

CANDIDATE NUMBER.....



*“Investing in Africa’s Future”*

**COLLEGE OF HEALTH, AGRICULTURE AND NATURAL SCIENCES**

**DEPARTMENT OF BIOMEDICAL AND LABORATORY SCIENCES**

**BACHELOR OF MEDICAL LABORATORY SCIENCES HONOURS DEGREE**

**NSLS405: HISTOPATHOLOGY**

**END OF SECOND SEMESTER FINAL EXAMINATIONS**

**APRIL 2024**

**LECTURER: DR MAIBOUGE SALISSOU**

**DURATION: 3 HOURS**

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***INSTRUCTIONS***

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1. Write your candidate number on the space provided on top of each page
  2. Answer **all** questions in sections A on the question paper.
  3. Answer **all** questions in section B on separate answer sheets provided.
  4. Answer any **3** questions in section C on separate answer sheets provided
  5. The mark allocation for each question is indicated at the end of the question
  6. Credit will be given for logical, systematic and neat presentations in sections B and C
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**SECTION A : MULTIPLE CHOICE [ 40 MARKS ]**

- **Answer all questions by indicating the correct response using a T for TRUE or F for FALSE for each statement in all the questions**
  - **Each correct response is allocated half a mark and each question carries 2 marks**
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1. The following are characteristics of a granuloma:
    - A. Composed of fused giant cells.
    - B. Composed of epithelioid cells.
    - C. Composed of a mixture of chronic inflammatory cells.
    - D. Composed of polymorphonuclear leucocytes,.
  
  2. The following impair healing of a wound:
    - A. Deficiency of galactosamine.
    - B. Excess of adrenal glucocorticoid hormones.
    - C. Good vascular supply.
    - D. Tissue hypoxia.
  
  3. The following conditions are risk factors to thrombus formation:
    - A. Activation of the coagulation mechanism
    - B. Endothelial damage.
    - C. Formation of platelet aggregates.
    - D. Vascular stasis.
  
  4. The following are causes of general oedema:
    - A. Carcinomatosis.
    - B. Hay fever.
    - C. Nephrotic syndrome.
    - D. Right ventricular failure.
  
  5. The following are causes of secondary hyperaldosteronism:
    - A. Adrenocortical adenoma.
    - B. Hepatic cirrhosis with ascites.
    - C. Nephrotic syndrome.
    - D. Untreated congestive cardiac failure.

6. The following are predisposing factors for atheroma:
- A. High level of serum high density lipoprotein.
  - B. High level of serum low density lipoprotein (LDL).
  - C. Male sex.
  - D. Systemic hypertension.
7. The following are features of clear cell carcinoma of the kidney:
- A. Bony secondaries.
  - B. Childhood tumour.
  - C. May appear encapsulated.
  - D. Renal vein invasion.
8. Which of The following are the most common types of bladder tumour:
- A. Adenocarcinoma.
  - B. Papillary transitional cell carcinoma.
  - C. Solid transitional call carcinoma.
  - D. Transitional cell papilloma.
9. The following are features of osteosarcoma :
- A. 50% of tumours occur around the knee.
  - B. Lung secondaries common.
  - C. Peak incidence between 10 and 25 years of age.
  - D. Usually metastasize to lymph nodes.
10. The following are true for prostatic carcinoma:
- A. Acid phosphatase level raised in serum.
  - B. Alkaline phosphatase detected in tumour cells.
  - C. Microacinar adenocarcinoma.
  - D. Usually arises at periphery of the gland.
11. The following malignant tumours frequently spread through haematogenous route:
- A. Bronchogenic carcinoma
  - B. Renal cell carcinoma
  - C. Follicular carcinoma thyroid
  - D. Seminoma testis
12. . Grading of tumours depends upon the following:
- A. Degree of anaplasia
  - B. Metastatic spread
  - C. Rate of growth of cells.
  - D. Degree of differentiation

13. Hypercalcaemia as a paraneoplastic syndrome is observed in the following tumours:
- A. Squamous cell carcinoma lung
  - B. Small cell carcinoma lung
  - C. Renal cell carcinoma
  - D. Breast cancer
14. Lymphocytic infiltrate is frequently present in the following tumours indicative of host immune response:
- A. Seminoma testis
  - B. Medullary carcinoma breast
  - C. Papillary carcinoma thyroid
  - D. Malignant melanoma
15. The following are the common site for endometriosis :
- A. Hernial sacs
  - B. Vulva
  - C. Ovaries
  - D. Vagina
16. Bilaterality of following ovarian tumours occurred commonly in the followings :
- A. Benign serous tumours
  - B. Malignant serous tumours
  - C. Benign mucinous tumours
  - D. Brenner tumour
17. A 60 years old woman reports to a physician for progressive fatigue, loss of appetite and malaise for the last 2 months. An upper GI endoscopy reveals an ulcerative mass located along the lesser curvature. CT scan of the abdomen shows bilateral ovarian masses. What are the following conditions this patient is most likely to have?
- A. Ampullary carcinoma
  - B. Krukenberg tumour
  - C. Serous adenocarcinoma of the ovary
  - D. Endometrioid carcinoma of the uterine body
18. A Pap smear of a 30 year old woman was found to have atypical cells suggestive of HPV infection. Which of the following abnormalities describe the characteristic cytologic feature caused by HPV infection in Pap smear?
- A. Acanthosis
  - B. Parakeratosis
  - C. Hyperkeratosis
  - D. Koilocytosis

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**19.** The following features characterize wet-fixed smears over air-dried smears:

- A. Pap and H & E stain are applied for the former
- B. The nuclear details are better seen
- C. Cytoplasmic details are better seen
- D. Cell size is comparable to tissue section

**20.** The following are characteristics of liquid based cytology.

- A. provides uniform monolayered cell dispersion
- B. is useful only for gynaecological samples
- C. is useful only for non-gynaecological samples
- D. causes cellular clumping

**SECTION B: [20 MARKS]**

**Answer all questions on separate answer sheets provided**

- 1. State all types of necrosis and keys features. [5]
- 2. State and discuss all type of n embolisms. [5]
- 3. List and discuss of types of granulomas .[5]
- 4. List advantages and disadvantages of conventional Pap smear against liquid base preparation. [5]

**SECTION C: [75 marks]**

**Answer any 3 questions from this section on separate answer sheets provided**

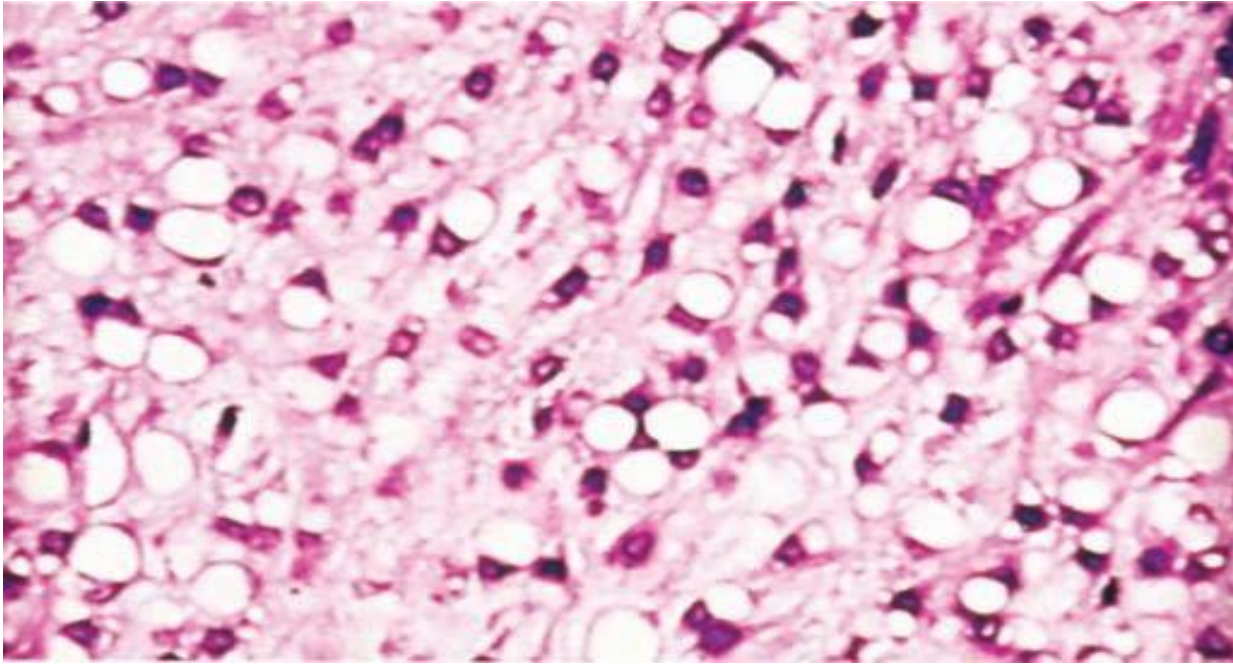
- 1. Discuss prostatic adenocarcinomas. [25]
- 2. Discuss seminomas. [25]
- 3. A 40-year-old woman presents with 6 months of increasing abdominal girth. Gynecologic examination reveals large bilateral ovarian masses. The patient undergoes bilateral oophorectomy. The pathology report reads “Krukenberg tumor,” and the histopathologic findings are shown in **Figure 1**.

3a) Choose the best diagnosis among options below ( **5pts**)

- a) Serum AFP level,
- b) Biopsy of the cervix and endometrial curettage,
- c) Laparoscopy,
- d) Serum hCG level,
- e) Gastric endoscopy?

3b) Justify your choice ( 5 pts)

3c) Explain why you excluded the others options (15 pts)



**Figure 1**

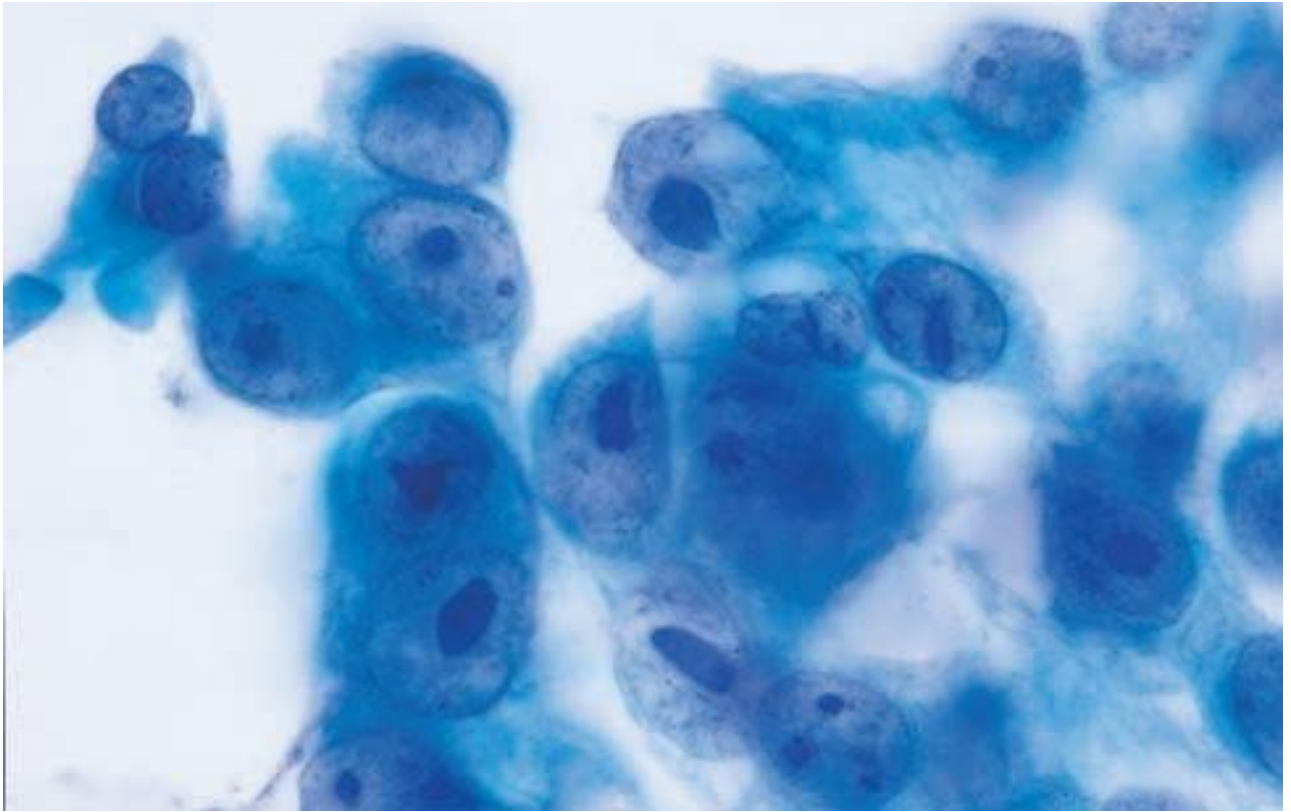
4. A 54-year-old man presents with a 4-month history of progressive weight loss. He has smoked three packs of cigarettes a day for 30 years. An X-ray film of the chest shows a mass in the right upper lobe. The bronchial brush specimen is shown in **Figure 2** below. Special stains are positive for mucin.

4a) Choose the best diagnosis among options below (5 pts)

- a) Adenocarcinoma
- b) Malignant lymphoma
- c) Small cell carcinoma
- d) Squamous cell carcinoma
- e) Transitional cell carcinoma

4b) Justify the choice of your diagnosis ( 5 pts)

4c) Explain why you excluded the others options (15 pts)



**Figure 2**

5. A 78-year-old woman dies in her sleep. A Prussian blue stain of the lungs at autopsy is shown in **Figure 3**.  
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5a) Choose the best diagnosis among options below (5 pts)

- a) Acute myocardial infarction
- b) Congestive heart failure
- c) Diffuse alveolar damage
- d) Hereditary hemochromatosis
- e) Pulmonary infarction

5b) Justify the choice of your diagnosis ( 5 pts)

5c) Explain why you excluded the others options (15 pts)



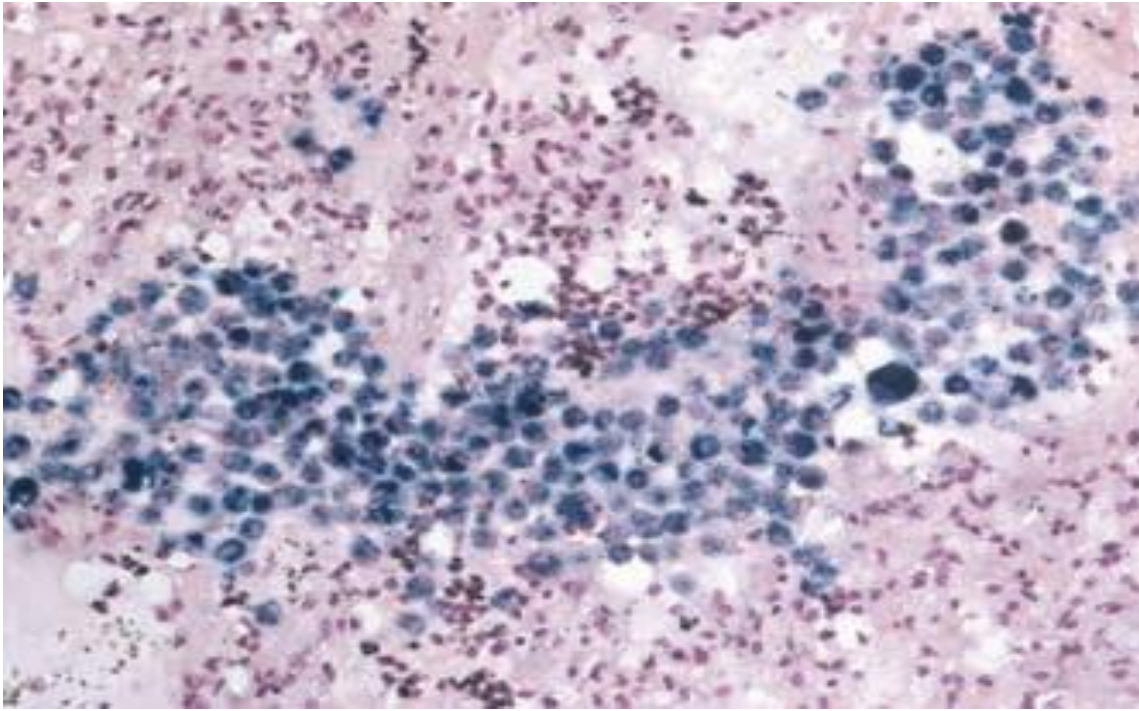


Figure 3