

LECTURER : DR MAIBOUGE SALISSOU

DURATION : 5 HRS

INSTRUCTIONS

1. Write your candidate number on your answer sheets.
2. Answer any **ONE** question of your choice.
3. Each full question carries 100 marks
4. Submit your answer scripts as a PDF document through Moodle **ONLY**.
5. Use the following specifications in your answer scripts
 - Font : Times New Roman
 - Font size : 12
 - Line spacing: 2.0
6. Credit will be given for logical, systematic neat presentations

Question 1 (100 marks)

A 25-year-old woman presents for a gynecologic examination. The cervical Pap smear shows “koilocytic atypia” characterized by perinuclear halos and wrinkled nuclei (See **Figure 1** below). A cervical biopsy reveals invasive squamous cell carcinoma. Molecular tests for human papillomavirus (HPV) in the tumor cells are positive.

- a. What are morphological features of squamous cells carcinomas and their correlation to HPV infection? (50)
- b. Give a detailed account of oncogenes? (20)
- c. Justifying your answer, which of the following mechanisms of disease best explains the role of HPV in the pathogenesis of neoplasia in this patient? (30)
 - i. Activation of cellular oncogenes
 - ii. Enhanced transcription of telomerase gene
 - iii. Episomal viral replication
 - iv. Inactivation of tumor suppressor proteins
 - v. Insertional mutagenesis

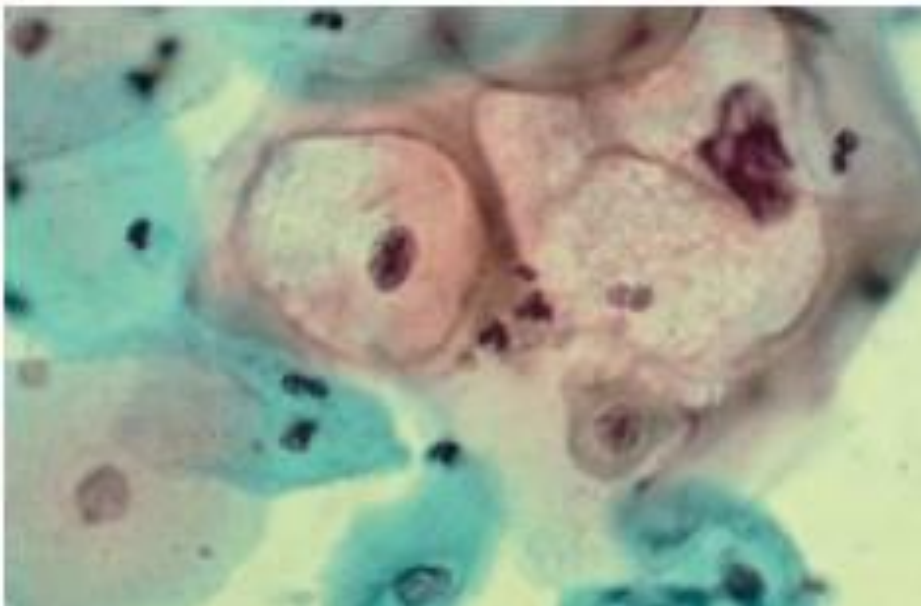


Figure 1

Question 2 (100 marks)

A 55-year-old woman presents with increasing weight loss and fatigue and subsequently dies of a metastatic tumor.

- a. Giving examples, discuss in detail how tumors spread. (50)
- b. The vertebral column of the woman at autopsy is shown in **Figure 2**. Justifying your answer, which of the following conditions relate to the findings of the autopsy . (50)
 - i. Chondrosarcoma
 - ii. Melanoma
 - iii. Multiple myeloma
 - iv. Osteosarcoma
 - v. Rhabdomyosarcoma



Figure 2

Question 3 (100 maks)

A 78-year-old woman dies in her sleep. A Prussian blue stain of the lungs at autopsy is shown in **Figure 3**.

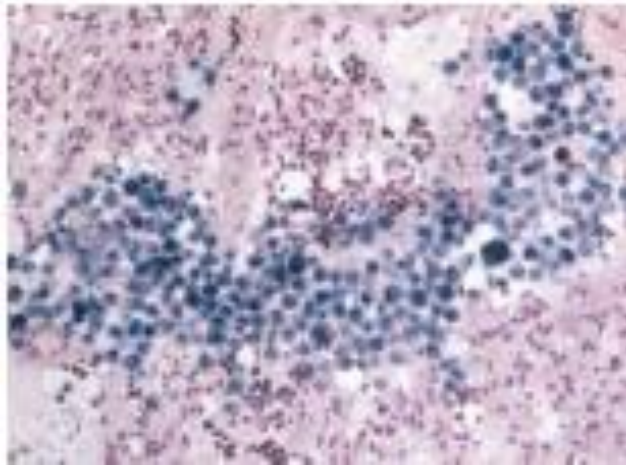


Figure 3

- a.** Which of the following is the most likely cause of these histopathologic findings? Justify your answer. (50).
- i Acute myocardial infarction.
 - ii Congestive heart failure.
 - iii Diffuse alveolar damage.
 - iv Hereditary hemochromatosis.
 - v Pulmonary infarction.
- b.** Discuss Virchow triads in relation to your diagnosis? (50)

The End