

Candidate number.....



“Investing in Africa’s Future”

COLLEGE OF HEALTH, AGRICULTURE & NATURAL SCIENCES

DEPARTMENT OF BIOMEDICAL AND LABORATORY SCIENCES

NSLS 405 HISTOPATHOLOGY

END OF SEMESTER EXAMINATIONS

NOVEMBER 2022

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. Credit will be given for logical, systematic and neat presentations in sections B and C
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Sections A (40 marks)

Answer all questions by indicating T for TRUE or F for FALSE in front of each of the statements (a) to (d) in all the questions. Each question carry 2 marks.

Question1 . Hypercalcaemia as a paraneoplastic syndrome is observed in the following tumours except:

- A. Squamous cell carcinoma lung
- B. Small cell carcinoma lung
- C. Renal cell carcinoma
- D. Breast cancer

Question2 Lymphocytic infiltrate is frequently present in the following tumours indicative of host immune response except:

- A. Seminoma testis
- B. Medullary carcinoma breast
- C. Papillary carcinoma thyroid
- D. Malignant melanoma

Question3 . The following antibody-stain is used in immunohistochemistry to identify epithelial cells:

- A. Desmin
- B. Vimentin
- C. Cytokeratin
- D. Neurofilaments

Question4 The most thrombogenic constituent of atheroma is:

- A. Fibrous cap
- B. Lipid core
- C. Foam cells
- D. Smooth muscle cells

Question5 . The most important and common complicated atheromatous lesion in coronary artery in acute myocardial infarction is:

- A. Calcification
- B. Coronary thrombosis
- C. Aneurysm
- D. Ulceration

Question6 . In an undescended testis, the following tumour develops most often:

- A. Seminoma
- B. Teratoma
- C. Choriocarcinoma

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D. Yolk sac tumour

Question7 Seminoma is a:

- A. Benign tumour
- B. Borderline tumour
- C. Malignant tumour
- D. Locally aggressive tumour

Question8 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

Question 9 . Prostatic acid phosphatase (PAP) levels given below are diagnostic of prostatic carcinoma:

- A. 1-2 KA units
- B. 2-3 KA units
- C. 3-5 KA units
- D. 5-7 KA units

Question 10 . Metastasis to the following tissues occur early in prostatic carcinoma:

- A. Vertebrae
- B. Obturator lymph node
- C. Lungs
- D. Brain

Question 11. Which of the following is true?

- A. Arterial thrombi are white and occlusive
- B. Venous thrombi are white and occlusive
- C. Arterial thrombi are white and mural
- D. Venous thrombi are red and mural.

Question 12. Tubercle bacilli cause lesions by the following mechanisms:

- A. Elaboration of endotoxin
- B. Elaboration of exotoxin
- C. Type IV hypersensitivity
- D. Direct cytotoxicity

Question 13. The following statements are correct for tubercle bacilli except:

- A. Tubercle bacilli can be cultured
- B. Tubercle bacilli are anaerobe

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- C. Tubercle bacilli thrive best in the apex of lung
- D. M. smegmatis is not pathogenic to man

Question 14. 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

Question15 . Hamartoma refers to:

- A. Tumour differentiating towards more than one cell line
- B. Tumour arising from totipotent cells
- C. Mass of disorganised but mature cells indigenous to the part
- D. Mass of ectopic rests of normal tissue

Question16 . Increased number of normal mitoses may be present in the following tissues except:

- A. Bone marrow cells
- B. Nails
- C. Hepatocytes
- D. Intestinal epithelium

Question 17 A tumour is termed medullary when it is almost entirely composed of:

- A. Amyloid stroma
- B. Large areas of necrosis
- C. Abundant lymphoid tissue
- D. Parenchymal cells

Question 18 All the following malignant tumours metastasise except:

- A. Synovial sarcoma
- B. Malignant mesothelioma
- C. Glioma
- D. Neuroblastoma

Question19 . Grading of tumours depends upon the following except:

- A. Degree of anaplasia
- B. Metastatic spread
- C. Rate of growth of cells
- D. Degree of differentiation

Question 20 . Patients of xeroderma pigmentosum are prone to develop the following cancers except:

- A. Basal cell carcinoma

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- B. Sweat gland carcinoma
- C. Malignant melanoma
- D. Squamous cell carcinoma

SECTION B

Answer all questions in this section. Each question carries 5 marks

1a) For each effect thyroid condition on the left (a,b,c) you should select the most appropriate association from the list on the right(A,B,C,D,E)

- a. Hyperthyroidism.
- b. Hypothyroidism.
- c. Non-toxic goitre.
- A. Adenoma.
- B. Auto-immune disease.
- C. Dyshormogenesis.
- D. Graves' disease.
- E. Iodine deficiency. .(**10pts**)

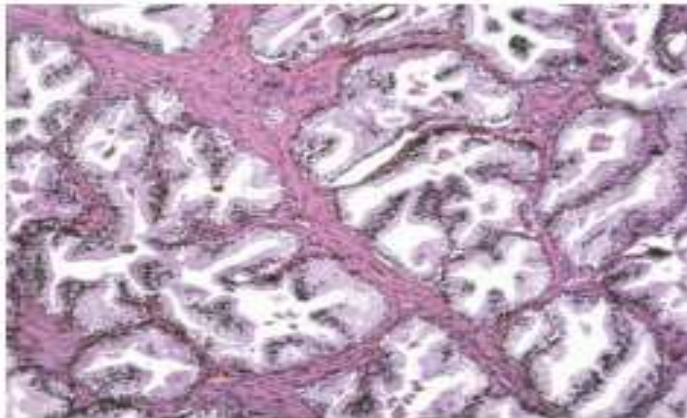
1b) Justified your answers for each answer .(**10 pts**)

SECTION C

Answer any 3 cases on separate answer sheets provided. Each case carries 20 marks.

Case 1

A 67-year-old man complains of increased urgency to void. He could not completely empty his bladder and felt “distended” and “irritated” all the time. Rectal digital examination reveals an enlarged nodular prostate. A biopsy discloses hyperplastic prostatic glands (shown in the image).



a) If this patient’s prostate continues to enlarge, which of the following is a possible complication? (10)

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- (A) Adenocarcinoma of prostate
- (B) Hydroureter and hydronephrosis
- (C) Intratubular germ cell neoplasia
- (D) Malakoplakia of the bladder wall
- (E) Urothelial cell carcinoma of bladder

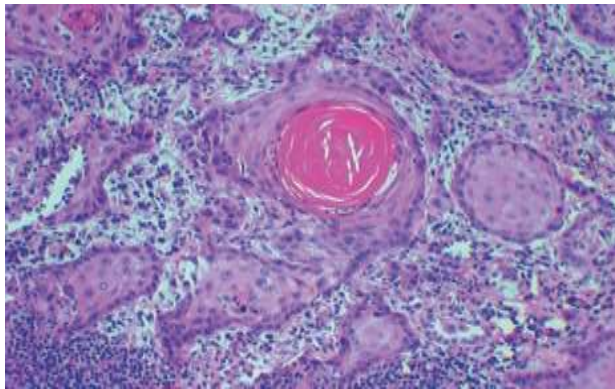
b) Justify your answer (10 marks)

Case 2

A 60-year-old man presents with a 4-month history of increasing weight loss, wheezing, and shortness of breath. He has smoked two packs of cigarettes a day for 40 years. His past medical history is significant for emphysema and chronic bronchitis. A chest X-ray shows a 10-cm mass in the left lung. Bronchoscopy discloses obstruction of the left main stem bronchus. A biopsy is obtained (shown in the image below).

a) Immunohistochemical studies of this biopsy specimen would most likely show strong expression of which of the following tumor markers?

- (A) Alpha-fetoprotein
- (B) Calretinin
- (C) Carcinoembryonic antigen
- (D) Cytokeratins
- (E) Synaptophysin **(10 marks)**



b) justified your answer (10 marks)

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Case3. The brain at autopsy is shown in the image below of 70 years old man who died of dementia .

a) This patient's brain exemplifies which of the following responses to chronic injury?



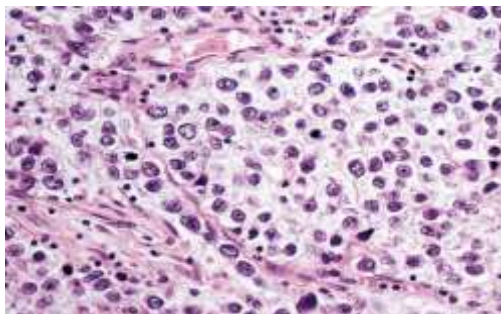
- (A) Anaplasia
- (B) Atrophy
- (C) Dysplasia
- (D) Hyperplasia
- (E) Hypertrophy (10 marks)

b) Justify your answer (10 marks)

Case 4 A 20-year-old woman presents with increasing abdominal girth of 3 months in duration. Physical examination reveals ascites. A pelvic examination discloses a right ovarian mass. A 7-cm ovarian mass is removed at surgery.

a) The histologic appearance of this ovarian neoplasm (shown in the image) most closely resembles which of the following malignant neoplasms seen in males?

- (A) Choriocarcinoma
- (B) Embryonal carcinoma
- (C) Immature teratoma
- (D) Seminoma
- (E) Sertoli cell tumor (10 marks)



b) Justify your answer (10marks)

END