



UNIVERSITY EXAMINATIONS

**THREE YEAR EXAMINATION FOR THE AWARD OF DEGREE OF
BACHELOR SCIENCE IN CLINICAL MEDICINE AND SURGERY
THIRD SEMESTER, 2023/2024
(AUGUST, 2024)**

PATH 400: PATHOLOGY

STREAM: Y3S3

TIME: 2 HOURS

DAY: THURSDAY, 3.00-5.00PM

DATE: 29/08/2024

INSTRUCTIONS

1. Do not write anything on this question paper.

SECTION A: MULTIPLE CHOICE QUESTIONS

Answer all the questions. Each question has one correct answer.

1. True of fibroadenoma
 - a. It's the most common benign tumour of the female breast
 - b. Rarely occurs before the age of 30 years
 - c. Rarely bilateral or multiple
 - d. Frequently metastasize
 - e. All of the above.
 - f. Are poorly circumscribed tumors
2. Characteristic features of rheumatic heart disease.
 - a. Mucosal nodules
 - b. Neurologic deficits of gait
 - c. Erythematous macular skin lesions
 - d. All of the above
 - e. None of the above
3. Chronic obstructive airway diseases include ALL EXCEPT:
 - a. Recurrent bronchitis

- b. Emphysema
 - c. Bronchiectasis
 - d. Bronchial asthma
 - e. Chronic bronchitis
4. Of infective endocarditis
- a. Ventricular septal defect is not a risk factor
 - b. Staphylococcus aureus is associated with acute infective endocarditis
 - c. Streptococcus viridans is associated with acute infective endocarditis
 - d. Vegetations rarely embolize
 - e. Antibody-mediated glomerulonephritis is a possible complication
5. Which of the following morphological features are in hypertensive vascular disease?
- a. Necrotizing arteriolitis
 - b. Hyperplastic arteriolosclerosis
 - c. Hyaline arteriosclerosis
 - d. Granulomatous inflammation
 - e. Nephrosclerosis
6. Fate of atheromatous plaques
- a. Hemorrhage into a plaque
 - b. Erosion
 - c. Atheroembolism.
 - d. All of the above.
 - e. None of the above.
7. The following defects are responsible for the acid reflux in patient with gastro- esophageal reflux disease
- a. Hiatus hernia
 - b. Gastric acid
 - c. Lower oesophageal sphincter weakness
 - d. Transient lower esophageal sphincter relaxation
 - e. All of the above
8. Risk factors for hepatocellular carcinoma include ALL EXCEPT
- a. Hepatitis C
 - b. Alcoholic liver disease
 - c. Hemochromatosis
 - d. Aflatoxin
 - e. Herpes simplex virus
9. Acute lung injury (ALI)
- a. Characterized by cardiogenic pulmonary oedema
 - b. Pancreatitis may be associated with ALI
 - c. Hyaline membranes are seen during the advanced stages

- d. Choice a and b are correct
 - e. All of the above
10. The following are NOT clinical manifestations of pituitary disease
- a. Hyperpituitarism
 - b. Hypopituitarism
 - c. Local mass effects
 - d. Visual disturbances
 - e. Pathological fractures.
11. True of atherosclerosis
- a. Atherosclerosis is characterized by serosal lesions
 - b. It is a leading cause of coronary artery disease
 - c. Hyperlipidaemia is a non- modifiable risk factor
 - d. Endothelial injury is not involved in atherogenesis
 - e. Neutrophils are the key inflammatory cells
12. The following are NOT associated with essential hypertension
- a. Single gene mutations
 - b. Increased renal sodium excretion
 - c. Obesity
 - d. Cigarette smoking
 - e. Chronic renal failure
13. The following statements are true of gastric carcinoma. Which one is NOT?
- a. Mucosal atrophy is a risk factor for gastric adenocarcinoma
 - b. Helicobacter pylori infection causes multiple gene mutations
 - c. The greater curvature of the stomach is more commonly involved
 - d. Signet-ring cells are seen in the intestinal type
 - e. Gastric tumors with an intestinal morphology tend not to form bulky tumors
14. The following are pre- renal causes of acute renal failure. Which one is NOT?
- a. Hypovolemia
 - b. Massive red blood haemolysis
 - c. Ureteric calculi
 - d. Toxins
 - e. Septicaemia
15. The following vasculitides are large vessel arteritis
- a. Wegener granulomatosis
 - b. Takayasu arteritis
 - c. Polyarteritis nodosa
 - d. Churg-strauss syndrome
 - e. Microscopic polyangitis

16. Gestational trophoblastic diseases include:
- Complete mole
 - Partial mole
 - Invasive mole
 - Choriocarcinoma
 - All the above
17. The following statements are true
- Acute mastitis is common during lactation
 - periductal mastitis is commonly associated with cigarette smoking
 - chronic granulomatous inflammation is not seen in mammary duct ectasia
 - lymphocytic mastopathy is seen in women with type diabetes mellitus
 - multinucleate giant cells are seen in fat necrosis
18. The following statements are true of pericarditis
- may occur secondary to metastatic neoplasms
 - is not associated with uremia
 - primary pericarditis is more common than secondary pericarditis
 - secondary pericarditis results from hematogenous spread of tuberculous bacilli
 - constrictive pericarditis does not results from purulent pericarditis
19. The following are aetiologies of liver disease. Which one is NOT?
- cytomegalovirus
 - hepatitis D virus
 - autoimmune disease
 - aspergillus
 - None of the above
20. True of aneurysms EXCEPT
- Generalized abnormal dilation of a blood vessel
 - Syphilis is a cause of aneurysm formation
 - The abdominal aorta is the second most commonly affected vessel
 - Mycotic aneurysms are caused by infections
 - Berry aneurysms typically occur in the cerebral vessels.
21. Which salivary gland is the most frequent site of tumor involvement?
- Parotid gland
 - Submaxillary gland
 - Sublingual gland
 - Minor salivary glands
 - Submandibular gland

22. A 42-years-old female presents with symptoms of hypothyroidism. Biopsy shows diffuse lymphoid infiltrate with germinal center formation. What is the diagnosis?

- A. Hashimoto's thyroiditis
- B. Graves' disease
- C. Subacute thyroiditis
- D. Papillary carcinoma of thyroid
- E. Follicular thyroid carcinoma

23. Which is a complication of long-standing GERD (gastroesophageal reflux disease) and is characterized by columnar metaplasia of the squamous epithelium that normally lines the esophagus?

- A. Barrett esophagus
- B. Leiomyoma
- C. Squamous papilloma
- D. Lipoma
- E. Adenocarcinoma

24. Which type of gastrointestinal disease is associated with pernicious anemia?

- A. Acute hemorrhagic gastritis
- B. Gastric cancer
- C. Gastroesophageal reflux disease
- D. Chronic atrophic gastritis
- E. Chronic peptic ulcer

25. Four cardinal manifestations—arthralgias, diarrhea, abdominal pain, and weight loss are found in which of the following medical condition?

- A. Abdominal angina
- B. Celiac disease (Sprue)
- C. Malabsorption
- D. Whipple disease
- E. Tropical sprue

26. Which of the following diseases is associated with *Helicobacter pylori* infection?

- A. Esophagitis
- B. Diverticulitis

- C. Inflammatory bowel disease
- D. Duodenal peptic ulcer
- E. Celiac disease

27. Which of the following disease is the most likely lifetime risk of colon cancer, if left untreated?

- A. Ulcerative colitis
- B. Familial juvenile polyposis
- C. Familial adenomatous polyposis
- D. Crohn disease
- E. Cowden disease

28. Gastrin-secreting tumors and elevated gastrin levels are characteristic findings of which of the following disease?

- A. Antral G cell hyperplasia
- B. Zollinger–Ellison syndrome
- C. Gastric antrum syndrome
- D. Retained antrum syndrome
- E. Menetrier disease

29. A 25-year-old man presents to a rheumatologist with complaints of joint pain involving the large joints of the legs. On questioning, the patient indicates that exacerbations in the joint pain are frequently accompanied by diarrhea. Which of the following gastrointestinal disease is most likely to be implicated as the cause of the patient's joint problems?

- A. Amoebic colitis
- B. Chronic appendicitis
- C. Diverticulosis
- D. Pseudomembranous colitis
- E. Ulcerative colitis

30. Which of the following drug causes hepatocellular necrosis with inflammation?

- A. Acetaminophen
- B. Diclofenac sodium
- C. Ibuprofen
- D. Acetylsalicylic acid
- E. Sucralfate

31. A 30-year-old woman presents with sudden onset of severe abdominal pain. She is using oral contraceptives regularly. Ultrasound of abdomen shows a small hepatic mass. What is the diagnosis?

- A. Focal nodular hyperplasia
- B. Hepatic adenoma
- C. Nodular regenerative hyperplasia

- D. Adenomatous hyperplasia
- E. Cavernous hemangioma

32. Which of the following is the most common benign liver tumor?

- A. Cavernous hemangioma
- B. Hepatoblastoma
- C. Choledochal cyst
- D. Hepatic adenomas
- E. Focal nodular hyperplasia

33. Hyperparathyroidism (e.g., hypercalcemia, constipation, kidney stones), pituitary tumors, and pancreatic endocrine tumors (e.g., gastrinoma) are seen in which of the following condition?

- A. Multiple endocrine neoplasia type 2A
- B. Multiple endocrine neoplasia type 2B
- C. Von Hippel Lindau
- D. Vipomas
- E. Multiple endocrine neoplasia type 1

34. Relatively reduced insulin secretion and peripheral insulin resistance are the pathogenesis of which of the following medical condition?

- A. Adult onset diabetes mellitus
- B. Diabetes insipidus
- C. Syndrome of inappropriate antidiuretic hormone
- D. Juvenile onset diabetes mellitus
- E. Zollinger–Ellison syndrome

35. Hyperglycemia, anion gap metabolic acidosis, increased blood ketone levels, leukocytosis are seen in which of the following disease?

- A. Diabetes insipidus
- B. Syndrome of inappropriate antidiuretic hormone
- C. Acute pancreatitis
- D. Lactic acidosis
- E. Diabetic ketoacidosis

36. Paraneoplastic syndromes of RCC such as polycythemia, hypertension, hyperparathyroidism are sometimes the earliest manifestation of renal cell carcinoma. What is the cause of polycythemia?

- A. Renin secretion
- B. Parathyroid-like substance
- C. Excess erythropoietin production
- D. Hypercalcemia
- E. Myeloproliferative disorders

37. Which of the following condition presents with characteristic triad of microangiopathic hemolytic anemia, thrombocytopenia, and acute kidney injury?

- A. Hemolytic uremic syndrome
- B. Systemic vasculitis
- C. Henoch–Schonlein purpura
- D. Thrombotic thrombocytopenic purpura
- E. Disseminated intravascular coagulation

38. Which of the following condition is a common cause of recurrent kidney stones, hypercalcemia, and hypophosphatemia?

- A. Hyperparathyroidism
- B. Hyperthyroidism
- C. Hypothyroidism
- D. Gout
- E. Vitamin D deficiency

39. A 4-year-old child presents as a large abdominal mass. What is the diagnosis?

- A. Renal cell carcinoma
- B. Wilms tumor
- C. Neuroblastoma
- D. Renal sarcomas
- E. Transitional cell carcinoma

40. What is the best definition of Balanitis?

- A. Inflammation of the glans penis
- B. Ulcer of the glans penis
- C. Infection of the glans penis
- D. Abnormality of the glans penis
- E. Abnormality in the curvature of the penis

41. A 19-year-old boy comes to the physician office with a swollen, red scrotum on the right side. There is pain and tenderness in the testicle. There is also painful urination along with urgency and frequency. What is the diagnosis?

- A. Epididymitis
- B. Testicular torsion
- C. Inguinal hernia
- D. Testicular cancer
- E. Testicular tumor

42. A 69-year-old male presents with obstructive urinary systems. Transurethral resection biopsy of the prostate is done. Microscopic findings show marked proliferation of round, smaller and crowded glands. What is the diagnosis?

- A. Benign prostatic hyperplasia (BPH)
- B. Prostatic adenocarcinoma
- C. Acute bacterial prostatitis and prostatic abscess
- D. Invasive squamous cell carcinoma
- E. Invasive urothelial carcinoma

43. Which one of the following is NOT used as a tumor marker in testicular tumors?

- A. Beta human chorionic gonadotropin (β -hCG)
- B. Carcinoembryonic antigen (CEA)
- C. Alpha-fetoprotein (AFP)
- D. Lactate dehydrogenase (LDH)
- E. Placental alkaline phosphatase (PLAP)

44. Which of the following is the most common ovarian cancer and shows psammoma bodies on microscopic examination?

- A. Granulosa cell tumor
- B. Serous cystadenocarcinoma
- C. Dysgerminoma
- D. Granulosa cell tumor
- E. Yolk sac tumor

45. Which of the following human papilloma virus (HPV) is NOT a high risk for cervical carcinoma?

- A. HPV 16
- B. HPV 18
- C. HPV 31
- D. HPV 33
- E. HPV 6

46. A 58-year-old markedly obese, single, diabetic nulliparous woman presents with vaginal bleeding. A pap smear is done which shows cells that are consistent with endometrial adenocarcinoma. Which of the following disease can progress to endometrial carcinoma?

- A. Adenomyosis
- B. Human papillomavirus infection
- C. Endometrial hyperplasia
- D. Leiomyoma
- E. Chronic endometritis

47. A 24-year-old woman finds a 2 cm mass in the upper outer quadrant of her left breast while taking a shower. She comes to family practice clinic for evaluation. Examination reveals that the mass is non tender, smooth, round, and freely mobile. What is the most likely diagnosis?

- A. Infiltrating ductal carcinoma

- B. Fibroadenoma
- C. Fibrocystic change
- D. Infiltrating ductal carcinoma, comedo type
- E. Lobular carcinoma in situ

48. Which is the best confirmatory diagnosis for Cushing disease?

- A. Adrenocorticotrophic hormone (ACTH) level
- B. Vitamin D and calcium level
- C. High dose dexamethasone suppression
- D. Metyrapone stimulation test
- E. Low dose dexamethasone suppression

49. A 40-year-old woman presents with round moon face dorsal buffalo hump, hypertension, and weight gain. There is also truncal obesity. What is the diagnosis?

- A. Sipple's syndrome
- B. Cushing's syndrome
- C. Addison disease
- D. Conn's syndrome
- E. Cushing disease

50. A 47-year-old male patient comes to the physician office with symptoms of high blood pressure. Laboratory investigations reveal hypokalemia, elevated aldosterone, and decreased renin. What is the diagnosis?

- A. Adrenal carcinoma
- B. Bartter syndrome
- C. Adrenogenital syndrome
- D. Conn's syndrome
- E. Iatrogenic Cushing syndrome

51. Which of the following presents in the form of septicemic shock with sudden vascular collapse, DIC, and adrenal hemorrhage?

- A. Waterhouse–Friderichsen syndrome
- B. Adrenal crisis
- C. Adrenal incidentaloma
- D. Pheochromocytoma
- E. Acute abdomen

52. What is the characteristic radiographic finding of Ewing sarcoma?

- A. Onion peel appearance
- B. Lytic lesions
- C. Sunburst appearance
- D. Moth eaten appearance
- E. Soap bubble appearance

53. A 30-year-old woman comes to the office with symptoms of right hip pain. She is a patient of sickle cell disease. Which of the following is the cause of patient's pain?

- A. Rheumatoid arthritis
- B. Osteoarthritis
- C. Osteoporosis
- D. Avascular necrosis
- E. Septic arthritis

54. Which type of cells is known to be involved in the initial presentation of antigen to T lymphocytes?

- a) Dendritic cells
- b) Plasma cells
- c) Erythrocytes
- d) Platelet
- e) None of the above

55. Helper CD4⁺ T lymphocytes recognize which one of the following types of molecules on dendritic cells?

- a) HLA class I antigen
- b) HLA class III antigen
- c) Processed peptides
- d) CD8 antigen
- e) CD 10 antigens

56. Type I hypersensitivity classically involves which one of the following?

- a) IgM
- b) IgD
- c) IgA
- d) IgE
- e) IgG

57. Which one of the following autoimmune diseases involves predominantly Type III hypersensitivity

- a) Hashimoto' thyroiditis
- b) Idiopathic thrombocytopenic purpura
- c) Multiple sclerosis
- d) Systemic lupus erythematosus
- e) All of the above.

58. The following are intracellular accumulations. Which one is NOT?

- a) Lipids
- b) Proteins
- c) Glycogen
- d) Pigments
- e) None of the above.

59. The following are triggers of acute inflammation EXCEPT;

- a) Infections
- b) Trauma
- c) Physical and chemical agents
- d) Psychologic stress.

60. Which one of the following is NOT a chemical mediator of inflammation?

- a) Histamine
- b) Serotonin
- c) Prostaglandins
- d) Complement factors
- a) Nor epinephrine.

SECTION B: ANSWER ALL THE QUESTIONS

QUESTION ONE

Describe the causes of apoptosis. (10 marks)

QUESTION TWO

Describe the role of chemical mediators in different reactions of inflammation. (10 marks)

QUESTION THREE

Enumerate the pathophysiologic categories of oedema. (10 marks)

QUESTION FOUR

Describe the risk factors for atherosclerosis. (10 marks)

QUESTION FIVE

Describe the factors that are associated with the development of squamous cell carcinoma of the oesophagus. (10 marks)

QUESTION SIX

Giving examples describe the causes of jaundice. (10 marks)

LONG ANSWER QUESTIONS (CHOOSE AND ANSWER ONLY TWO QUESTIONS)

QUESTION ONE

Discuss the etiology, clinical features and pathological features of acute .
(20 marks)

QUESTION TWO

Discuss the principal systemic manifestations of chronic renal failure and uremia.
(20marks)

QUESTION THREE

Discuss in detail the various breast pathologies.
(20 marks)