05 haematology mcqs - this is a clinical hematology multiple choice questions.

Materials Technology (Texas Tech University)

HAEMATOLOGY

1. **Causes spurious decrease in MCV**
   a. Cryofibrinogen
   b. hyperglycemia
   c. autoagglutination
   d. high WBC ct
   e. reduced red cell deformability

2. **When the entire CBC is suppressed due to either anemia, infection, or hemorrhage is called?**
   a. Erythroplasia
   b. Thrombocytopenia
   c. Pancytopenia
   d. Leukopenia

3. **Total RBC count for Women is?**
   a. 4.4 6
   b. 4.25
   c. 4.05.0
   d. 4.25.2

4. **Total RBC for men?**
   a. 4.05.0a.
   b. 4.66.0
   c. 4.26.5
   d. 4.06.0

5. **What is the major metabolically available storage form of iron in the body?**
   a. Hemosiderin
   b. Ferritin
   c. Transferrin
   d. Hemoglobin

6. **The best source of active bone marrow from a 20yearold would be:**
   a. Iliac Crest (hip)
   b. Femur (thigh)
   c. Distal radius (forearm)
   d. Tibia (shin)

7. **Laboratory Studies: Red Cell Indices: Determination of relative size of RBC. 8298fl**
   a. MCH
   b. MCV
   c. MCHC

8. **Laboratory Studies: Red Cell Indices: Measurement of average weight of Hb/RBC. 2733pg**
   a. MCH
   b. MCV
   c. MCHC

9. **Laboratory Studies: Red Cell Indices: Evaluation of RBC saturation with Hb. 3236%**
   a. MCV
   b. MCH
   c. MCHC

10. **There are 3 classifications of Anemia. What are they?**
    a. In adequate production of Hb
    b. Decreased RBC production
    c. Increased Erythrocyte destruction
    d. Blood loss

11. **Vitamin B12 and folic have the similar adverse effects, but what separates one form the other?**
    a. Glossitis
    b. No neurological symptoms in folic acid
    c. muscle wasting
    d. Dizziness

12. **Folic acid therapy can cause sickle cell anemia**
    a. True
    b. False

13. **Both vitamin B12 AND iron have drug interactions with which of the following drugs?**
    a. PPI, H2 blockers
    b. Methyldopa
    c. Metformin

14. **Hydroxyurea increases hemoglobin production and decreases reticulocyte cells.**
    a. True
    b. False

15. **Hydroxyurea:**
    a. decreases nitric oxide
    b. increases neutrophil and monocytes
    c. inhibits DNA synthesis by acting as a ribonucleotide reductase inhibitor

16. **Hydroxyurea increases the serum uric acid levels.**
    a. True
    b. False

17. **Decitabine increases the fetal hemoglobin production by inducing methylation of DNA and thus prevents the switch from gamma to betaglobinproduction.**
    a. True
    b. False

18. **Hypocupremia is seen in**
    a. osetoporosis, nephrotic disease
    b. sprue, cliac disease
    c. cardiovascular disease, colon cancer
    d. A and B
    e. B and C
    f. All of the above

19. **Wilsons disease can cause liver problems**
    a. True
    b. False

20. **What are the treatment options for wilson's disease?**
    a. Pencillamine
    b. Riboflavin
    c. Trientine
    d. Potassium disulfide
    e. Zinc
    f. A, B and C

g. A, C, and D
h. A, C, D, and E

21. Aplasia can occur because of riboflavin deficiency?
a. True
b. False

22. Angular stomatitis.cheilosis is a symptom of vitamin B12 deficiency?
a. True
b. False

23. Antimalarial drugs and high dose birth control will increase riboflavin.
a. True
b. False

24. Which test can be used to detect hemolytic anemia?
a. Coombs test
b. Genetic testing
c. Peripheral blood smear (PBS)
d. Schilling test

25. Which anemia is classified as not being able to use iron properly to synthesize hemoglobin because of ainherited cause.
a. Iron deficiency anemia
b. hypochromic anemia
c. aplastic anemia

26. Apalstic anemia can be induced by drugs such as Litium, acetazolamide and aspirtin
a. True
b. False

27. This fatal disorder results from clot/thrombus formation in the blood ciruclation
a. thromboembolism
b. DVT
c. PAD
d. Pulmonary embolism
e. All of the above

28. Homan's sign is classified as pain behind the knee
a. True
b. False

29. Patients that are sensitive to aspirin can take:
a. Sulfinpyrazone
b. Clopidogrel
c. Ticlopidine
d. 1 and 2
e. 2 and 3

30. What is the life span of RBC
a. 120
b. 100
c. 200
d. 80

31. This drug can potentiate the effect of prostacyclins to antagonize platelet stickiness and thereforedecreases platelet adhesion to thrombogenic surfaces.
a. Sulfinpyrazone
b. Dipyridamole
c. ticlopidine

32. Which drug can be given as a prophylaxis for cadriovascular effects?

1. Ticlopidine

2. Clopidogrel

3. dipyridamol
a. all
b. 1 and 2
c. 1 and 3
d. 2 and 3

33. Which drug can increase intracellular levels of cAMP by inhibiting cyclic nucleotide phosphodiesterase?

1. Sildenafil

2. Ticlopidine

3. Clopidogrel

4. dipyridamol
a. 1, 3, 4
b. 1, 2 , 3
c. 1, 4

34. Warfarin should be used with caution in the following:
a. Alcoholic liver disease
b. Gastrointestinal bleeding
c. recent neurosugery
d. Liver impairment

35. Isozymes of 2C can greatly effect warfarin
a. True
b. False

36. absolute lymphocytosis (>5000/mm^3) without adenopathy, hepatosplenomegaly, anemia,thrombocytopenia is what stage in CLL prognosis ScoringRaiStaging System?
a. Stage 0
b. Stage I
c. Stage II
d. Stage III
e. Stage IV

37. Conventional treatment is _____ for Rai stage II
a. Antibiotics
b. chemotherapy
c. Antivirals
d. rest

38. In patients with low numbers of neoplastic cells, sometimes due to treatment, PCR to amplify DNA can improve sensitivity, and detect signs of relapse.
a. True
b. False

39. Chronic lymphocytic leukemia is most common leukemia in what kind of people? Slide 4
a. young adults
b. older adults

40. absolute lymphocytosis and thrombocytopenia(< 100,000/mm^3) with or without lymphadenopathy,hepatomegaly, splenomegaly, or anemia is what stage in CLL prognosis ScoringRaiStaging System?
a. Stage 0

b. Stage I
c. Stage II
d. Stage III
e. Stage IV

41. Chronic Lymphocytic Leukemia is characterized by peripheral blood and bone marrow _____.
a. lymphocytopenia
b. lymphocytosis

42. Chronic Lymphocytic Leukemia is characterized by gradual accumulation of small mature _____ cells.
a. T
b. B
c. NK

43. Which of the following is the most mature normoblast?
a. Orthochromic Normoblast
b. Basophilic Normoblast
c. Pronormoblast
d. Polychromatic Normoblast

44. absolute lymphocytosis with either hepatomegaly or splenomegaly with or without lymphadenopathy is what stage in CLL prognosis ScoringRai Staging System?
a. Stage 0
b. Stage I
c. Stage II
d. Stage III
e. Stage IV

45. absolute lymphocytosis without lymphadenopathy without hepatosplenomegaly, anemia, orthrombocytopenia is what stage in CLL prognosis ScoringRaiStaging System?
a. Stage 0
b. Stage I
c. Stage II
d. Stage III
e. Stage IV

46. INChronicLymphocyticLeukemiatheLymphocyteappearance: small or slightly larger than normal,hypercondensed(almost _____ appearing. nuclear chromatin patter, bare nuclei called "smudge cells" arecommon.
a. soccerball
b. basketball
c. football
d. tennisball

47. Which of the following forms of Hb molecule has the lowest affinity for oxygen?
a. Tense
b. Relaxed
c. Arterial
d. Venous

48. What is the recommended cleaner for removing all oil from objective lens?
a. 70 % alcohol or lens cleaner
b. Xylene
c. Water
d. Benzene

49. Intravascular hemolysis is the result of trauma to RBCs while in the circulation
a. True
b. False

50. A 1:20 dilution was made in a unopette, with glacial acetic acid as the diluent. The four corner squares on BOTH sides of the hemacytometer are counted for a total of 100 cells. What is the total WBC (x10^9/L.?
a. 0.25
b. 2.5
c. 5
d. 10

51. The shape of a cell is maintained by which of the following?
a. Microtubules
b. Spindle Fibers
c. Ribosomes
d. Centrioles

52. At which month of fetal development does the bone marrow ecome the primary site of hematopoiesis??
a. 2nd
b. 5th
c. End of 6th month
d. End of 7th month

53. Which types of cells develop from yolk sacs (Mesoblastic phase)?
a. Hb F, Hg A2, and Hg A
b. Gower 1 and Gower 2 Hgb
c. Portland Hgb
d. Only Erythroblasts

54. Normal Adult Hb A contains the following polypeptide chains:
a. alpha and beta
b. alpha and epsilon
c. alpha and delta
d. alpha and brotherton

55. Allergic reactions are frequently associated with an increase in the prescence of :
a. Lymphocytes
b. Neutrophils
c. Monocytes
d. Eosinophils

56. Lipid exchange between the RBC membrane and the plasma occurs:
a. To replace lost lipids in the membrane
b. To provide a mechanism for excretion of lipidsoluble RBC waste products
c. To ensure symmetry between the composition of the interior and exterior lipid layers
d. To provide lipidsoluble nutrients to the RBC

57. After the microscope has been adjusted for Kohler illumination, light intensity should never be regulatedby using the...
a. Rheostat
b. Neutral density filter
c. Kohler magnifier
d. Condenser

58. Which of the followong types of microscopy is valuable in the identification of crystals that are able torotate light?

a. Compound brightfield
b. Darkfield
c. Polarizing
d. Phasecontrast

59. During the Medullary Phase of hematopoietic development, which bone is the first to showhematopoietic activity?

a. Femur
b. Iliac Crest
c. Skull
d. Skull
e. Clavicle

60. Given the following values, calculate the RPI Observed reticulocyte count 6%Hct30%

a. 2
b. 3
c. 4
d. 5

61. The lipids of the RBC membrane are arranged:

a. In chains beneath a protein exoskeleton
b. So that the hydrophobic portions are facing the plasma
c. In a hexagonal lattice
d. In two layers that are not symmetric in composition

62. The hexose monophosphate pathway activity increases the RBC source of

a. Glucose and lactic acid
b. 2,3BPG and methemoglobin
c. NADPH and reduced glutathione
d. ATP and other purine metabolites

63. Which single feature of normal RBC's is most responsible for limiting their life span?

a. Loss of mitochondria
b. Increased flexibility of the cell membrane
c. Reduction of Hb iron
d. Loss of nucleus

64. In the Iron cycle, the transferrin receptor carries:

a. Iron out of duodenal cells from the intestinal lumen
b. Iron out of duodenal cells into the plasma
c. transferrinbound iron in the plasma
d. transferrinbound iron into erythrocytes

65. A multilineage cytokine among the ILs is:

a. IL1
b. IL2
c. IL3
d. IL4

66. Which of the following cells may develop in sites other than the bone marrow?

a. Monocyte
b. Lymphocyte
c. Megakaryocyte
d. Neutrophil

67. The acceptable range for hemoglobin values on a control sample is 13 + or 0.4g/dL. A hemoglobindetermination is performed five times in succession on the same control sample. The results are (in g/dL. 1212.3, 12, 12.2, and 12.1) These results are:

a. Precise, but not accurate
b. Both accurate and precise
c. Accurate, but not precise
d. Neither accurate nor precise

68. The layer of the erythrocyte membrane that is largely responsible for the shape, structure, and deformability of the cell is the:

a. Integral protein
b. Exterior lipid
c. Peripheral protein
d. Interior lipid

69. During midfetal life, the primary source of blood cells is the:

a. Bone marrow
b. Spleen
c. Lymph Nodes
d. Liver

70. In the bone marrow, RBC precursors are located:

a. In the center of the hematopoietic cords
b. Adjacent to megakaryocytes along the adventitial cell lining
c. Surrounding fat cells in apoptotic islands
d. Surrounding macrophages near the sinus membrane

71. Which of the following gathers, organizes, and directs light through the specimen?

a. Ocular
b. Objective lens
c. Condenser
d. Optical Tube

72. How are the globin chains genes arranged? Note: a means alpha, B means beta

a. With a genes and B genes on the same chromosome including two a genes and two B genes
b. With a genes and B genes on seperate chromosomes, two a genes on one chromosome and one B gene on a different chromosome
c. With a genes and B genes on the same chromosome includingfour a genes and four B genes
d. With a genes and B genes on separate chromosomes foura genes on one chromosome and two B genes on a different chromosome

73. The maximum number of erythrocytes generated by one Multipotential Stem Cell is:

a. 8
b. 1
c. 12
a. 16

74. What is the distribution of normal Hb in adults?

a. 8090%
Hb A, 510%
Hb A2, 15%
Hb F
b. >95% Hb A, <3.5 % Hb A2, <12%
Hb F

75. The most frequent cause of needle punctures is:

a. Patient movement during venipuncture
b. Improper disposal of phlebotomy equipment
c. Inattention during removal of needle after venipuncture
d. Failure to attach needle firmly to tube holder

76. Iron is incorporated into the heme molecule in which of the following forms:

a. Ferro
b. Ferrous
c. Ferric
d. Apoferritin

77. The most important practice in preventing the spread of disease is:

a. Wearing masks during patient contact
b. Proper handwashing
c. Wearing disposable lab coats
d. Identifying specimens from known or suspected HIV and HBV patients with a red label

78. Which of the following would correlate with an elevated ESR value?

a. Osteoarthritis
b. Polycythemia
c. Decreased globulins
d. Inflammation

79. The enzyme deficiency in the EmbdenMeyerhofpathway that is responsible for most cases ofnonspherocytic hemolytic anemia is:

a. Hexokinase
b. Phosphotriptokinase
c. Pyruvate Kinase
d. Glyceraldehyde 3Phosphate

80. The most common type of protein found in the cell membrane is:

a. Lipoprotein
b. Mucoprotein
c. Glycoprotein
d. Nucleoprotein

81. A woman with BO positive blood and her partner with AB positive blood have achild together. Which of the following cannot be the child's blood type?

a. AB positive
b. BB positive
c. AO positive
d. AA positive
e. BB negative

81. A 24-year-old man is involved in a road traffic accident and rushed to accident andmergency accompanied by his mother who was unharmed. An examination showssevere abdominal injuries, peripheral cyanosis and cold extremities. The doctor oncall decides a blood transfusion is necessary. The mother thinks the patient is bloodgroup B negative but is unsure. The most appropriate blood group to give thepatient is?

a. Group O positive blood
b. Group B positive blood
c. Group B negative blood
d. Group O negative blood
e. Group A negative blood

83. A 16-year-old boy presents to his GP complaining of nosebleeds and bleeding afterbrushing his teeth. He is unsure of how long this has been occurring but decided toseek advice after having to continually excuse himself from lessons. On examinationyou notice he has some skin bruises. A blood test shows a prolonged bleeding timeand activated partial thromboplastin time (APTT), while platelet count andprothrombin times are all normal. The most likely diagnosis is:

a. Von Willebrand disease
b. Liver disease
c. Disseminated intravascular coagulation
d. Congenital afibrinogenaemia
e. Glanzmann's thrombasthenia

84. A 22-year-old Caucasian woman presents with a 1-day history of a painful rightleg which is erythematous on appearance and tender on palpation. She states that she has had this problem many times in the last few years and her family has alsosuffered from similar problems. Her grandmother died of a pulmonary embolism. The most likely diagnosis is:

a. Antithrombin deficiency
b. Factor V Leiden mutation
c. Protein S deficiency
d. Lupus anticoagulant
e. Protein C deficiency

85. A 44-year-old Asian female presents with a two-month history of shortness ofbreath and lethargy. She denies any intolerance to the cold or any changes in herweight and on examination appears slightly pale. She states that she has recentlybecome a vegetarian. A blood film shows the presence of elliptocytes and bloodresults show the following: Haemoglobin 9.9 g/dL, Mean cell volume (MCV) 75 fL, Ferritin Low, The most likely diagnosis is:

a. Iron deficiency anaemia
b. Sideroblastic anaemia
c. Anaemia of chronic disease
d. Thalassaemia trait
e. Hereditary elliptocytosis

86. A 47-year-old teacher complains of difficulty maintaining her concentration atwork teaching secondary school children. She states that over the last four monthsshe has become increasingly tired and easily fatigued. She has noticed it hasbecome more difficult for her to lift books, rise from her chair and she has alsonoticed a tingling sensation in her fingers. Examination shows a positive babinskisign and absent reflexes. A blood test reveals the following: Haemoglobin 10 g/dL, MCV 103 fL, The most likely diagnosis is:

a. Hypothyroidism
b. Vitamin B12 deficiency
c. Folic acid deficiency
d. Liver disease
e. Alcohol toxicity

87. A 55-year-old man complains of a 4-week history of general malaise and fatigue,he has also noticed his trousers have become more loose fitting. A blood test showsthe following results: Haemoglobin 12 g/dL, MCV 90 fL, Platelet count 250 × 109/L, WBC 10 109/L, Serum iron 10 mol/L, Total iron-binding capacity 40 ìmol/L, Serum ferritin 160 g/L. The most likely diagnosis is:

a. Thalassaemia
b. Iron deficiency anaemia
c. Anaemia of chronic disease
d. Macrocytic anaemia
e. Aplastic anaemia

88. **A 43-year-old woman suffers from Crohn's disease. A blood test shows thefollowing results: Haemoglobin 10.5 g/dL, MCV 120 fL, Platelet count 300× 109/L. The most likely diagnosis is:**
   a. Vitamin B12 deficiency
   b. Iron deficiency
   c. Hypothyroidism
   d. Folic acid deficiency
   e. Anaemia of chronic disease

89. **A 45-year-old man collapses at home and is brought to he has a fever at 39.5°C and blood pressure is 90/60 mmHg, although he is in a lucidstate. Bruises can be seen on his skin which he remembers being present before hefell. Blood tests show the patient to have a normocytic anaemia with a low plateletcount and increased fibrin split products. The most likely diagnosis is:**
   a. Warm autoimmune haemolytic anaemia
   b. Cold autoimmune haemolytic anaemia
   c. Paroxysmal nocturnal haemoglobinuria
   d. Disseminated intravascular coagulation
   e. Thalassaemia minor

90. **A 23-year-old Asian man presents to his GP complaining of shortness of breath following exercise. He has always been a little unfit and decided to start going tothe gym but noticed that even after 4 weeks he is still quite short of breath. He denies any coughing or wheezing and on examination you notice mild pallor but the patient says he has always been slightly pale in colour. Investigation results are given below: Haemoglobin 12 g/dL, MCV 70 fL, Serum iron 14 umol/L, Ferritin 60 ug/L, Transferrin saturation 35 per cent, Mean cell haemoglobin 22 pg, Haemoglobin electrophoresis HbA2 increased. The most likely diagnosis is:**
   a. á thalassaemia trait
   b. Anaemia of chronic disease
   c. â thalassaemia trait
   d. Haemoglobin H disease
   e. Iron deficiency anaemia

91. **A 29-year-old woman complains of a 1-week history of weakness and malaise, she has recently become a vegetarian and eats mostly green vegetables and drinks lots of tea during the day. She is apyrexial and has a C-reactive protein (CRP) <5. You suspect an abnormality of the patient's iron stores. What is the most appropriateinvestigation to determine iron store levels?**
   a. Bone marrow biopsy
   b. Serum ferritin
   c. Serum transferrin
   d. Total iron binding capacity
   e. Serum iron

92. **A 60-year-old man presents with abdominal pain and a cupful of haematemesis.On examination he is noted to have ascites, hepatomegaly and a very enlargedspleen extending to the right iliac fossa. His initial blood tests reveal aleukoerythroblastic picture with a haemoglobin of 8, white cell count (WCC) of 3 and platelets of 120. A diagnosis of myelofibrosis is made. What is most likely tobe seen on the peripheral blood smear?**
   a. Schistocytosis
   b. Sickle cells
   c. Spherocytes
   d. Dacrocytes
   e. Target cells

93. **A 65-year-old woman suffers significant bleeding during a difficult bowel resectionand is prescribed three units of blood after the operation is completed. It is the firsttime she has required a blood transfusion and her details are checked carefully.Approximately 4 hours after the transfusion the patient feels acutely unwell andcomplains of fever, chills and a dry cough. Blood pressure is 110/80 mmHg, temperature 38°C and oxygen saturation is 94 per cent. The most likely diagnosis is:**
   a. Immediate haemolytic transfusion reaction
   b. Febrile non-haemolytic transfusion reaction
   c. Delayed haemolytic transfusion reaction
   d. IgA deficiency
   e. Transfusion-related lung injury

94. **A 52-year-old woman presents complaining of a two-month history of increasing fatigue and numbness in both of her arms and legs. She lives at home with her husband and has found it difficult coping with the daily activities of living. She suffers from hypothyroidism which is well controlled with thyroid replacement medication. A peripheral blood smear shows hypersegmented neutrophils. A blood test reveals the following: Haemoglobin 10 g/dL, Mean corpuscular volume 110 fL, Platelets 150 × 109/L. Liver function tests: ALT 25 IU/L, AST 27 IU/L, GGT 22 IU/L, ALP 100 IU/L, Urea 5 mmol/L, Creatinine 100 ìmol/L. The most likely diagnosis is:**
   a. Thrombotic thrombocytopenic purpura
   b. Iron deficiency
   c. Folic acid deficiency
   d. Liver disease
   e. Pernicious anaemia

95. **During a busy ward round you are asked to visit a patient the consultant has not had an opportunity to see. The only details you are given are that the patient is female and was admitted the previous day with bleeding abnormalities, you are given the results of her blood investigations: Prothrombin time Unaffected, Partial thromboplastin time Prolonged, Bleeding time Prolonged, Platelet count Unaffected. What is the most likely diagnosis?**
   a. Factor V deficiency
   b. Warfarin therapy
   c. Glanzmann's thrombasthenia
   d. Bernard Soulier syndrome
   e. Von Willbrand disease

96. **A 14-year-old girl is brought to clinic by her parents who have been worried about a fever the patient has had for the last week. The patient looks pale and unwell. Blood tests reveal a neutropenia with normal red blood counts (RBCs) and platelets. A bone marrow exam reveals no abnormalities. The patient has been otherwise fit and well. There is no organomegaly or lymphadenopathy. The most likely diagnosis is:**
   a. Acute myeloid leukaemia
   b. Aplastic anaemia
   c. Acute lymphoblastic leukaemia
   d. Bacterial infection
   e. Thrombotic thrombocytopenic purpura

97. **A 65-year-old man presents with a chronic history of headaches and occasional dizziness. He hesitantly mentions that he experiences severe pruritus, especially after hot showers and baths. Blood pressure is 160/85 mmHg. A full blood count (FBC) reveals a haemoglobin of 20 g/dL, MCV of 94 fL, platelet count of 470 × 109/L and WBC count of 7.8 × 109/L. The most likely diagnosis is:**
   a. Polycythemia vera
   b. Idiopathic erythrocytosis

c. Essential thrombocythaemia
d. Myelofibrosis
e. Chronic myeloid leukaemia

98. A 29-year-old woman complains of tiredness, especially during activity. On examination the patient appears pale. Auer rods and schistocytes can be seen on peripheral blood smear. The patient is referred for a bone marrow biopsy and the extracted cells are sent for cytogenetic analysis. The most likely results are:

a. t(8:21)
b. t(15;17)
c. t(9:22)
d. t(14;18)
e. t(8;14)

99. In which of the following dieases is a massive splenomegaly not a characteristic feature?

a. Infectious mononucleosis
b. Thalassaemia
c. Chronic myeloid leukaemia
d. Kala-azar
e. Polycythaemia rubra vera

100. A 27-year-old man presents with increasing tiredness and shortness of breath. A macrocytic anaemia with reticulocytes is discovered on blood tests and smear. Genetic analysis reveals the patient has glucose-6-phosphate dehydrogenase deficiency. What cell type is most likely to have been seen on the blood smear?

a. Target cells
b. Pencil cells
c. Spherocytes
d. Elliptocytes
e. Schistocytes

101. A 33-year-old man travels to South Africa to take part in a safari. On arriving, the patient takes his antimalarial tablets. A few days into his course he becomes ill complaining of shortness of breath, pallor and bloody urine. Blood tests reveal anaemia and reduced haematocrit, while a blood smear shows the presence of Heinz bodies. The most likely diagnosis is:

a. Hereditary elliptocytosis
b. Glucose-6-phosphate dehydrogenase deficiency
c. Hereditary spherocytosis
d. Autoimmune haemolytic anaemia
e. Microangiopathic haemolytic anaemia

102. An 18-year-old African man presents with worries about his general health stating that hypertension and sickle cell anaemia are present in his family history. The patient denies any shortness of breath, chest pain, digit or limb changes. Blood pressure is 124/77 mmHg. What test would be appropriate to investigate sickle cell anaemia?

a. Ham's test
b. Coombs' test
c. Schilling test
d. Metabisulfite test
e. Osmotic fragility test

103. A young patient presents with features of anaemia, neutropenia and thrombocytopenia. A large number of blasts are present on bone marrow biopsy. Which investigation would help differentiate between acute myeloid leukaemia (AML) and acute lymphoblastic leukaemia (ALL)?

a. Myeloperoxidase stain
b. Sudan black B
c. Tartrate-resistant acid phosphatase stain
d. Leukocyte alkaline phosphatase
e. Auramine O stain

104. A 47-year-old woman presents complaining of dark stools and painful fingers on both hands. She appears plethoric and complains of severe itching, often when she is washing. A large liver and spleen is palpable. You suspect features of polycythaemia rubra vera and measure red cell mass and erythropoietin levels among other tests. Which of the following is likely to be most accurate in this patient?

a. Low erythropoietin and low red cell mass
b. Normal erythropoietin and normal red cell mass
c. Raised erythropoietin and low red cell mass
d. Raised erythropoietin and raised red cell mass
e. Low erythropoietin and raised red cell mass

105. A 29-year-old woman presents complaining of shortness of breath, especially when walking up stairs. She is starting to struggle with yoga classes, which were never a problem before. She does not suffer from any medical conditions and takes no regular medication. On examination there is pallor, heart rate is 90 and blood pressure 119/79 mmHg. The patient mentions that she has recently become a vegetarian and in the morning only has time for tea before heading to work. Which of the following would you expect to be increased in this patient?

a. Myoglobin
b. Ferritin
c. Haemoglobin
d. Serum iron
e. Transferrin

106. A 65-year-old man presents with a chronic history of malaise, shortness of breath and paraesthesia in his hands. He appears tired and pale while speaking and on examination his heart rate is 115, respiratory rate 16. A Schillings test is positive while blood tests reveal a macrocytic anaemia and a Coombs test is negative. The

most likely diagnosis is:

a. Iron deficiency anaemia
b. Haemorrhage
c. Anaemia of chronic disease
d. Pernicious anaemia
e. Autoimmune haemolytic anaemia

107. A 47-year-old woman presents to clinic concerned about her recent ill health. She has noticed over the last three months that she has been suffering from headaches, fatigue and recurrent infections. She notes she has rarely been to the doctor before and otherwise leads a healthy lifestyle. She decided to see a doctor when she noticed petechial rashes appearing on her arms. On examination there is no organomegaly and blood tests reveal an MCV of 105, a pancytopenia with the bone marrow appearing hypocellular on biopsy.

a. Chronic myeloid leukaemia
b. Myeloproliferative disorder
c. Aplastic anaemia
d. Iron deficiency anaemia
e. Acute lymphoblastic anaemia

108. A 65-year-old man presents to you reporting he has become increasingly worried about his lack of energy in the last 2 weeks. He mentions he has been increasingly tired, sleeping for long periods and has suffered from fevers unresponsive to paracetamol. He became increasingly worried when he noticed bleeding originating from his gums. A blood film shows auer rods, hypogranular neutrophils and stains with

Sudan black B. The most likely diagnosis is:

a. Acute lymphoblastic leukaemia
b. DiGeorge syndrome
c. Disseminated intravascular coagulation
d. Acute myeloid leukaemia
e. Afibrinogenaemia

109. A 70-year-old woman complains of tiredness, fatigue and weight loss. Blood tests reveal an elevated WCC and on examination splenomegaly is palpated. Cytogenetics are positive for the Philadelphia chromosome and the patient is diagnosed with chronic myeloid leukaemia. The most appropriate treatment is:

a. Hydroxycarbamide
b. Imatinib
c. Venesection
d. Stem cell transplant
e. Dasatinib

110. A 27-year-old woman who suffers from rheumatic mitral stenosis develops atrial fibrillation. She is placed on warfarin therapy. What is the most appropriate target international normalized raio (INR) range?

a. <1.0
b. 1.0–2.0
c. 2.0–3.0
d. 3.0–4.0
e. >5.0

111. A 70-year-old woman complains of a dull pain in her lower back, especially when bending forwards to lift things. She presents after a severe episode in the last 2 days. An x-ray reveals a lumbar compression fracture. Blood tests show a normocytic anaemia and urine electrophoresis reveals a monoclonal gammopathy.

A diagnosis of multiple myeloma is made. Which of the following is not a recognized cause of multiple myeloma?

a. High-dose radiation
b. Human herpes virus-8 (HHV-8)
c. HIV
d. Herbecides and insecticides
e. Hereditary

112. A 44-year-old woman presents with recurrent fever, pallor, malaise and shortness of breath. She has noticed a petechial rash on her skin and small bruises on her arms. A blood test reveals a pancytopenia. During examination, you palpate a large spleen. Which investigation would differentiate between hypersplenism and aplastic anaemia?

a. Reticulocyte test
b. Direct Coombs test
c. Metabisulfite test
d. Ham's test
e. Osmotic fragility test

113. A 66-year-old man presents complaining of a three-month history of weakness, tingling in the limbs and a sore tongue. The patient notes an undesired 5 kg weight loss over 2 weeks. A peripheral blood smear shows a macrocytic anaemia, a Schilling test shows impaired vitamin B12 absorption and a diagnosis of pernicious anaemia is made. Which of the following antibodies is most closely associated with pernicious anaemia?

a. Anti-mitochondrial antibodies
b. Anti-intrinsic factor antibodies
c. Anti-gliadin antibodies
d. Anti-centromere antibodies
e. Anti-smooth muscle antibodies

114. A 5-year-old girl presents with her parents who have become concerned about the small petechiae and ecchymoses on her skin. An abdominal examination reveals hepatosplenomegaly. You suspect an acute leukaemia. The most appropriate initial investigation for diagnosis is:

a. Chromosomal analysis of bone marrow cells
b. Cytochemical analysis of bone marrow cells
c. Direct microscopy of bone marrow cells
d. Electron microscopy
e. Flow cytometry

115. A 51-year-old man complains of severe, diffuse back pain. An x-ray finds several lytic lesions in the vertebra alongside hypercalcaemia. Bence–Jones protein is detected in the urine. What is a Bence–Jones protein?

a. IgG antibody
b. IgA antibody
c. IgE antibody
d. Light chain
e. IgM antibody

116. Hand foot Syndrome is related to which of the following?

a. Tietz syndrome
b. Hypertrophic osteoarthritis
c. Sickle cell disease
d. Syringomyelia

117. Agranulocytosis occurs due to intake of :

a. Olanzapine
a. Chloromazine
b. Clozapine
c. Risperidone

118. Omalizumab is used in the treatment of :

a. ITP
b. Small cell lung cancer
c. Bronchial Asthla
d. GLUT 6

119. Packed cells are constructed by

a. Filtration
b. Centrifugation
c. Precipitation
d. Sedimentation

120. The phildelphia chromosome is classically associated with which of the following

a. CLL
b. CML
c. Burkits lymphoma
d. Hairy cell leukaemia

121. The response to iron administration would be earliest seen by

a. Increased TIBC
b. Increased haemoglobin
c. Reticulocytosis
d. Increased hematocrit

122. X linked inheritance is seen in all of the following except

a. Fabry's disease
b. G6PD deficiency
c. Myotonic dystrophy
d. Heamophilia A

Haematology - Answers

1. a
2. c
3. c
4. b
5. b
6. a
7. b
8. b
9. c
10. a
11. b
12. b
13. a
14. a
15. c
16. a
17. b
18. f
19. a
20. h
21. a
22. b
23. b
24. a
25. b
26. a
27. e
28. a
29. e
30. a
31. b
32. d
33. c
34. d
35. a
36. a
37. b
38. a
39. b
40. e
41. b
42. b
43. a
44. c
45. b
46. a
47. a
48. a
49. a
50. b
51. a
52. c
53. d
54. a
55. d
56. a
57. d
58. c
59. d
60. a
61. d
62. c
63. d
64. d
65. a
66. b
67. a
68. c
69. d
70. d
71. c
72. b
73. d
74. b
75. b
76. b
77. b
78. d
79. c
80. c
81. d
81. d
83. a
84. b
85. a
86. b
87. c
88. a
89. d
90. c
91. b
92. d
93. e
94. e
95. e
96. d
97. a
98. b
99. a
100. e
101. b
102. d
103. c
104. e
105. e
106. d
107. c
108. d
109. b
110. c
111. e
112. a
113. b
114. c
115. d
116. c
117. c
118. a
119. d
120. b
121. c
122. c