CANDIDATE NUMBER.....

AFRICA UNIVERSITY
A United Methodist-Related Institution

"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

MAY 2023

LECTURER: DR MAIBOUGE SALISSOU

DURATION: 3 HOURS

INSTRUCTIONS

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 [40MARKS]

- **Answer all questions by indicating T for TRUE or F for FALSE for each statement in all the questions**
- **Each correct response is allocated half mark**

1. Chocolate cyst of the ovary is:
A. Haemorrhagic corpus luteum
B. Ruptured luteal cyst
C. Endometriotic cyst
D. Ruptured follicular cyst

2. Bilaterality of following ovarian tumours is most common:
A. Benign serous tumours
B. Malignant serous tumours
C. Benign mucinous tumours
D. Brenner tumour

3. Krukenberg tumour is bilateral metastatic tumour from the following primary sites except:
A. Stomach
B. Colon
C. Breast
D. Endometrium

4. Pleural effusion, if a delay of more than 12 hours is anticipated for processing, it must be fixed in:
A. 95% ethanol
B. Equal volume of 10% formalin
C. Bouin's fluid
D. Picric acid

5. Enzymatic digestion is the predominant event in the following type of necrosis:
A. Coagulative necrosis
B. Liquefactive necrosis
C. Caseous necrosis
D. Fat necrosis

6. The following features characterise wet-fixed smears over air- dried smears except:
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

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7. 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

8. Abdominal fat aspiration is done for the diagnosis of:
A. Obesity
B. Amyloidosis
C. Metastatic cancer
D. Multiple myeloma

9. Metastasis to the following tissues occur early in prostatic carcinoma:
A. Vertebrae
B. Obturator lymph node
C. Lungs
D. Brain

10. In an undescended testis, the following tumour develops most often:
A. Seminoma
B. Teratoma
C. Choriocarcinoma
D. Yolk sac tumour

11. Seminoma is a:
A. Benign tumour
B. Borderline tumour
C. Malignant tumour
D. Locally aggressive tumour

12. AFP levels are elevated in 100% cases of following type of germ cell tumour:
A. Seminoma
B. Embryonal carcinoma
C. Yolk sac tumour
D. Choriocarcinoma

13. Prostatic hyperplasia affects most often:
A. Peripheral prostate
B. Periurethral prostate
C. Capsule of prostate
D. Entire prostate

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14 The most thrombogenic constituent of atheroma is:
A. Fibrous cap
B. Lipid core
C. Foam cells
D. Smooth muscle cells

15 Tubercle bacilli in caseous lesions are best demonstrated in:
A. Caseous centre
B. Margin of necrosis with viable tissue
C. Epithelioid cells
D. Langhans' giant cells

16. The most common cause of arterial thromboemboli is:
A. Cardiac thrombi
B. Aortic aneurysm
C. Pulmonary veins
D. Aortic atherosclerotic plaques

17.For metaplasia the following holds true:
A. It is a disordered growth
B. It affects only epithelial tissues
C. It is a reversible change
D. It is an irreversible and progressive change

18. Diabetic foot is an example of:
A. Dry gangrene
B. Wet gangrene
C. Gas gangrene
D. Necrotising inflammation

19. Idiopathic calcinosis cutis is an example of:
A. Necrotising inflammation
B. Dystrophic calcification
C. Metastatic calcification
D. Calcified thrombi in veins

20. In atrophy, the cells are:
A. Dead cells
B. Shrunken cells
C. Irreversibly injured cells
D. Reversibly injured cells

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SECTION B: [20 MARKS]

Answer all questions on separate answer sheets provided

1. State all types of necrosis and their key features. [5]
2. State and explain the main types of spread of tumors. [5]
3. State the main laboratory findings associated with inflammatory conditions .[5]
4. List advantage and disadvantage 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 50-year-old woman presents with a 1-month history of intermittent vaginal bleeding. A Pap smear is normal. Pelvic examination reveals a left adnexal mass. A uterine curettage shows complex endometrial hyperplasia without atypia. A CT scan of the abdomen reveals a 5-cm mass replacing the left ovary. The patient undergoes hysterectomy and bilateral salpingo-oophorectomy. Histologic examination of the ovarian mass is shown in the image in Figure1.

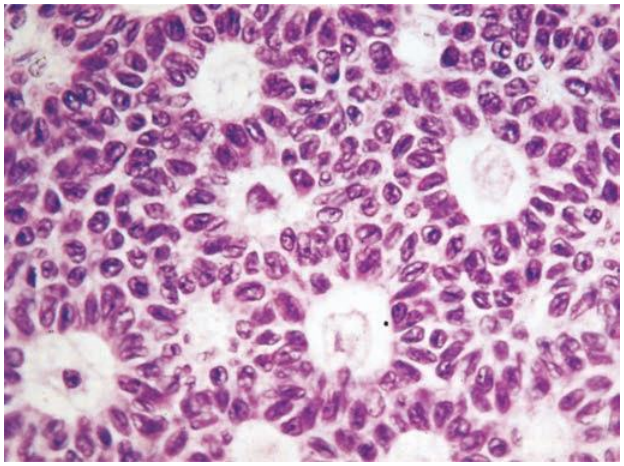

Figure 1

(a) Which of the following is the appropriate pathologic diagnosis? (10 marks)

(A) Dysgerminoma
(B) Endometrioid carcinoma
(C) Granulosa cell tumor
(D) Mucinous cystadenocarcinoma
(E) Sertoli-Leydig cell tumor

(b) Justify your answer (15 marks)

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4. A 59-year-old female alcoholic is brought to the emergency room with a fever (38.7°C/103°F) and foul-smelling breath. The patient subsequently develops acute bronchopneumonia and dies of respiratory insufficiency. A pulmonary abscess is identified at autopsy as shown in the image Figure 2

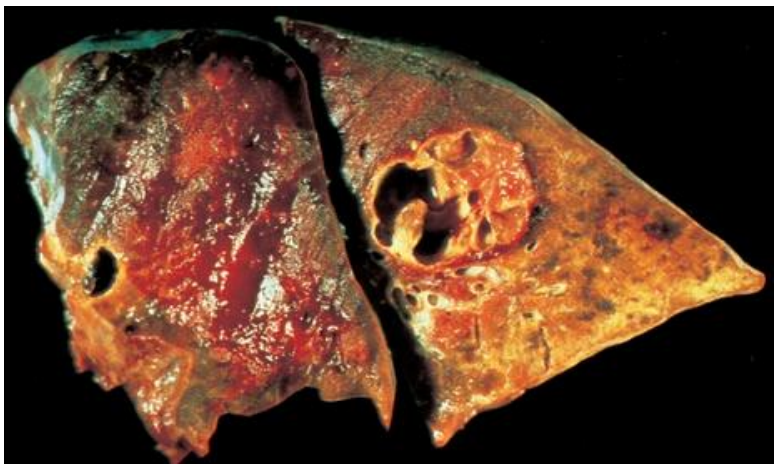

Figure 2

(a) Histologic examination of the wall of this lesion would most likely demonstrate which of the following pathologic changes? (10 marks)

(A) Caseous necrosis
(B) Coagulative necrosis
(C) Fat necrosis
(D) Fibrinoid necrosis
(E) Liquefactive necrosis

(b) Justify your answer (15 marks)

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

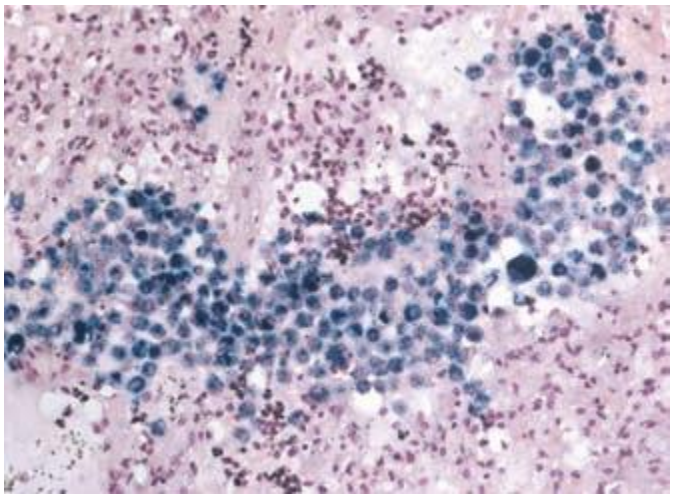

Figure 3

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(a) Which of the following is the most likely cause of these histopathologic findings? (10marks)

(A) Acute myocardial infarction
(B) Congestive heart failure
(C) Diffuse alveolar damage
(D) Hereditary hemochromatosis
(E) Pulmonary infarction

(b) Justify your answer. (15 marks)

END