KISII UNIVERSITY

UNIVERSITY EXAMINATIONS

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

MEDS 321: PATHOLOGY PAPER 1

STREAM:Y3S3 **TIME: 2 HOURS**

DAY:MONDAY, 9.00AM-12.00PM **DATE: 05/08/2024**

INSTRUCTIONS

1.Do not write anything on this question paper.

MULTIPPLE CHOICE QUESTIONS

1.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

2. Which of the following disease is the most likely life- time risk of colon cancer, if left untreated?

A. Ulcerative colitis

B. Familial juvenile polyposis

C. Familial adenomatous polyposis

D. Crohn disease

E. Cowden disease

3. 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

4. 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

5. A 2-week-old infant with Down syndrome presents with distended abdomen and history of no stools. Bowel sounds are absent. Abdominal X-rays shows megacolon. A sigmoid colon biopsy shows lack of mural ganglion cells. What is the most likely diagnosis?

A. Congenital pyloric stenosis

B. Chagas disease

C. Hirschsprung's disease

D. Cystic fibrosis

E. Rectal atresia

6. Failure of the lower esophageal sphincter to relax with swallowing is called as:

A. Achalasia

B. Gastroesophageal reflux disease

C. Pseudoachalasia

D. Esophageal spasm

E. Jackhammer (nutcracker) esophagus

7. Which of the following is the most common type of thyroid carcinoma?

A. Follicular carcinoma of thyroid

B. Poorly differentiated carcinoma of thyroid

C. Anaplastic carcinoma of thyroid

D. Medullary carcinoma of thyroid

E. Papillary carcinoma of thyroid

8. MEN2A syndrome is associated with which of the following conditions?

A. Medullary thyroid cancer (MTC) and parathyroid tumors

B. Medullary thyroid cancer, pheochromocytoma, and primary hyperparathyroidism

C. Parathyroid tumors, and pheochromocytoma

D. Pheochromocytoma, and primary hyperparathyroidism

E. Medullary thyroid cancer and pheochromocytoma

9. A middle aged female comes to the physician office with features of palpitations, nervousness, diaphoresis, heat intolerance, weakness, tremors, diarrhea, weight loss despite a good appetite. Laboratory investigations show elevated free T4 and decreased TSH. What is the diagnosis?

A. Multinodular goiter

B. Hyperthyroidism

C. Hypothyroidism

D. Papillary thyroid carcinoma

E. Pheochromocytoma

10. Which of the following profile is associated with primary hyperparathyroidism?

A. Increased levels of ionized calcium and decreased levels of PTH

B. Decreased levels of ionized calcium and decreased levels of parathyroid stimulating hormone (PTH)

C. Increased levels of ionized calcium and increased levels of parathyroid stimulating hormone (PTH)

D. Decreased levels of ionized calcium and increased levels of PTH

E. Anyone of the above with primary hypocalcemia

11. 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

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

A. Adrenocorticotropic hormone (ACTH) level

B. Vitamin D and calcium level

C. High dose dexamethasone suppression

D. Metyrapone stimulation test

E. Low dose dexamethasone suppression

13. Laboratory findings of anemia, thrombocytopenia, and leukopenia are characteristic of which of the following type of anemia?

A. Megaloblastic anemia

B. Iron deficiency anemia

C. Aplastic anemia

D. Sickle cell anemia.

E. β Thalassemia

14. Macro-ovalocytes and hypersegmented neutrophils are seen in which of the following type of anemia?

A. Megaloblastic anemia.

B. Aplastic anemia

C. Iron deficiency anemia

D. Hereditary spherocytosis

E. Autoimmune hemolytic anemia

15. A 15-year-old male presents with fever, sore throat, and enlarged cervical lymph nodes. CBC shows total WBC of 22,000. Peripheral blood smear shows atypical lymphocytes. Monospot test is positive. What is the diagnosis?

A. Infectious mononucleosis

B. Acute mumps

C. Diphtheria

D. Scarlet fever

E. Toxoplasmosis

16. Which of the following findings will be found in iron deficiency anemia?

A. Decreased MCV, increased RDW

B. Increased MCV, increased RDW

C. Normal MCV, Increased RDW

D. Decreased MCV, decreased RDW

E. Normal MCV, normal RDW

17. Reticulocytes are stained by:

A. Wright stain

B. Brilliant cresyl blue

C. Alcian blue

D. Giemsa stain

E. Trichrome stain

18. Cabot's ring in RBCs is seen in:

A. Acquired hemolytic anemia

B. Hemochromatosis

C. Thalassemia

D. After splenectomy

E. Iron deficiency anemia

19. Deficiency of which of the following causes hereditaryspherocytosis?

A. Actin

B. Glycoprotein

C. Ankyrin

D. Band 4

E. G-6PD deficiency

20. Tophus is the pathognomonic lesion of which of the following conditions?

A. Multiple myeloma

B. Cystinosis

C. Gout

D. Eale's disease

E. Rheumatoid arthritis

21. 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

22. A 18-year-old male teenager comes to the physician office with clinical features of localized pain and swelling around the knee. X-ray findings show Codman's triangle (periosteal elevation), sunburst pattern, and bone destruction. What is the diagnosis?

A. Ewing sarcoma

B. Giant cell tumor of bone

C. Osteosarcoma

D. Osteoblastoma

E. Rhabdomyosarcoma

23. 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

24.What is the most common cause of nephrotic syndrome in adults?

A. Focal segmental glomerulosclerosis

B. Acute pyelonephritis

C. Minimal change disease

D. Chronic glomerulonephritis

E. Membranous glomerulonephritis

25. 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

26. The distinction between phyllodes tumor and fibroadenoma is based on?

A. Proliferating epithelial elements

B. Tumor size

C. Age of the patient

D. Stromal cellularity

E. Mucinous change

27. Which of the following breast pathology has 4–5 times increased risk of breast cancer?

A. Apocrine metaplasia

B. Sclerosing adenosis

C. Usual ductal hyperplasia

D. Intraductal papilloma

E. Atypical ductal hyperplasia

28. Which of the following is NOT a risk factor for breast cancer?

A. Age

B. Age at menarche

C. Overweight

D. Race

E. Second degree relatives with breast cancer

29. 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 nontender, 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

30. A 54-year-old female presents with breast lump. Excisional biopsy is done which shows tumor cells in single lines (Indian filing). What is the diagnosis?

A. Infiltrating ductal carcinoma of the breast

B. Infiltrating lobular carcinoma of the breast

C. Ductal carcinoma in situ

D. Inflammatory carcinoma of the breast

E. Tubular carcinoma

31. Which of the following virus that replicates only in HBV-infected cells?

A. Hepatitis A

B. Hepatitis C

C. Hepatitis D (Delta agent)

D. Hepatitis E

E. Epstein-Barr

32. What is the characteristic diagnostic histological feature of rheumatic heart disease?

A. Aschoff body

B. Bread butter pericarditis

C. Eosinophilic infiltration

D. Patchy infarction

E. Deep granuloma annulare

33. Which of the following serum marker is used to diag-

nose myocardial infarction in 3–6 h?

A. CK-MB

B. LDH

C. Alanine aminotransferase (ALT)

D. Troponin I & T

E. Aspartate aminotransferase (AST)

34. What is the characteristic feature of rheumatic carditis?

A. Pericarditis

B. Endocarditis

C. Myocarditis

D. Pancarditis

E. Reflux carditis

35. Diabetic ketoacidosis is most likely to occur in :

A. Type I Diabetes Mellitus

B. Type II Diabetes Mellitus

C. Cushing's syndrome

D. Gestional Diabetes Mellitus

E. Hypothyroidism

36. True of anaemia:-

A. Blood of transfusion is always indicated

B. Always respond to haematinic supplement therapy

C. The reticulocyte count is always low

D. Laboratory evaluation involves morphologic typing and investigation for cause

E. The bone marrow is usually hypoplastic

37. The following is an initial step in the laboratory investigation of anaemia

A. Bone marrow aspiration cytology

B. Serum iron level estimation

C. Haemoglobin electrophoresis

D. Determination of erythropoietin levels

E. Determination of red cell count and indices

38. Osmotic fragility is an evaluation of the:

A. Membrane

B. Enzyme

C. Haemaglobin

D. Cytoplasm

E. Antigen

39. Eosinophilia may be found in the following Except:

A. Allergic diseases

B. Acute infections

C. Parasitic infections

D. Chronic granulocytic

E. Tropical infections

40. Which of the following would be least affected by long periods of fat malabsorption ?

A. Vitamin A

B. Vitamin C

C. Vitamin E

D. Vitamin D

E. Vitamin K

41. Hyperkalemia may be seen in the following Except:-

A. Status epilepticus

B. Alkalosis

C. Crush muscle injuries

D. Hypoaldosteronism

E. Acute renal failure

42. Which of the following is the most common constituent of urinary calculi

A. Cystine

B. Uric acid

C. Calcium oxalate

D. Calcium phosphate

E. Magnesium ammonium phosphate

43. The following conditions favour formation of urinary calculi Except:

A. Urinary tract obstruction

B. Overhydration

C. Hypercalcemia

D. Hyperoxaluria

E. Urinary tract infection

44. Oedema in nephrotic syndrome is usually due to:-

A. Hypercholesterolemia

B. Oliguria

C. Hypoalbuminemia

D. Increased fluid intake

E. Hyponatremia

45. A 20 year old patient presentred with polydipsia, polyuria and weight loss. The likely diagnosis is :-

A. Diabetes Insipdus

B. Type 1 Diabetes Mellitus

C. HIV infection

D. Type II diabetes mellitus

E. None of the above

46. OGTT was done in a patient and growth hormone levels are also measured. The levels of growth hormone remained very high. The likely diagnosis is:-

A. Cushing's syndrome

B. Pheochromocytoma

C. Acromegaly

D. Thyrotoxicosis

E. Diabetes Mellitus

47. A useful tumour marker in assessment of choriocarcinoma is

A. CEA

B. AFP

C. Beta- HCG

D. Calcitonin

E. Squamous cell carcinoma antigen

48. The Ghon complex is associated with all Except:-

A. Hilar lymph node caseous necrosis

B. Subpleural caseating granuloma

C. Pulmonary apical cavity

D. Primary Tuberculosis

E. Presence of acid fast bacilli

49. A haemolytic crisis in G6PD deficiency may be triggered by all Except:-

A. 8 aminoquinolones

B. Infections

C. Fava beans

D. Cold weather

E. Sulphonamides

50. Which of the following is associated with hepatitis C?

A. DNA virus

B. Usually acquired through feacal oral route

C. Commonly followed by full recovery

D. Most common cause of post transfusion hepatitis

E. Requires the presence of hepatitis B surface antigen

51. A leucoerythroblastic blood film may result from

A. Severe infection
B. Bone marrow infiltration
C. Hemorrhagic shock
D. Aplastic anaemia
E. Idiopathic Myelofibrosis

52. Eosinophilia can be a feature of
A. Cushing's syndrome
B. T-cell lymphoma
C. Hodgkin's disease
D. Acute stress
E. Hookworm infection

53. The translocation t (9;22) is recognized in association with a significant proportion of cases of
A. Acute lymphoblastic leukaemia
B. Acute myeloid leukaemia
C. Myelodysplastic syndromes
D. Chronic myelomonocytic leukaemia
E. Chronic neutrophilic leukaemia

54. A myeloid Leukemoid reaction in children can result from infection by
A. Human immunodeficiency virus (HIV)
B. Epstein–Barr virus (EBV)

C. Cytomegalovirus (CMV)
D. Human herpesvirus 6 (HHV6)
E. Human T-cell lymphotrophic virus (HTLV-I or II)

55.Which one of the following is not a major change that makes a red cell to be susceptible to destruction?
A. Increased ATP
B. Increased Calcium have been implicated in the aging process
C. Decreased ATP
D. Loss of lipids,
E. Surface area decreases

56.Which of the following doesn't describe features of a mature red blood cell in circulation?
A. The mature erythrocyte is approximately 7-8 μm in diameter
B. The cytoplasm still contains RNA which produces varying amount of polychromasia
C. Has a central pale with the reddish pink cytoplasm
D. Thickness is approximately 1.7-2.4 μm
E. Mean cell volume is 80-100fl

57.The variation in red blood cell size is termed as;
A. Anisocytosis
B. Poikilocytosis
C. Elliptocytosis
D. Ovalocytosis
E. Spherocytosis

58.Depiction of red blood cell morphologies that may appear on a peripheral smear, shows:
A. Basophilic stippling,
B. Howell-Jolly bodies,
C. Cabot's ring bodies and
D. Heinz's bodies.
E. Sickle cell

59.Monocytosis can be observed in:
A. Tuberculosis
B. Malignancy
C. Chronic myelomonocytic leukemia
D. Viral infections
E. All of the above

60.Abnormal hemoglobin is most often caused by
A. Amino acid substitutions
B. Amino acid deletion
C. Globin chain elongation
D. Globin chain fusion
E. Hemolysis of red blood cell

61.The five types of white blood cells found in normal peripheral blood are:
A. Lymphocytes, monocytes, neutrophils, basophils, and lymphoblast
B. Lymphocytes, neutrophils, monocytes, myoblasts, and eosinophils
C. Lymphocytes, neutrophils, monocytes, eosinophils and basophils
D. Lymphoblast, neutrophils, monocytes, eosinophils and basophils

E. Basophils, eosinophils monoblasts leukoblasts neutrophils
62. Which of the following is not a feature of Hereditary spherocytosis?
A. Anaemia
B. Jaundice
C. Splenomegaly
D. Gilbert's disease
E. Graves' disease
63. Elevation of the total white cell count above 12 x 10^9/L is termed as:
A. Relative lymphocytosis
B. Absolute lymphocytes
C. Leukocytosis
D. Relative neutrophilic
E. Hematopoiesis
64. In G6PD deficiency diagnosis is established by estimation of the enzyme:
A. In between attacks (6 weeks after the attack)
B. During the attack
C. Immediately after the attack
D. At any time irrespective of the attack
E. After ingestion of fava beans
65. Spherocytosis are NOT found in one of the following condition
A. Congenital spherocytosis
B. Autoimmune hemolytic anemia
C. Hemolytic disease of the newborn
D. Blood transfusion
E. Iron deficiency anemia
66. Polychromasia is a correspond to increased:
A. Red cells
B. Reticulocytes
C. Ovalocytosis
D. Spherocytosis
E. Elliptocytosis
67. Leukemia is a malignant proliferation of hematopoietic cells in the:
A. Bone marrow then infiltrate peripheral blood and lymph nodes
B. Lymph nodes then infiltrate peripheral blood and bone marrow
C. Peripheral blood then infiltrates bone marrow and lymph nodes
D. Bone marrow and doesn't infiltrate lymph nodes
E. Lymph nodes and doesn't infiltrate bone marrow or peripheral blood.
68. FAB classification classifies acute leukemia according to:
A. Cytogenetic abnormalities
B. Immunological characteristics
C. Both cytogenetic and immunological abnormalities
D. Morphological characteristics
E. Morphological, phenotypic and cytogenetic characteristics
69. Sickle cell disease is characterized by all of the following except:
A. Results from a genetic abnormality in Hb structure
B. Marked normocytic normochromic anemia
C. Hb electrophoresis shows SS pattern
D. Hb electrophoresis shows AS pattern

E. Sickle cells in the stained film

70. In pyruvate kinase enzyme deficiency all of the following are true except:

A. It is inherited as an autosomal recessive trait
B. RBC morphology is normal
C. Diagnosis is established by enzyme essay
D. Resulting anemia is normochromic normocytic
E. Resulting anemia is macrocytic

71. Humoral immunity is a type of adaptive immunity that results in the circulation of which of the following throughout the blood?

a. Antigens
b. Macrophages
c. Natural killer cells
d. Antibodies
e. All of the above

72. Artificially acquired passive immunity refers to immunity from,

a. Recognition of an antigen by B cells
b. Injection of antigen in a vaccination
c. IV injection of immunoglobulins
d. Recognition of an antigen by T cells
e. Recognition of the antigens in body fluids

73. Natural killer cells are found in all of the following except:

a. Blood
b. Thymus
c. Spleen
d. Lymph nodes
e. Skin

74. In the developing fetus, prenatal hematopoiesis (the differentiation and development of immune cells) is not generally known to occur in which of the following organs?

a. Liver
b. Spleen
c. Lymph nodes
d. Appendix
e. Bone marrow

75. Recognition of self and non-self by the adaptive immune system in humans is accomplished in which of the following ways?

a. Exposure of T cells to the body's own antigens in the thymus
b. Exposure of B cells to the body's own antigens in the thymus
c. Exposure of B cells to the body's own antigens in the bursa of Fabricius
d. Exposure of T cells to the body's own antigens in the bursa of Fabricius
e. None of the above.

76.Regarding cytokines
a. They are specific for one cell type
b. They are often redundant
c. Their main role is in innate immunity
d. They act exclusively as stimulators for immune responses
e. They are non-specific

77.Myelogenous leukemias are caused by the cancerous production of innate (non-specific) immune system cells: in which tissue is such production most likely to occur?
a. Bone marrow
b. Thymus
c. Spleen
d. Lymph nodes
e. Liver

78.Which of the following cell types of the innate system does not perform phagocytosis?
a. Neutrophils
b. Basophils
c. Macrophages
d. Eosinophils
e. Lymphocytosis

79.The presence of IgM indicates
a. Activated B cells
b. A recent exposure has taken place
c. An allergic reaction is present
d. A reaction between mother and foetus across the placenta
e. Activated T cells

80.What is the normal immunological role of the CD8+ve T-cell?
a. Helps B-lymphocytes to develop into plasma cells.
b. Kills virus infected cells.
c. Secretes antibodies.
d. Rejects transplanted tissue.
e. Secrete antibodies

81.The two identical light chains of an antibody belong to
a. Kappa only
b. Lambda only
c. Either lambda or kappa
d. None of these
e. All of the above.

82.B and T cells are produced by stem cells that are formed in:
a. Bone marrow
b. The liver
c. The spleen
d. The lymph nodes
e. Short bones

83.Immunoglobulin classes must be distinguished by the type of:

a. light chains they possess.
b. carbohydrate on their light chains.
c. constant regions in their light chains.
d. heavy chains they possess
e. Globulins they possess

84.Innate host defense mechanisms are critical to the protection of the body because:
a. They utilize pre-committed antigen presenting cells that have already been induced
b. The antibodies derived from the innate response are critical to neutralize bacterial toxins.
c. They are highly specific for the invading pathogens that avoid PAMP receptor recognition.
d. They provide immediate, continuous protection in absence of a specific immune response.
e. They provide longterm protection in the absence of a specific immune response

85.Which of the following is NOT a characteristic of the innate immune system?
a. It acts immediately or within hours of appropriate stimulus.
b. It involves granulocytes.
c. Its response is enhanced on repeated exposure to pathogen
d. Effects are felt days to months later
e. It involves one type of large, granular lymphocytes

86.Which one of the following statements concerning leukocytes is correct?
a. All phagocytes are granulocytes.
b. No cells of the innate immune system are lymphocytes
c. Eosinophils are reactive against invasive helminthic infections
d. Neutrophils have a longer lifespan than macrophages
e. Excludes macrophages

87.Immunologic memory is provided by
a. B cells
b. T cells
c. both a and b
d. phagocytes
e. Macrophages

88.The single best definition of the most common form of antigen recognized by the T-cell receptor (TCR) is that it is:

a. Native protein
b. Cleaved
c. Short peptide
d. Linear
e. Non-cleaved protein

89.Which one of the following does NOT contain C3b?
a. Classic-pathway C5 convertase
b. Alternative-pathway C5 convertase
c. Classic-pathway C3 convertase
d. Alternative-pathway C3 convertase
e. Coagulative pathway

90.Which of the following is not true about helper T cells?
a. They function in cell mediated and humoral responses
b. They are activated by polysaccharide fragments
c. They bear surface CD4 molecules
d. They are subject to infection by HIV
e. They transform to B cells.

91. Hyperglycemia can cause all of the following Except

A. Decreased vitamin D absorption

B.Muscle weakness

C. Heart arrthymias

D.Neuromuscular symptoms

E. Gastrointestinal symptoms

92.. Tetany is caused primarily by

A. Hypokalemia
B. Hyperkalemia
C. Hypercalcemia
D. Hypocalcemia
E. Hyponatremia

93. . The 'MM' fraction of CK is most abundant in

A. Skeletal muscle
B. Cardiac muscle
C. Brain tissue
D. Bone tissue
E. Thyroid tissue

94. What is the enzyme more specific for acute pancreatitis

A. AST

B. Amylase

C. GGT

D. Lipase

E. Insulin

95. In diabetic patients, this provides information about the average blood glucose concentration during the preceding 6-8 weeks

A. HbA1C

B.HbB

C.HbF

D. HbS

E. Random blood sugars

96. The determination of glucose tolerance following the oral administration of glucose is recommended as a screening test for the presence of underlying gestational diabetes mellitus. How much grams of glucose is recommended in this tolerance test?

A. 50 grams

B. 75 grams

C. 100 grams

D. 120 grams

E. 200 grams

97. Hyperglycemia is caused by

A. Dehydration syndromes

B. Liver disease

C. Burns

D. Gastroenteropathy

E. Insulinoma

98. Which of the following diseases may cause hypocalcemia

A. Pseudohypoparathyroidism

B. Multiple sclerosis

C. Sarcoidosis

D. Primary hyperparathyroidism

E. Hypothyroidism

99. Which of the following tissues is important in vitamin D metabolism

A. Skin

B. Spleen

C. Pancrease

D. Thyroid

E. Lungs

100. Which of the following functions as a transport protein for bilirubin in the blood?

A. Albumin

B. Alpha-globulin

C. Beta-globulin

D. Gamma-globulin

E. CK-MB