Tania (1)
8

UNIVERSITY OF NAIROBI
DEPARTMENT OF HUMAN PATHOLOGY

MBChB III AND BDS III 2014/2015

MCQ CAT

DATE: TIME:

INSTRUCTIONS

1. **READING TIME**: There will be **5** minutes reading time. During this time you read the question, but will not be permitted to start writing.
2. Answer **ALL** the questions as directed.
3. Distribution of marks is indicated in each question.
4. Use a separate booklet for each complete question.
5. Write legibly.
6. Write your registration number on each booklet used.

1. Pain in acute inflammation is mediated by?
   a. Oxygen radicals.
   b. leukotriens.
   c. Prostaglandins.
   d. Bradykinin. } vasodilation
   e. Histamine }

2. The most characteristic feature of granulomatous inflammation is.
   a. Necrosis.
   b. Eosinophils.
   c. Langhan's giant cells. - TB
   d. Aggregation of epitheloid macrophages.
   e. Multinucleated giant cells.

3. Rapidly regenerating cells are:-
   a. Neurons.
   b. Hepatocyte. - Stable
   c. Labile cells.
   d. Stable cells.
   e. Permanent cells.

4. Factors that may result in poor wound healing include all of the following EXCEPT:
   a. Mobility of site.
   b. Over nutrition. poor nutrition
   c. Poor blood supply.
   d. Presence of foreign bodies.
   e. Bacterial infection.

5. Gangrene is necrosis plus:
   a. Infection.
   b. Dessication.
   c. Putrefaction.
   d. Involvement of a limb.
   e. Involvement of skin.

6. Liquitactive necrotic area following thrombotic infarction is characteristic in:-
   a. Spleen.
   b. Liver.
   c. Heart.
   d. Brain.
   e. Kidney.

7. A cancer associated with abnormal DNA repair gene:-
   a. Burkitt lymphoma.
   b. Malignant peripheral nerve.
   c. Wilms tumour
   d. Squamous cell carcinoma in xenoderma pigmentosa
   e. Squamous cell carcinoma following burns.

8. A tumour gene with point mutation
   a. P 53 gene – deletion
   b. RAS gene
   c. C – MYC gene
   d. Philadelphia chromosome
   e. C - ABL

TP53- most commonly affected.

9. Breast carcinoma may be associated will the following tumour genes **EXCEPT:-**
   a. BRCA1.
   b. BRCA 2.
   c. ERB 1. → SCC
   d. HER 2. / ERbB-2
   e. RB gene.

BUT ERB2 is present

10. Tumours with local infiltration and remote possibility of spreading are:-
   a. Carcinomas in situ
   b. Borderline malignancy.
   c Stage III malignancy
   d. Sarcomas only.
   e. Carcinoma only.

does not cross BM

11. An adult female in the reproductive age group with uterine wall masses is likely to be having:-
   a. Endometrial sarcoma
   b. Leiomyomas.
   c. Leiomyosarcomas.
   d. Carcinosarcomas.
   e. Rhabdomyosarcoma.

Benign

12. A pleomorphic tumour forming chondroid matrix is likely:-
   a. Osteosarcoma
   b. Rhabdomyosarcoma.
   c. Chrondrosarcoma.
   d. Chondroma.
   e. Osteoma.

mesenchymal.

13. Not true for cancer of the lung
   a. Global incidence is steadily declining
   b. Most common cancer associated with cigarette smoking
   c. Surgical rsection of tumour has improved survival
   d. Screening should be confined to high risk individuals.
   e. Available & not very sensitive for small cell carcinoma.

14. In screening for urinary bladder cancer in Kenya:-
   a. Urine cytology combined with cystoscopy has a diagnostic value of > 80%
   b. Only populations living in areas endemic for S. Haematobium should be screened
   c. Instrumentation is not a source of error
   d. Crabbe in the UK was the first to introduce molecular screening.
   e. All men in industrial cities such as Thika should be screened.

15. Not true for stomach cancer
    a. Gastric lavage cytology has a high sensitivity
    b. Endoscopy has not had an impact on cytologic screening
    c. Japan has the highest incidence in the world
    d. It is one of the ten most common cancers in Kenya
    e. Persistant infection with H. pylori increases the risk

16. Not true for Esophageal cancer:-
    a. Nitrosamine components play a role in etiology
    b. One of the commonest cancers in N. America
    c. One of the most common cancers in Kenya
    d. Balloon sampling technique for cytology of esophageal lesions was developed by Chinese
    e. Cytologic sampling techniques have an accuracy of 95%

17. The least important factor in cancer cachexia is.
    a. Anorexia.
    b. Nausea.
    c. Malapsortion.
    d. Metabolic demands of tumour.
    e. Immune system and gastrointestinal tract dysfunction.

18. Not classified a pain-natal infection:-
    a. HIV.
    b. Treponema pallidum.
    c. B-Haemolytic streptococcal infection.
    d. Cytomegalovirus
    e. S. haematobium.

19. A 16 year male experiences sudden, severe scrotal pain one right which continues unabated. The excised testis is likely to show findings constent with:-
    a. Local invasion by testicular tumour
    b. Parasitic infestation of the scrotum and testis.
    c. Lymphodema.
    d. Haemorrlagic infarction.
    e. Disseminated tuberculosis from lungs to testis.

20. A 35 year male is known to be infected with HIV for the past 10 years. He presents with multiple irregular mildly raised painless hyperpigmented lesions on the arms and legs which agent is likely to have had a role in development of these lesions?
    a. Adenovirus.
    b. Eptein B virus.
    c. Human Herpes Simplex virus 8.
    d. Hepatitis B Virus.
    e. HTLV - 1.

21. Most successful cancer screening test of all time to date is:-
    a. Sputum cytology
    b. Urine dip-stick.

21. Most successful cancer screening test of all time to date is:-
    a. Sputum cytology
    b. Urine dip-stick.
    c. Pap smear
    d. PSA.
    e. Mammogram

22. A 38 year male with low back pain has a CT scan showing a psoas abscess. Most probable inf cause is:-
    a. Streptococcus pyogenes.
    b. Cyptococcus neoformans.
    c. Treponema pallidum.
    d. Mycobacterium tuberculosis.
    e. Barrelia burgdoferi.

23. Prognostic factors in breast cancer include:-
    a. Tumour grade.
    b. Histologic types.
    c. Pectoral muscle invasion.
    d. Chronic dysmenorrhoea.
    e. Perii-capsular axillary nodal disease.

24. Not an autosomal dominant disorder
    a. Polycystic disease of the kidney.
    b. Marian's Syndrome. marfans
    c. Von Willebrand's disease.
    d. Sickle cell Anaemia. → recessive
    e. Familial polyposis coli.

25. HIV virus has a predilection for all **except**.
    a. CD_4 lymphocyte
    b. Marophages.
    c. Microglial cells
    d. Dendritic cells.
    e. Oligodendrocytes

26. The HIV antigens complex through which HIV virus infects the cells is.
    a. GP41/GP120.
    b. GP120/CP46.
    c. GP120/GP40.
    d. GP41/CD4.
    e. CD4/GP120.

27. The cellular membrane complex through which the virus infects these cellsis
    a. CCR5/CD4.
    b. CD4/CD8.

c. CD4/CD10.
d. CCR5/CD8.
e. CCD5/CD10.

28. The viral enzyme that supports inclusion of viral genetic component into host DNA is:-
a. Reverse transiptase.
b. Integrase
c. Protease.
d. Lipase.
e. Collagenase.

29. Fungal infection commonly associated with CNS infection in AIDS patient
a. Premocystic jiroveci
b. Cryposporidiosis
c. Crypotococcosis.
d. Aspergillosis.
e. Histoplasmosis.

30. Parasistic CNS infection common in HIV/AIDS:-
a. Toxoplasma Gondii .
b. Plasmodium Malaria.
c. Plasmodium Falciparum.
d. Plasmodium Ovale.
e. Nigleria Fowlerii.

31. Buccal mucosal infection associated with stage IV of HIV/AIDS.
a. Candida albicans.
b. Cryptococcus Neoformans.
c. Pneumocystic jiroveci.
d. Aspergillus species
e. Microsporidia species.

32. A virus associated with co-infection in HIV/AIDS and driving carcinogenesis:-
a. Human Herpes virus type 8.
b. Hepatitis B Virus.
c. Hepatitis C Virus.
d. Hepatitis A Virus.
e. HTLV 1 Virus.

33. The most lethal range of UV - rays.
a. UVA 320-400
b. UVB 280-320.
c. UVC 200-280
d. UVD 400-435.
e. UVE 450-500

34. Apoptosis is commonly seen in all **except.**
a. Anoxia

b. Radiation of injury to tissue.
c. Exposure to chemical carcinogenes
d. Cell mutation.
e. Lymphoid Hyperplasia.

42. True about apoptosis

a) Characterized by nuclear dissolution → fragmentation
b) There is loss of membrane integrity → necrosis
c) Occurs in acute inflammation
d) Occurs in glanulmmatous inflammation
e) Associated with pathologic cell injury

43. Main morphologic correlate of reversible cell injury

a) Cellular swelling
b) Nuclear shrinkage
c) Breakdown of plasma membrane
d) Myelin Figures
e) Nuclear fragmentation

44. Coagulate necrosis occur in all the following organs EXCEPT

a) Heart
b) Spleen
c) Liver
d) Brain — liquefactive
e) Kidney

45. Causes of steatosis EXCEPT

a) Protein malnutrition
b) Diabetes Mellitus
c) Anoxia
d) Obesity
e) Hepatitis A

46. Pathologic process in which phagocytic cells are overloaded with lipid

a) Nephrotic syndrome
b) Russel bodies → Igs
c) Xamthomas
d) Alzeimas disease → neurofibrilly tangle
e) Alcoholic heparin

47. In anthracosis there is accumulation of .....in the pulmonary parenchyma

a) Lipofuscin
b) Carbon
c) Melanin
d) Derivatives of haemoglobin

e) Glyycogen

48. True about calcium salts deposition in normal tissues

a) Reffered to O_2 Dystrophic calcification

b) There is always hypercalcaemia

c) Always reflects some derangement in calcium metabolism

d) Occurs in normal tissues

e) Refered to O_2 metastatic calcification

49. Chronic inflammation is characterized by all the following EXCEPT

a) Infiltration by neutrophil polymorphs

b) Tissue destruction

c) Angiogenesis

d) Fibrosis

50. Causes of granulomatousinflammation EXCEPT

a) Cat-Scratch disease

b) Sacroidosis

c) Malaria

d) Brucellosis

e) Mycotic infections

51. True regarding metastatic disease

a) Unequivocally prove malignancy

b) It is the most common presentation of melanoma

c) Its proven by lymph node adjacent to a tumour

d) Of bbreast, it is usually to supraclavicular nodes

e) Can be present in early disease

52. N1 in the TNM system indicates

a) Absence of nodal metastasis

b) Metastasis to one lymph nodes

c) Metastasis to mobile regional lymph nodes

d) Metastasis to malted regional lymph nodes

e) Metastasis to distant lymph nodes

53. Endocarditis in intravenous drug users typically

a) Involves the mitral valve

b) Is caused by Candida Albicans

c) Does not cause fever

d) Has a better prognosis than other types of endocarditis

e) Is caused by staphylococcus aurors

54. True regarding infective endocarditis

a) Aortic and Tricuspid valves are moved in 80-90%

b) Involves abnormal valves in most acute cases

c) Is confirmed by positive bloodcultures in less than 50% of cases

d) Major cause of acute endocarditis is streptococcus viridans

e) Normal hearts are mainly affected in subacute infective endocarditis

55. Acute infective endocarditis

a) Has a less than 20% mortality
b) 30% is caused by bacteria
c) Is caused by virulent microorganisms
d) Commonly seen in immunosuppression
e) The bulk (70%) are caused by fungi

56. The pathognomonic histological feature of rheumatic carditis

a) Aschoff nodules (bodies)
b) Mocallum plaques – subendocardial tissue.
c) Suppurative pericarditis
d) Rheumatoid granulomas
e) Janeway lesions

57. Features of Rheumatic fever EXCEPT

a) Carditis ✓
b) Subcutaneous nodules
c) Erythema Nodusum – marginatum
d) Hantingtons Chorea – Sydenhams
e) ASchoff bodies in the heart

58. An infant presents with Jaundice. He also has dark urine and pale stools. The most likely cause is

a) Physiological jaundice of the newborn
b) Breast milk jaundice
c) Biliary atresia
d) Gilberts syndrome – lack of bilirubin conjugation.
e) Sickle cell disease

59. Albinism is a congenital disorder of hypopigmentation. The deficient enzyme is

a) Xanthine oxidase
b) Tyrosine oxidase
c) Glucose dehydrogenase phosphate
d) Lactate dehydrogenase
e) Gluconic synthetase

60. Special stain that demonstrates iron in tissues

a) Mason trichrome
b) Periodic Acid Schiff
c) Perls prusian blue
d) Hematoxylin and Eosin
e) Giemsa stains

a. Fibronectin. BM - W + Laminin
b. Fibrin.
c. Hyaluronarte.
d. Elastin
e. Laminin

62. Correctly matched cardinal sign of inflammation.
a. Functio laesa - swelling.
b. Calor - heat.
c. Rubor – Pain
d. Tumour - Malignancy. → swelling
e. Dolor - Redness. Pain

63. In acute inflammation immediate transient increased vascular permability (15-30 minutes) involves
a. Venules of 20-60 µm diameter
b. Venules and capillaries
c. Capillaries only.
d. Arterioles
e. Arterioles and capillaries

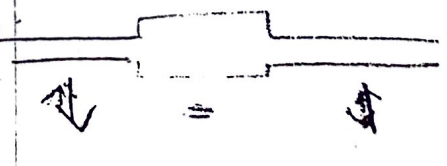
64. Which leukocytes are found on site of acute viral infections:-
a. Plasma cells.
b. Neutrophils.
c. Monocytes.
d. Lymphocytes. - viral
e. Eosinophils.

65. Not a morphologic pattern of acute inflammation:-
a. Ulcers.
b. Fibrinous.
c. Granulomatous.
d. Serous.
e. Suppurative.

serous cut

66. True of fibrinous inflammation:-
a. Involves solid organs like kidney
b. May result in organization and scar formation → if fibrin not removed
c. Also referred to as purulent.
d. Rare in body cavities like pleura. → common
e. Eosinophil is the main mediating cell.

67. In normal fluid homeostasis
a. There is a net inflow at the arteriolar end. > more
b. There I s a net outflow from capillaries into interstitium. - none
c. There is a net outflow at the venular end. <
d. There is a net outflow from lymphatics.
e. There is no net increase in interstitial fluid volume.



68. Causes of reduced oncatic pressure **except**
a. Nephrotic syndrome
b. Deep venos thrombosis
c. Liver cirrhosis
d. Protein loosing enteropathy
e. Malnutrition

69. Consequences of tissue oedema **except**
a. Impaired wound healing
b. Impaired gaseous echange
c. Protection against infection
d. Can lead to brain herniation
e. Tissue ischernia

70. Body cavity effusions **do not** arise from
a. Obesity
b. Left heart failure
c. Liver cirrhosis
d. Renal failure
e. Pneumonia

REG. NUMBER: H31/34504/2013

UNIVERSITY OF NAIROBI

UNIVERSITY EXAMINATIONS – 2014/2015

LEVEL III EXAMINATIONS FOR THE DEGREES OF BACHELOR OF MEDICINE AND BACHELOR OF SURGERY (6 YEAR PROGRAM)

IHH 300 : GENERAL PATHOLOGY

SAQ/MCQ PAPER

DATE: TUESDAY 19TH MAY, 2015 TIME: 9.00 A.M. – 12.00 NOON

INSTRUCTIONS:

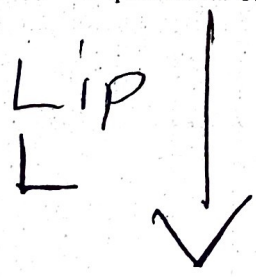
1. There will be 5 minutes reading time
2. Enter your Registration Number in all your answer books and scripts
3. The examination consists of 2 parts

Part A : - MCQ

i) Each question has only one correct answer
ii) Answer the question in the answer sheet provided.
iii) If you do correction do so very clearly.

Part B: - SAQ

i) Answer each question in a separate book
ii) Number all your questions clearly



REG. NUMBER .....

PART A : MULTIPLE CHOICE QUESTIONS

1. An AIDS defining malignancy
   A) Primary Central Nervous system lymphoma
   B) Squamous cell carcinoma of the conjunctiva
   C) Gastric adenocarcinoma
   D) Hepatocellular carcinoma
   E) Squamous cell carcinoma of the skin

   } Non - AIDS defining

2. An AIDS associated malignancy
   A) Primary central nervous system lymphoma
   B) Kaposi sarcoma
   C) Burkitt lymphoma
   D) Diffuse large B cell
   E) Squamous cell carcinoma of conjunctiva

   } AIDS defining

3. HIV virus drives carcinogenesis via all EXCEPT:
   A) Mutations ✓
   B) Cytokines surge ✓
   C) Micro RNAs ✓
   D) Co-infective agents
   E) Large pool of proliferating B cells ✓

4. Cellular Features of malignant cell - EXCEPT
   A) Hyperchromasia
   B) Increased nuclei cytoplasmic ratio
   C) Irregular nuclear membrane
   D) Prominent nucleoli
   E) invasion

5. True of sarcomas
   A) Benign mesenchymal tumours ✓
   B) Growth pattern shows nests, cords and trabeculae – epithelial
   C) Usually spreads through haematogenous route
   D) TNM staging is not applicable
   E) Does not metastasise to lymphnodes

tumour

6. An example of soft tissue tumour EXCEPT
   A) Fibroepithelial polyp
   B) Lipoma
   C) Uterine fibroids
   D) Osteosarcoma
   E) Rhabdomyoma

7. Familial tumour with a suppressor gene EXCEPT
   A) WILMS tumour
   B) Neurofibromatoses-I
   C) Retino blastoma
   D) Burkitts lymphoma
   E) Familial polyposis coli

8. Special stain used to demonstrate amyloid deposition
   A) Congo Red
   B) Haematoxylin and eosin
   C) Giemsa stain
   D) Gracott stain
   E) Pap stain

9. 90% of the amyloid deposits are composed of:
   A) Glycosaminoglycans
   B) Apolipoprotein E
   C) Serum amyloid P
   D) Serum amyloid E
   E) Aggregation of misfolded proteins

10. Cellular adaptive response EXCEPT:
    A) Hypertrophy
    B) Hyperplasia
    C) Atrophy
    D) Neoplasia
    E) Metaplasia

11. Tissue composed of stable cells EXCEPT:
    A) Intestinal mucosa – labile
    B) Liver
    C) Kidney
    D) Pancreas
    E) Endothelial cells

12. Not a role of extra cellular matrix in tissue repair
    A) Provide mechanical support for cell anchorage
    B) Control all growth by signalling through links with intracellular integrins
    C) Limit capillary proliferation within site of repair
    D) Establishment of tissue micro-environment
    E) Storage and presentation of regulatory molecules

13. Following a myocardial infarction, healing occurs by
    A) Regeneration
    B) Inflammation
    C) Fibrosis
    D) Metaplasia
    E) hyperplasia

14. TRUE regarding malignant hypertension
    A) 75% recover with no loss of renal function
    B) Is associated with abnormal renin levels
    C) Is more common compared to benign hypertension
    D) Affects 1-5% of hypertensive patients
    E) Has an insidious onset

15. Not a major criterion in diagnosis of Rheumatic fever
A) Sydenham's chorea
B) Carditis
C) Polyarthralgia
D) Erythemas nodosum – marginatum
E) Subcutaneous nodules

16. Causes for Lymphocytosis include all EXCEPT
A) Chronic lymphocytic leukaemia
B) Infectious mononucleosis
C) Brucellosis
D) Haemolysis
E) Tuberculosis

17. Peripheral blood features of neutrophil leucocytosis with a left shift and toxic granulation would be consistent with
A) Parasitic infection – eosinophilia
B) Bacterial infection
C) Virial infection
D) Bone marrow aypoplasia
E) Acute myeloid leukaemia

18. Infestation with the following parasite is associated with a microcytic hypochromic blood picture
A) Necator americanus
B) Plasmodium falciparum
C) Leishmania donovani
D) Diphilophothrium latum
E) Ascaris lumbricoides

19. The following one is classified amongst the early acting growth factors
A) Erythropoietin
B) Thrombo poietin
C) Gm – CSF
D) G-CSF
E) m-CSF

20. Microcytic red cell changes occurs in the following conditions EXCEPT
A) Iron deficiency anemia
B) Thalassemias
C) Lead poisoning
D) Hypothyroidism
E) Sideroblastic anaemia

21. The following changes are associated with iron deficiency anaemia
A) Elevated serum iron levels
B) Elevated serum ferritin
C) Reduced MCH
D) Raised MCV
E) Reduced total iron binding capacity

22. Vitamin B_{12}
A) Rich sources constitute plants – made in the gut.
B) Has no role in haemopoiesis
C) Normal serum levels 160-923 ng/L
D) Is absorbed in the stomach using intrinsic factor – ileum
E) Destroyed during cooking > 70%

23. The serum folate levels in adults is
A) 160 – 640 µg/L
B) 3 – 15 µg/L
C) 160 – 500 µg/dL
D) 4 – 20 µg/dL
E) 60 – 80 µg/L

24. Non megaloblastic macrocytic anemia are associated with the following condition EXCEPT
A) Liver disease
B) Drugs
C) Vitamin B_{12} deficiency
D) Aplastic anemia
E) Hypothyrodism

25. A mother is blood group A+ve and the father blood group AB–ve, the offspring will be blood group EXCEPT
A) O +ve
B) B +ve
C) A +ve
D) AB +ve
E) Any of the above

26. The shelf life of platelets concentrates is
A) 35 days in room temperature
B) 3 – 5 days in room temperature
C) 21 days
D) 3 – 5 days at refrigeration
E) 28 days

27. An ideal blood donor concentrate's
A) 16 year old or younger
B) Regularly donates blood
C) A multiparous female
D) Bisexual
E) Commercial donor

28. Adhesion, aggregation and release are functions of the
A) Fibrinolysis
B) Anticoagulation
C) Coagulation system
D) Blood vessel
E) platelet

29. The inheritance pattern of haemophilia B is
A) Double Autosomal
B) X-linked recessive
C) Unknown
D) Autosomal dominant
E) Autosomal recessive

30. In haemophilia A laboratory tests manifest with
A) A prolonged prothrombin time
B) Abnormal platelet function in presence of antibodies of factor VII
C) Normal thrombin time
D) A prolonged bleeding time
E) Prolongation of the activated partial thromboplastin time

31. A known haemophilia patient presents to the casualty with a minor bleeding. The appropriate investigation is
A) Serum blood sugar
B) Serum creatinine
C) Blood slide for malaria parasite
D) Coagulation screen
E) Serum lactate dehydrogenase

32. Which one of the following is the **ODD** one out
A) Hereditary elliptocytosis
B) Defect in the hexose monophosphate shunt
C) Hereditary stomatocytosis
D) Disorders of permeability of membrane
E) Abnormal membrane lipid composition

33. Which of the following is NOT included in immune haemolytic anaemia
A) IgM mediated
B) Warm antibody
C) Paroxysmal nocturnal haemoglobinuria
D) IgG mediated
E) Cold antibody

34. One of the following regions does NOT have a high prevalence of HbS
A) Mediterranean
B) West Africa
C) East Africa
D) Saudi Arabian peninsula
E) South East Asia

35. The definitive diagnostic test in sickle cell disease is
A) Sickling test
B) Hb electrophoresis
C) Hb solubility test
D) Peripheral blood picture
E) Positive family history for sickle cell disease

36. Excess ADH production may lead to:
A) Polyuria
B) Hypernatraemia
C) Increased plasma osmolarity
D) Increased urine osmolarity
E) proteinuria

37. Iron overload is usually associated with:
A) Increased plasma ferritin
B) Decreased plasma iron
C) Increased total iron binding capacity
D) Increased plasma transferrin
E) Pernicious anaemia

38. Causes of hypercalcemia include the following: except:
A) Thiazide diuretics
B) Sarcoidosis
C) Tuberculosis
D) Thyrotoxicosis
E) Chronic kidney disease

39. The total amount of iron in the body is about
A) 3 – 4 grams
B) 2 – 10 grams
C) 15 – 30 milligrams
D) 100 - 2000 grams
E) 1 – 2 grams

40. Causes of Hyperphosphatemia include the following EXCEPT:
A) Renal FAILURE
B) Vitamin D excess
C) Tumour lysis syndrome
D) Hypoparathyroidism
E) Alcohol withdrawal

41. High Cortisol levels and low ACTH levels indicate
A) Addison's Disease
B) Acromegaly
C) Pheochromocytoma
D) Cushing's Disease
E) Prolactinoma

42. All these endocrinopathies can arise from hypopituitarism EXCEPT:
A) Dwarfism
B) Secondary adrenal cortical insufficiency
C) Lack of lactation
D) Secondary hypothyroidism
E) Hypergonadotrophic hypogonadism

43. How much glucose is administered in an oral glucose tolerance test?
A) 20 grams
B) 45 grams
C) 50 grams
D) 75 grams
E) 120 grams

44. The reference range for fasting plasma blood sugar is approximately:
A) 1 – 2.2 mmol/l
B) 2.2 – 3.2 mmol/L
C) 3.2 – 6.1 mmol/L 3-2-6-1
D) 3.2 – 7.8 mmol/l.
E) > 11.0 mmol/L

45. All these endocrinopathies lead to hyperglycaemia EXCEPT:
A) Insulinoma
B) Addison's Disease
C) Phaeochromocytoma
D) Hypothyroidism
E) Glucagon deficiency

46. For how long does sodium fluoride stabilize glucose in blood at room temperature
A) 1 hour
B) 12 hours
C) 24 hours
D) 72 hours
E) 48 hours

47. Which of the following specimen is preferred for emergency tests?
A) 24 hour urine
B) 3 hour urine
C) Early morning urine
D) Random urine
E) Catheter urine

48. A positive test for ketone bodies in urinalysis may be indicative of _____
A) Proteinuria
B) Bacteriuria
C) Malabsorption
D) Anorexia
E) High carbohydrate intake

49. Which of the following is the major paraprotein associated with multiple myeloma?
A) IgA
B) IgD
C) IgD
D) IgM
E) IgG

50. Which of the following urinary metabolite is associated with catecholamine metabolism?
A) Globulins
B) Bence jones
C) Dopa
D) Vanillyl mandelic acid
E) creatinine

51. In serum protein electrophoresis, an abnormal ceruloplasmin (CER) protein can be detected in _____
A) The albumin band
B) The alpha one globulin band
C) The alpha two globulin band
D) Beta globulin band
E) Gamma globulin region

52. Decreased total and LDL-cholesterol with normal triglycerides suggest
A) Tangier's disease
B) Hypo-lipoproteinaemia
C) Abetalipoproteinaemia
D) Lp(a) disease
E) Hypo-β-lipoproteinaemia

53. In the differential diagnosis of hypercalcaemia the following should **not** be included
A) Vitamin D dependent rickets
B) Vitamin D intoxication
C) Excess absorption secondary to "milk alkali syndrome"
D) Multiple myeloma
E) Primary hyperparathyroidism

54. Of the enzymes listed which one is least useful for reflecting hepatobiliary disease
A) GGT
B) Glutamate dehydrogenase
C) 5' nucleotidase
D) ALP
E) Leucine amino peptidase (arylamidase)

55. True of a specimen for measurement of lipids:
A) Use of fluoride is mandatory
B) Should be frozen immediately
C) Should be a fasting specimen
D) Only serum should be used
E) None of the above

PART B : SHORT ANSWER QUESTIONS (SAQS)

1. (a) Describe the mechanisms involved in the termination of an acute inflammatory response. (12.5 marks)

b) Discuss paraneoplastic syndromes under the following: (12.5 marks)
   i) Definition
   ii) Discuss the clinical importance of paraneoplastic syndrome
   iii) Describe the pathogenesis of one endocrine paraneoplastic syndrome

2. A 29 year old has the following blood count results:
   Hb – 5.9 g/dl ↓
   WBC – 6.2 x 10^9/l → N
   MCV – 55 fl ↓
   MCH – 18 pg ↓
   Platelets – 400 x 10^9/l → N
   N_1 = 150-450 x10^9/L.

   Hb = 5.9g/dl ↓
   WBC = 6.2 x 10^9/L
   MCV = 55fl
   MCH = 18pg
   PLT → 400 x 10^9/L. ↑↓

   i) Interpret the above results. (3 marks) hypochromic,
   ii) Give the most likely differential diagnosis. (2 marks) Microcytic
   iii) Outline relevant investigations to confirm diagnosis for this patient. (7 marks)

3. i) Define haemolytic red cell disorders. (2 marks)

   ii) Outline the laboratory investigations of a patient with haemolytic red cell. (10 marks) — Morphology

   iii) With the aid of a diagram outline the pathway of the Coagulation System. (12 marks) Biochemical

   (ii) PBF. → polychromatophilia
   NRBC's
   Neutrophilia, thrombocytosis

4. A 58 year old male patient presented at the medical clinic and the attending physician suspected diabetes mellitus. Answer the following questions:

   i) List five signs and symptoms the patient might be having. (2.5 marks)

   ii) List the biochemical tests in sequential order the physician will order to make a diagnosis of diabetes mellitus. (6 marks)

   iii) List three (3) complications of diabetes mellitus. (1.5 marks)

   iv) What is the most likely type of diabetes mellitus is in this patient. (2 marks)

↓ LOA
Hb
normocytic
Morphology

5. a) i) List the hormones produced in the anterior pituitary. (2.5 marks)

ii) For each hormone listed above, give its overall function. (5 marks)

iii) List five endocrinopathies arising from the hyper functioning anterior pituitary. (5 marks)

b) i) Discuss causes of acute renal failure. (6 marks)

ii) Describe biochemical investigations in this condition. (6½ marks)

a) 602 form
b) D1 form
c) A23 form
d) Death certificate
e) P3form

9. An example of acute inflammation
a) Lepromatous leprosy
b) Tertiary syphilis
c) Cryptococcal meningitis
d) Bee sting
e) Schistosomal cystitis

10. The following is not amorphologic form of acute inflammation
a) Serous fluid formation in pulmonary TB
b) Fibrinous deposition in rheumatic carditis
c) Abscesses formation is post tooth extraction
d) Fibrino suppurative inflammation in lober pneumonia
e) Granuloma formation around foreign body in lower leg

11. Odontogenic tumors are of
a) Mesenchymal origin
b) Epithelial origin
c) Glial origin
d) Hemapoeitic origin
e) Bone origin

12. The following is true of soft tissue tumors
a) Cells form tubular and glandular ~~fractures~~ structures – epithelial.
b) Cells produce keratin
c) Cells grow in sheets and have thin walled vascular channels
d) Desmoplasia is often associated with these tumors
e) Mucin production is a common phenomenon

13. Tumors associated with inherited tumor suppression genes except:
a) Ratinoblastomas
b) Familial adenematious polyposis
c) Whilm's tumors
d) Neurofibromatosis type I
e) Burkitt lymphoma

14. Cancers are best described as
a) Benign epithelial tumors
b) Malignant mesenchymal tumors
c) Benign epithelial and mesenchymal tumors
d) All types of malignant tumours
e) All Neoplams

1. Does not occur during nuclei excescion and repair process in the G2 of the cell cycle.
a) Excision mutations
b) Ligation of nucleotides
c) Synthesis of nucleotide patch
d) Deletion of damaged nucleotide
e) Transcription

2. Neoplams commonly seen in patients treated for cancers using radiotherapy
a) Fibrosarcoma
b) Hepatocellular carcinoma
c) Squamous cell carcinoma of the uterine
d) Squanous cell carcinoma of buccal

3. A stable cell
a) Epidermal cell
b) Hepatocytes
c) Neuron
d) Colonic mucosal cell
e) Transitional epithelia cell

4. Not an effect of radiation injury
a) Hyperchromasia
b) Pleomorphism
c) Increased mitoses
d) Apoptosis
e) Intranuclear eosinophilic bodies

5. The following occurs in the S-phase of cell cycle
a) Diminished RNAs content
b) Diminished DNA pairs
c) 1st Resting phase
d) Cell division phase
e) Increased protein synthesis

6. Not a common complication of HIV/AIDS patients in CDC stage IV
a) Cardiomyopathy
b) Deep venous thrombosis
c) Meningoencephalitis
d) Blindness due to cataract
e) Blindness due to retinopathy

7. Commonest life threatening fungal infection in HIV/AIDS
a) Cryptococcus neoformans
b) Oral Candidiasis
c) Actinomyces species
d) Maduromycetoma
e) Aspergillus neoformans

15. A malignant tumor previous treated to remission with cytotoxic drugs recurs, the likely explanation
    a) Tumour acquiring new genetic mutation that make it resistant to current treatment
    b) Tumour that was not sensitive to initial treatment
    c) Host response that does not allow tumour to be cleared•
    d) A mutation of P53 gene
    e) Tumour has acquired a RAS gene mutation

16. Not a mechanism of cell injury due to radiation exposure
    a) Protein-adduct formation• — covalent bond.
    b) Peroxidation of lipid membranes - ROS
    c) Double standard chromosomal breakages
    d) Increase in aquaporins and osmotic lysis
    e) Free radical exidative injury.

17. Not classified under the Chapel-Hill classification of vasculitis
    a) Churg-Strauss syndrome
    b) Osler-Weber-Rendu syndrome•
    c) Temporal arteritis
    d) Polyateritis nodosa
    e) P-ANCA assocaited microscopic polyangitis

18. Which of these infections are associated with small vessel vasculitis?
    a) Malaria
    b) Marburg viral haemorrhagic fever•
    c) Tinea vesicolor
    d) Staphylococcal toxic shock syndrome
    e) Non-gonococcal urethritis

19. Cystic infarcts are usually found in the
    a) Spleen
    b) Brain•
    c) Liver
    d) Muscle
    e) Intestine

20. The term neoplasia means
    a) Tumour
    b) New growth•
    c) Swelling
    d) Oncology
    e) Study of cancer

21. A benign tumour arising in cartilage
    a) Chondrosarcoma
    b) Chondroma•
    c) Chordoma
    d) Chondrocaranioma
    e) Chondroid myoma

22. Breast carcinoma usually spreads to axillary lymph nodes via
    a) Lymphatic spread•
    b) Haematogenous spread
    c) Seeding
    d) Direct spread
    e) Metaplasia

23. Haematogenous spread of tumours is favoured by
    a) Schwanomas
    b) Sarcomas•
    c) Chondromas
    d) Haematomas
    e) Melanomas

24. True about dysplasia
    a) Means cancer
    b) Always leads to cancer
    c) May be reversible•
    d) Carcinoma in situ is moderate dysplasia
    e) Does not involve epithelium

25. Malignant tumours arising from epithelium
    a) Sarcoma
    b) Carcinoma•
    c) Chondroma
    d) Choristoma
    e) Hamastoma

26. Malignant tumour
    a) Melanoma
    b) Fibroma
    c) Chondroma
    d) Adenoma
    e) Ameloblastoma

27. In congestive heart failure, oedema occur as a result of:
    a) Secondary aldosteronism•
    b) Lymphatic obstruction
    c) Reduced plasma osmotic pressure
    d) Increased vascular permeability
    e) Raised antidiaretic hormone levels

28. Activation signals for macrophages include the following except:
    a) Bacterial endotoxin
    b) Microbial products
    c) Interfero-gamma
    d) Fibronectin• - ECM
    e) Interleukin (IL-12)

- mycoplasma
- T. pallidum
- leptospira
- Bartonella
- Rickettsia

A 7[illegible] male [illegible] rapidly growing mass in the mandible. A rapid diagnostic procedure would be

a) An excisional biopsy
b) Chromosomal studies
c) A fine needle aspitation biopsy
d) A needle core biopsy
e) An ultra-sound guided incisional biopsy

37. A 70 year man has a pulsatile mass in midline of his lower abdomen. Most likely diagnosis is

a) Angiosarcoma
b) Metastatic prostatic carcinoma
c) Kaposis sarcoma
d) Aortic aneurysm
e) Arterio-venous fistula

38. Dystrophic calcification

a) Occurs only in bone
b) Is a common cause of organ dysfunction after trauma
c) Hypocalcaemia is a common association
d) Occurs due to formation of crystalline calcium bicarbonate (PO_4^{3-})
e) Occurs in areas of any type of necrosis

39. Which public health intervention has resulted in the greatest impact on reduction of cancer mortality?

a) Hepatitis B vaccine
b) Prostatic specific antigen (PSA) screening for men under 50 years
c) Urinalysis in steel industry workers
d) Prohibition of use of nickel fasteners in undergarments
e) Automation of chimney sweeping

40. Which is the least likely to give rise to subsequent carcinoma in the affected tissues?

a) Atypical endometrial hyperplasia
b) Multiple colonic polyps - 50% chance ⇒ cancer
c) Oral leucopiakia - pre-cancerous
d) Low grade vaginal intraepithelial neoplasia
e) Multiple fibroepithelial polyps on the face

Stem for Questions 41 – 44

A 9 year old is suspected to have acute myeloid leukaemia

41. The most unlikely finding on examination is ~~cyanosis~~

a) Cyanosis
b) Features of an infection
c) Palour of mucous membrane
d) Splenomegaly and/or hepatomegaly
e) Easy bruisability

29. Hypertension contributes to the pathogenesis of all the following except:

a) Coronary heart disease
b) Cerebro vascular accidents
c) Cardiac hypertrophy
d) Neoplasia
e) Aortic dissection

30. Factors associated with essential hypertension except:

a) Smoking
b) Stress
c) Obesity
d) Heavy salt consumption
e) Being resident in Africa

31. Fibrinoid necrosis of the arterioles occur in:-

a) Malignant hypertension
b) Diabetes mellitus
c) Atherosclerosis
d) Congestic heart failure
e) Giant cell arteritis

32. A feature of irreversible cell injury:

a) Plasma membrane blebbing
b) Loosening of intercellular attachments
c) Mitochondrial swelling
d) Nuclear shrinkage
e) Detachment of the ribosomes from the endoplasmic

33. In paraneoplastic syndrome thymoma is associated with

a) Fever
b) Myasthenia gravis
c) Hypertrophic oesteoarthropathy
d) Hypocalcaemia
e) Secondary amyloidosis

34. True of mutations except:

a) May give rise to inheritated diseases
b) May involve loss or gain of a whole or part of a chromosome
c) When they involve single base substitutions are called point mutations
d) Those affecting germ cells are transmitted to progeny
e) Defined as permanent damage to RNA

35. Not true of mendelian disorders

a) Majority are recessive
b) Are result of single gene mutation
c) All have minor phenotypic affects
d) Upto 85% of mutation are familial
e) Every individual carries a small number of deleterious genes

(1) Tania

UNIVERSITY OF NAIROBI
DEPARTMENT OF HUMAN PATHOLOGY

HAEMATOLOGY AND BLOOD TRANSFUSION
MBChB III 2014/2015

MCQ CAT

DATE: 30/04/2015
TIME: 2.00-4.00PM

INSTRUCTIONS

1. Answer **ALL** the questions as directed.
2. Put the right answer in the right box.
3. Write legibly.
4. Write your registration number on each booklet used.

MCQ MBCHB:

1. One of the following is correct about ordering a laboratory test in haematology:

   a. Patients must have a problem
   b. No test is to be ordered if it does not assist the person from whom sample taken.
   c. Blood film is a must in haematological
   d. Test are to let the doctor know what is right
   e. Anybody in the ward can order a laboratory test for a patient

2. In the granulocytic maturation sequence the capacity do divide stops at:

   a. Promyelocytes
   b. Myelocytes
   c. Metamyelocte
   d. Segmented form — first maturation for granulocytes.
   e. Myeloblast

3. The total body iron content of normal adult varies from

   a. 1.5 – 3gm
   b. 3-4mg
   c. 3-5gm
   d. 2.3-3.8gm
   e. 1-2gm

4. The survival of the normal red cells is dependent in the generation of:

   a. ATP
   b. NAD
   c. Na+
   d. K+
   e. 23DPG

5. With the exception of the following, haemogenesis in adult life takes place exclusively in the bone marrow.

   a. Lymphocytes
   b. Monocytes
   c. Eosinophils
   d. Basophils
   e. Neutrophils

6. In the Kenyan population the proportion (%)/level of rhesus D negative is:

a. 6-7
b. 5-6
c. 3-4
d. 4-5 2.5-4%.
e. 1-2

7. The malignancy that is commonly referred to as an HIV/AIDS defining case in Kenya is :

a. Carcinoma of the uterus.
b. Hepatocellular carcinoma
c. Burkitt's lymphoma.
d. Kaposi's sarcoma. - AIDS defining.
e. Hodgkin's lymphoma.

* 8. A bleeding patient with thrombocytopenia post-chemotherapy requires the following blood product:

a. Fresh whole blood
b. Fresh frozen plasma x anaemia
c. Parked red cells.
d. Cryoprecipitate x
e. Platelet concentrate

9. An eight year old in Kenya suffering from leukaemia is most likely to have:

a. undifferentiated leukaemia
b. Chronic myelogenous leukaemia 40-60yrs
c. Acute lymphoblastic leukaemia. -> ALL -> blasts.
d. Chronic lymphocytic leukaemia. 60-70yrs.
e. Hairy cell leukaemia.

10. Patients on Warfarin therapy are normally monitored in the laboratory with the following test: anticoagulant

a. Activated partial thromboplastin time. -> heparin
b. INR oral coagulant. ??
c. Thrombin time
d. D-dimer assay
e. Euglobin clot lysis time - measures overall fibrinolysis
↳ fibrinolysis

* 11. One of the following is not an immediate event during transfusion of whole blood

a. Haemolysis
b. Thrombophlebitis

c. Hypervolemia
d. Urticaria
e. Hypertention

12. A known haemophilic patient presents to the accident and emergency with a bleeding that is not life threatening. The most appropriate investigation is:

a. Haemostasis profile
b. Skull X-ray
c. CT scan or MRI of the brain
d. Serum blood sugar
e. Blood slide for malaria parasite

13. A six years old with the diagnosis of Aplastic anaemia, and has skeletal, dermatological features , and failure to thrive should evaluated for

a. Myelodysplastic syndrome
b. Fanconi's anaemia
c. Lymphoproliferative disorder
d. Myeloproliferative disorder
e. Chronic Myelo Monocytic Leukaemia (CMML)

O – No antigen

AB – Has antibodies

14. Which of the following statement is correct on blood groups

a. Blood group O does not have antigens
b. Blood group AB does not have antibodies
c. Blood group D negative truly describes rhesus negative
d. Rhesus Du is Rhesus D positive weakly +ve
e. Minor blood groups do not cause blood transfusion reaction.

15. A finding which is a requirement for the diagnosis of Hodgkin lymphoma is :

NHL

a. Histocyte
b. Reed Sternberg cell → staging
c. Plasma cells
d. Neutrophils
e. Lymphocyte

Neutrophilia CHIMTS

Eosinophilia HL DKAPTE

Monocytosis HL

16. Reticulocyte are generally raised in:

a. All anaemia
b. Megaloblastic anaemias
c. Hemolytic anaemias - RBC
d. Iron deficiency
e. Multiple deficiencies.

Lymphocytosis MC. NHL.

Neutrophilia BOLDHIM

Lymphopenia HL HIV

Basophilia

CD cd Eo

17. A 7 year old Kenyan presenting with a painless jaw rapidly growing mass is most likely has:

a. Rhabdomysarcoma
b. Dental abscess
c. Ameloblastoma
d. Neuroblastoma
e. Burkitt's lymphoma.

18. One of the following is increased in iron deficiency:

a. Serum Iron
b. Serum ferritin
c. Iron stores
d. TIBC
e. Tissue Stainable iron

19. One of the following severe factor deficiency will not lead to both males and females bleeding :

a. Factor XI
b. Factor VII
c. Von Willebrand's factor
d. Factor IX
e. Factor X

20. One of the following is not usually associated with HIV infection:

a. Lymphocytosis
b. Pancytopenia
c. Leucopenia
d. Decrease in CD4 count.
e. Lymphopenia.

21. Increased neutrophil count does not ensue from

a. Bleeding
b. Haemolysis
c. Infection
d. Acute leukaemia
e. Myeloproliferative disorder.

22. Oral anticoagulant therapy is clinically monitored preferably by one of the following tests:

a. Activated partial Thromboplastin time (APTT)

b. Blood Warfarin levels
c. Clotting factor assays
d. Prothrombin time
e. INR determination.

23. Points to note on examination of anaemia that suggests cause does not include:

a. Skin and sclera.
b. Nails
c. Racial group
d. Rectal examination
e. Lymph nodes enlargement

24. Points to note in the history during evaluation of anaemia suggestive of cause does not include:

a. Drugs
b. Change in weight → malignancy bleeding gums
c. Bone pains
d. Operation
e. Oral Symptoms.

25. In haemophilia A laboratory tests manifest with :

a. A prolonged bleeding time → BT ↓ plt fn → Glanzmanns, Bernard Soulier, DIC, Thrombocytopenia, VWF, aspirin
b. Prolongation of the activated partial Thromboplastin time. (factor 8)
c. A prolonged prothrombin time. - warfarin, DIC,
d. Abnormal platelet function in presence of antibodies of factor VII
e. Normal thrombin time.

(PTT → 1, 2, 5, 8, 9, 10, 11, 12; PT → 1, 2, 5, 7, 10)

26. Chromosomal changes associated with CML is.

a. t(9;22)
b. t(8;14) → Burkitts
c. t(8;22)
d. t(6;9)
e. t(11;20)

(15;17) (21: acute)

27. The following test is not routinely performed in blood for transfusion:

a. VDRL → syphilis
b. HIV
c. HBV
d. HCV
e. HAV

(VWF, haemophilia)

28. ABO blood groups:

a. naturally occur anti A and anti B ~~and~~ cold antibodies
b. A and B antigen and controlled to red cells.
c. O blood group cells lack A, b ~~and~~ antigens
d. Most individuals of blood group A belong to A2 sub group.
e. "Bombay" blood group

29. Select one of the following anticoagulants which is used for Total blood count and blood film.

a. Sequestrene (EDTA)
b. Heparin
c. Oxalate
d. Na-Citrate
e. Lithium Heparin

30. Three (x3) times haemoglobin is approximately one of the following values:

a. MCV
b. MCH
c. PCV/HCT
d. RCDW
e. MCHC

31. The Romanowsky's stains' commonly used at the KNH haematology laboratory is:

a. MGG May Grunwald Giemsa
b. Leishman
c. Giemsa
d. Jenners
e. Leishman + Giemsa

32. Diagnosis of the following condition does ~~not require~~ bone marrow aspiration:

a. Leukaemia
b. Sickle cell disease
c. Macrocytosis
d. Lymphoma
e. Myeloma

33. Macrocytosis in the PBF (peripheral blood film) is not associated with:

a. Liver disease
b. Chronic aspirin ingestion
c. Infection by Dipthlobothrium latum

d. Vitamin B12 deficiency
e. Folic acid deficiency

34. Straight forward very severe aplastic anaemia manifests with all of the following:

a. Frequent fever/febrile illness
b. Leucopenia
c. Massive splenomegaly
d. Bleeding tendencies.
e. Dizziness and breathlessness

35. One of the following is not an established complication of whole blood transfusion:

a. Hyperkalaemia
b. Hypokalaemia
c. Hypocalcaemia
d. Hypoglucaemia
e. Hyperuricaemia

36. For the management of Hodgkin's lymphoma , one of the following is not true

a. All stages of the disease and subtypes carry bad prognosis
b. Staging is important for options of treatment.
c. Staging is an important part of the management
d. Cytotoxic therapy and irradiation are treatment modalities
e. Both children and adults maybe affected.

37. The most serious and immediate blood transfusion reactions are usually due to:

a. Red cells
b. Plasma
c. WBC
d. Platelets
e. HLA

38. Compatibility tests for blood transfusion are based on:

a. HLA antigens
b. Antignes on the red cells and antibodies in the serum
c. Antibodies in the subject plasma
d. Leucocyte antigen
e. Platelet antigen.

39. To be recipient of blood transfusion, considerations are usually not given to:

a. Level of HB level
b. Cardiovascular system status
c. Overall blood volume of the recipient
d. Recipient diagnosis
e. Nutritional status.

40. One of the following is not a consideration for a blood donor:

a. Age
b. Sex
c. Weight
d. Social behaviours
e. Medical history

41. One of the following is not associated with causing Myelodysplasia

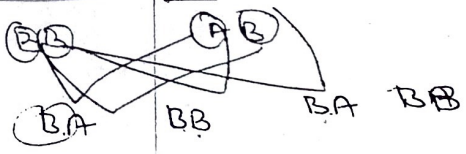
a. Most cytotoxic drugs.
b. Radiation to bone marrow
c. Idiopathic
d. Iron deficiency
e. Post treatment of leukaemia.

42. A myeloproliferative disorder (MPD) does NOT include.

Polycythemia vera
Essential thrombocytosis
I°/Idiopathic myelofibrosis
CML

a. Essentialthrombocythaemia
b. Multiple myeloma
c. Polycythaemia rubra vera/primary Proliferative polycyuthaemia - Basophilia.
d. Idiopathic myelofibrosis
e. Chronic granulocytic leukaemia.

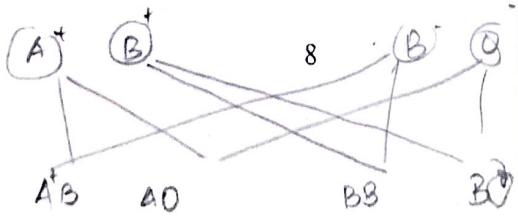
43. Parents of blood group B negative and AB positive MAY NOT have a child of ABO and ~~RHID~~ RH-D group of:

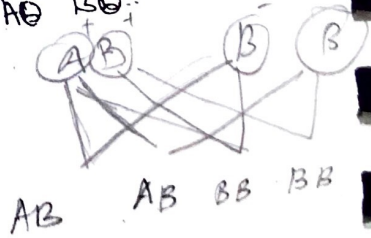


a. Negative
b. A positive
c. B positive
d. AB positive
e. A negative

44. Which of the following component added to donor blood for transfusion give 35 days of storage.

a. Sodium citrate Dextrose (28)
b. Sodium Citrate (21)





c. Citrate Phosphate dextrose adenine-1
d. Lithium heparin
e. Citrate phosphate.

45. Established causes of folic acid deficiencies: Except

a. Increased demand.
b. Chronic haemolysis
c. Excessive cooking of food
d. Pernicious anaemia – B12
e. Nutritional deficiency.

46. One of the following is NOT a feature of Hypersplenesim:

a. Splenomegaly
b. Peripheral cytopenia
c. Reversion to normal blood and bone marrow after splenectomy
d. Hyperplastic marrow
e. Initial increase cellular elements of blood.

47. One of the following has NOT been implicated in the cause of leukaemia:

a. Radiation
b. Viruses
c. Genetics
d. Chemicals
e. More nutritional products

48. One of the following is NOT for diagnosis of leukaemia:

a. Haemogram
b. Bone marrow examination
c. Blood film evaluation
d. Dietry information
e. Clinical information

49. Auer rods are usually a feature of:

a. Acute myeloid leukaemia
b. Acute lymphatic leukaemia
c. All types of leukaemia
d. All forms of Myelodysplasia
e. Chronic leukaemia.

50. One of the following is not useful in the management of haemophila B:

a. Cryoprecipitate
b. Fresh Frozen plasma
c. Prothrombin complex
d. Factor IX recombinant
e. Factor IX concentrate from plasma products

51. The inheritance characteristic of haemophilia B is:

a. Autosomal dominant
b. Autosomal recessive
c. Double Autosomal
d. X linked recessive
e. Unknown

52. One of the following does NOT is not commonly associated neutropaenia:

a. Cytotoxic therapy
b. Irradiation
c. Inheritance
d. HIV/AIDS
e. Acute bacterial infections

53. A laboratory test NOT indicated in a 57-year-old male with straightforward microcytic hypochromic anaemia:

a. Urinalysis
b. Blood film
c. Stool for occult blood
d. Total blood picture
e. Folic acid red cell level

54. Symptoms of anaemia include all of the following except:

a. Fatigue
b. Fainting
c. Headache
d. Angina
e. Reduced heart rate

55. A sign in anaemic patient that is suggestive of the aetiology is:

a. Pallor of mucous membrane
b. Koilonychias
c. Pallor of nail bed

d. Heart failure
e. Haemorrhage

56. All of the following points in examinations for the cause of anaemia are important except:

a. Bleeding diasthesis
b. Lymph nodes
c. Rectal examination for hemorrhoids
d. Body mass
e. Abdominal findings for example Splenomegaly/hepatomegaly.

57. One of the following is NOT true of laboratory assessment of haemophilia:

a. No substitute for an accurate laboratory assessment of haemophilia:
b. Blood samples can be taken from an indwelling cannula
c. Citrate should be the anticoagulant of choice.
d. Samples to the laboratory be sent with minimum delays
e. Proper ration of anticoagulant to blood sample.

58. One of the following is not a characteristic feature of Burkitt's lymphoma:

a. Disease commoner in tropical Africa than temperate countries
b. Commonly presents with swelling/mass
c. Malaria areas have higher incidence
d. Epstein Barr virus has been implicated
e. Is an inherited disease.

59. Iron is primarily stored in the:

a. Kidney
b. All body organs
c. Heart
d. Liver
e. Spleen

60. Maximum absorption of iron occurs in.

a. Stomach
b. Duodenum
c. Jejunum
d. Ileum
e. Colon

61. Dietary sources rich in iron include all except:

a. Fatty meat
b. Egg yolk
c. Green vegetables
d. Milk
e. Liver

62. Iron absorption is facilitated by all except:

a. Reduced stomach pH
b. Acidic pH
c. Sugars
d. Ascorbic acid
e. Tea

63. One of the following is crucial in the diagnosis of lymphomas

a. Chest X-ray
b. Biopsy (LN)
c. Abdominal ultrasound
d. CT scan
e. Bone marrow aspirate

64. An important cause of vitamin B_{12} deficiency.

a. Absence of intrinsic factor in the stomach
b. Resection of the colon
c. Resection of the jejunum and duodenum
d. Taenia infestation
e. Hook worm infestation.

65. One of the following is associated with folate deficiency.

a. Chronic haemolysis.
b. A diet rich in leafy green vegetables
c. Appendectomy
d. Infestation with D latum tapeworm
e. Oral administration of ordinary antibiotics.

66. One of the following foods is rich in Vitamin B_{12}

a. Meat and other animal products
b. Green vegetables
c. Various fruits
d. Carbohydrates based foods

e. Fatty foods

67. Over cooking of food may lead to

a. Iron deficiency
b. B_6 deficiency
c. B_{12} deficiency
d. Magnesium deficiency
e. Folate deficiency

68. Stainable bone marrow iron is usually absent in one of the following conditions.

a. Iron deficiency
b. Pyridoxine responsive anaemia
c. Megaloblastic anaemia
d. Anaemia of chronic disease
e. Multiple deficiency anaemia

69. Vitamin B_{12} is absorbed in the:

a. Upper GIT
b. Stomach
c. Terminal ileum
d. Large intestine
e. Duodenum

70. One of the following is NOT a ? test for evaluation of aplastic anaemia

mcv – ↑

a. Total blood count
b. Bone marrow aspirate
c. Trephine bone marrow biopsy
d. Reticulocyte count
e. Bone biopsy

71. Burkitt's lymphoma in Kenya's provinces is likely in the following three

a. Western, Coast Nyanza
b. Nairobi, central, Eastern
c. Rift Valley, Central, Eastern
d. North Eastern, Central, Rift valley
e. Western, Rift Valley, Central

72. One of the following factors should not be considered during the investigation of anaemia.

a. Residence

b. Parity
c. Occupation
d. Diet
e. Height

73. Whole blood collected in CPDA-1 and stored at 4°C should be transfused within a maximum of

a. 21 days
b. 28 days
c. 35 days
d. 40 days
e. 42 days

74. One of the following is not a consideration for an ideal blood donor

a. HB at least 12.5g/dl
b. Interval after previous donation at least 3 months
c. Weight at least 50kg
d. Heterosexual
e. 16-65 years of age

75. Functions of the NBTC include

a. Co-ordination of blood transfusion services in the province
b. Training of personnel for the blood transfusion services
c. Blood policy for formulation and implementation
d. Collection of data for improvement of services and research
e. All of the above are correct.

76. Trephine bone marrow biopsy examination is usually essential for the diagnosis of all the following except:

a. Aplastic anaemia
b. Haemolytic anaemia
c. Myelofibrosis
d. Leukaemia
e. Marrow involvement by tumour.

77. A thirty year old male has HIV/AIDS. He is Referred for haematological opinion. Which test is NOT necessary at the moment.

a. Total blood count
b. Erythrocyte Sedimentation Rate (ESR)
c. Reticulocyte count
d. Serum ferritin

e. Blood film morphology and differential count.

78. Of the blood cells which one is preserved or even raised at late stage of his disease.

a. Neutrophils
b. Eosinophils
c. Monocytes
d. Lymphocytes
e. All white blood cells are raised.

79. On examination he is noted to have petechial haemorrhages. What is the cause of this?

a. Immune Thrombocytopenia like disease
b. Factor XIII disease
c. Factor VIII like disease
d. Infection
e. Resent aspirin use.

80. He has lesions in the mouth and skin that at histology are malignant. Which of the following is not a feature?

a. Mucocutaneaous
b. Palate lesions
c. Lymphadenopathy
d. Oral candidiasis
e. Xeroderma pigmentosum

81. The malignancy is not:

a. Kaposi's Sarcoma
b. Non-Hodgkins lymphoma
c. Primary cavity lymphoma
d. Carcinoma of the lung.
e. Squamaous cell carcinoma of the conjunctiva

82. A 21 year old female recently delivered her second child, was diagnosed to be severe substrate deficiency anaemia. Of the haematological value indices which would be pointing to cause of anaemia.

a. PCV/HCT
b. MCV
c. MCHC
d. Haemoglobin level
e. RBC count.

83. On examination one of the following signs suggest cause of anaemia.

a. Koilonychias
b. Palour of mucous membranes
c. Level of jaundice
d. Lymphadenopathy
e. Spots on the skin.

84. She requires advise and counseling which of the following will improve her level of haemoblobin and use mainly

a. Milk
b. Bread
c. Use of anti-acids
d. Liver
e. Fruits

85. If the haemoglobin is 6g/dl the best route for therapy to supplement iron is

a. Subcutaneous
b. Intravenous
c. Intramuscular
d. Oral
e. Intradermal

86. The demonstration of Haemoglobin types HbS, F, A1 ,A2 C requires:

a. Serum electrophoresis
b. Hb electrophoresis
c. Hb solubility
d. Sickling test
e. All of A,B,C,D

87. Folic acid deficiency may follow which of the following conditions?

a. Familial selective malabsorption
b. Pernicious anaemia
c. Alcoholism
d. Gastrectomy
e. Fish tapeworm infestation

88. The rational for giving vitamin K is to promote the functions of the following set factors.

a. V, IX, X, XI
b. IX, X, XI, XII

c. VIII, X, V, II
d. II, VII, IX, X
e. X, XI, XII, XIII

89. To characterize the cause of red blood cell, MCV of 115 fl in a 60 year old the following is basic

a. Bone marrow
b. Blood film
c. Coombs test
d. ESR
e. Reticulocyte count

90. In pernicious anaemia the following is significantly decreased in serum:

a. Iron
b. Both vitamin B12 and folic acid
c. Folic acid
d. Vitamin B12
e. All substrate, vitamin B12, folic acid and iron

91. One of the following is not associated with eosinophilia:

a. Parasitic infections
b. Neoplasia
c. Typhoid infection
d. Allergy
e. None of the above.

92. Blast crisis is a term usually to refer to a transformation:

a. Chronic myeloid leukaemia
b. Leukaemia lymphoma
c. Undifferentiated leukaemia
d. Chronic lymphocytic leukaemia
e. Leukaemia lymphoma syndrome.

93. In Kenya blood donor screening requires the following except:

a. Weight above 50kg
b. Disclosure of marital status
c. Breastfeeding females
d. Hb ≥ 12.5 g/dl
e. Age > 16 years

94. Anti-D within 72 hours of delivery is required in:

a. Rhesus D incompatibility
b. ABO incompatibility
c. Unknown incompatibility
d. Rhesus incompatibility
e. All of the above.

95. In the evaluation of one of the following template. Ivy's method is used

a. Coagulation
b. Fibrinolysis
c. Plasminogen
d. Anticoagulation
e. Blood vessel

96. INR, ration and index are expressions of which of the following tests

a. Koalin Cephalin Clotting Time (KCCT)
b. Activated Partial Thromboplastin time (APPT)
c. Prothrombin Time
d. Thrombin Clotting Time (TCT)
e. Fibrinogen titres

97. The following are characteristics of acute ITP except.

a. Common case of thrombocytopenia in childhood
b. May follow a viral infection spontaneous remission in more than 80% within a few weeks.
c. Most cases need no treatment.
d. Treatment of choice is platelets transfusion
e. Not found in adult

98. The following are features of Von Willebrands disease

a. Inherited as sex linked
b. Prothrombin test time prolonged
c. Bleeding time test is prolonged
d. Shortened Activated Partial Thromboplastin Time (APTT)
e. Thrombin Clotting Time is significantly prolonged.

99. The following test is not in the regularly performed coagulation screening tests.

a. Euglobulin Lysis test
b. Prothrombin test
c. Thrombin test
d. Bleeding time
e. Activated Partial Thromboplastin Time.

100. ABO compatibility is required for the following products

a. Fresh Frozen Plasma
b. Cryoprecipitate
c. Von Willbrands containing factor concentrate
d. Factor VIII concentrate
e. Factor IX concentrate.

101. Disseminated intravascular coagulopathy (DIC) is commonly a manifestation of a failure of :

a. Haemostatis
b. Kidney
c. Liver
d. Heart
e. Lung

102. Adhesion, aggregation, release reaction describe ability of:

a. Blood vessel
b. Platelet
c. Fibrinolysis
d. Anticoagulation
e. Coagulation system.

103. For most haematologic examinations which of the following blood samples is preferred.

a. Capillary
b. Venous
c. Arterial
d. Peripheral
e. Central

104. The following manoeuvres enhances haemoconcentration

a. Congestion
b. Non-use of tourniquet
c. Use of small gauge needle
d. Use of large gauge needle
e. None of the above

105. To avoid potential sources of infection, the following must be undertaken except:

a. Wearing of rubbers gloves
b. Prompt disposal of Syringe needle dressing etc
c. Resheathing of needle
d. Decontamination of any spillage
e. Contacting the health and hygiene team in case of spillage of blood

106. One of the following constitute is not a blood component.

a. White blood cells
b. Red blood cells
c. Platelets
d. Factor VIII concentrate
e. Fresh frozen plasma

107. A national blood transfusion establishment whose main function is to link the patient and the donor is

a. National blood transfusion centre
b. Regional blood transfusion centre
c. Blood bank
d. Blood transfusion unit
e. The hospital

108. Compatibility testing for routine transfusion include all the following except:

a. ABO and Rh D grouping
b. Antibody screening
c. Crossmatch
d. Kell, Duffy, other minor groups grouping
e. Anti-globulin/coombs tests

109. The young, sick, old should be considered for blood less than 5 days old due to one of the following. The increasing levels of one of the following stored blood.

a. Calcium
b. Potassium
c. Glucose
d. Sodium
e. Chloride

110. The haemolytic disease of the newborn in Kenya is usually due to

a. Rhesus incompatibility
b. Rhesus D incompatibility
c. ABO incompatibility
d. Unknown incompatibility
e. All of A, B, C

111. Vitamin K dependent factors include:

a. Factor V
b. Protein C & S
c. Antithrombin III
d. Factor IX
e. Factor VI

112. Seventy four year man is referred to Kenyatta National Hospital oncology unit. He is suspected to have Plasma cell abnormality. The first differentials is:

a. Plasma cell leukaemia
b. Plasma cytopenia
c. Multiple myeloma
d. Plasmacytosis of unknown cause
e. Reactive plasmacytoma

113. The investigation ESR result is:

a. Raised
b. Normal
c. Reduced
d. Unremarkable
e. Unnecessary

114. The investigations mandatory for diagnosis if he had a pathological fracture of the clavicle and extensive osteolytic lesions on x-ray examination do NOT include:

a. Bone marrow
b. Bence jones Protein
c. Serum electrophoresis
d. Haemoglobin electrophoresis
e. Total and differential proteins

115. A six year old patient has the following basic results; RBC $2.5x10^{12}$/L, WBC $1x10^{9}$/L, Plat $22x10^{9}$/L; The haematological interpretation on is that these are features of

a. Bone marrow failure
b. Acute leukaemia
c. Bleeding disorder
d. Systemic blood disease
e. Hypersplensim

116. One of the following is not a necessary investigations

a. Reticulocyte count
b. Bone marrow
c. Haemostatic screen
d. Blood film examination
e. WBC morphology

117. If the haematological examination of one of the specimens show over 30% blast, cells the diagnosis is :

a. Acute leukaemia
b. Chronic leukaemia
c. Reactive setting
d. Lymphoma
e. Marrow hyperplasia.

118. A 40 year old man is admitted with gross anaemia and 'pins and needles' sensation in the lower limbs. The most likely diagnosis is/are:

a. Haemolytic anaemia
b. Hookworm infestation
c. Pernicious anaemia
d. Iron-deficiency anaemia
e. Beri-beri

119. In an adult with mild jaundice, mild pallor and tipped spleen:

a. Serum direct and indirect bilirubin levels are likely to be elevated.

b. Urinary urobilinogen levels are likely to be normal
c. Haemoglobin electrophoresis is likely to show homozygous SS pattern
d. Direct and indirect Coomb's tests are of no clinical value.
e. A good coagulation screen should clinch the diagnosis

120. A 25 year old patient has general malaise and mild anorexia. Physical examination reveals mild pallor and slightly increased liver span. The spleen is enlarged and is palpable. The WBC count 85x109/L – neutrophils are 50%, myelocytes 10%, metamyelocytes 10%, neutrophil bands 8%, monocytes 5%, eosinophils 5% and lymphocytes 12%. Platelet count is $350x10^9$/L and haemoglobin 8g/dl. One of the following is not a feature.

a. Toxic granulation of neutrophils is prominent
b. A bone marrow aspirate is indicated
c. Blood film assessment is vital
d. Neutrophil alkaline phosphate score should be ascertained
e. Philadelphia chromosome studies before instituting therapy are vital if feasible.

121. Microcytes are features of the following conditions except

a. Iron deficiency anaemia
b. Thallassemia
c. Lead poisoning
d. Sideroblastic anaemia
e. Target cell disease

122. Which of A,B,C,D is not basis of classification of immunohaemolytic anaemia

a. Cold antibody
b. IgG mediated
c. Ig M mediated
d. Paroxys noctural haemoglobinuria (PNH)
e. Warm antibody

123. Which of A, B, C,D is the odd one out.

a. Disorders of permeability of membrane
b. Abnormal membrane lipid composition
c. Hereditary elliptocytosis
d. Hereditary spherocytosis
e. Defect in hexose monophosphate shunt pathway

124. In compatibility testing the blood is said to be compatible when

a. Agglutination is demonstrated
b. Both agglutination and haemolysis are demonstrated
c. Clear field demonstrated
d. Haemolysis is demonstrated.
e. No haemolysis and no agglutination.

125. Which of the following is NOT used in the differential diagnosis of causes of raised WBC count $100x10^9/L$?

a. Haemoglobin level
b. Neutrophil Alkaline phosphate score
c. Marrow cytogenetic
d. White cell morphology
e. Neutrophil granulation.

126. The characteristics of Acute ITP include:

a. Rare cause of thrombocytopenia
b. Often shows a viral infection
c. Spontaneous remission in more than 80% within a few weeks
d. Most cases need no treatment
e. Treatment of choice is platelet transfusion.

127. The following monoclonal gammopathies is composed of Ig M

a. Plasmacytoma
b. Waldenstrom's
c. Benign monoclonal
d. Lymphoma
e. Multiple myeloma

128. The following features characterize the primitive erythroblast formed during the 3rd week of human embryogenesis except:

a. Yolk sac form blood Islands
b. Islands from primitive vascular system
c. Central cells of the islands differentiate into yolk sac stem cells
d. Are the earliest haemoglobin synthesizing cells
e. Mature into erythrocytes

129. A stem cell is best described as a