



BAU-Medicine

## HLS mid-final

### Anatomy:

**1) Which of the following hematopoietic cells will develop into granulocyte :**

- a. Megakaryocyte
- b. Promonocyte
- c. Reticulocyte
- d. Myelocyte
- e. Polymorphocyte

Ans: d

**2) highest type of WBC is ..... and the least type is .....**

- a. lymphocyte /monocyte
- b. lymphocyte/eosinophils
- c. neutrophils /lymphocytes
- d. neutrophils/ monocytes
- e. neutrophils / basophils

Ans: e

**3) which of the following structures related to lymph node considered the last structure for lymph to pass through ?**

- a. capsule
- b. medulla
- c. outer cortex
- d. afferent vessels
- e. inner cortex

Ans: b

**4) Which of the following blood cells contains acidophilic large granules?**

- a. Eosinophil.
- b. Neutrophil.
- c. Erythrocytes.
- d. Basophils.
- e. T lymphocyte.

Ans: a

**5) Which of the following characterizes lymph in lacteals:**

- a. RBC.
- b. WBC.
- c. Plasma.
- d. Proteins.
- e. Lipids.

Ans: e

**6) Which of the following lymphatic structures is the first to drain lymph in the abdomen?**

- a. Left lymphatic duct.
- b. Brachiocephalic vein.
- c. Inguinal trunk.
- d. Right lymphatic duct.
- e. Subclavian trunk.

Ans: a

**7) Which of the following cells is the least differentiated one in erythrocyte formation cascade ?**

- a. Polychromatic erythroblast.
- b. Reticulocyte
- c. Basophilic erythroblast.
- d. Orthochromatophilic erythroblast.
- e. Proerythroblast.

Ans: e

**8) Which of the following blood cells can be distinguished by the presence of round dark nucleus that occupy most of the cell?**

- a. Neutrophil.
- b. Monocytes.
- c. Lymphocytes.
- d. Basophils.
- e. Eosinophils.

Ans: c

**9) Which of the following structures is found in white pulp?**

- a. Periarterial macrophage sheath.
- b. Periarterial lymphatic sheath.
- c. Sinuses.
- d. Cords of bilroth.
- e. Marginal zone.

Ans: b

**10) Which of the followings pair both secrete heparin, histamine and serotonin.**

- a. Plasma cells and eosinophil.
- b. Monocytes and eosinophil.
- c. Mast cells and plasma cells.
- d. Basophil and eosinophil.
- e. Mast cells and basophil.

Ans: e

**Physiology:**

**11) Which of the following is not stimulant to increase erythropoietin secretion:**

- a. Androgen.
- b. Decrease reticulocytes in the blood.
- c. Decrease hemoglobin concentration.
- d. Alkalosis.
- e. Catecholamine.

Ans: b

**12) Which of the following types of porphyrin is physiologically important in human:**

- a. Type IV porphyrin
- b. Type III porphyrin.
- c. Type II porphyrin.
- d. Type I porphyrin.

Ans: b

**13) Serum characterized by:**

- a. It contains serotonin release from platelet during clotting.
- b. It contains platelet after blood clotting.
- c. It can be removed by lymphatic system.
- d. It has minimal fibrinogen.
- e. It can clot.

Ans: a

**14) Which of the followings is innate immunity:**

- a. T cells .
- b. Memory cells.
- c. B cells.
- d. Lymphocytes killer.
- e. Antibodies.

Ans: d

**15) Which of the followings blood group has no antigen in the blood:**

- a. ABRh+
- b. ORh-

- c. ARh+
- d. ABRh-
- e. AB

Ans: b

**16) CD cells characterized by all the followings except:**

- a. They are two types CD4 and CD8.
- b. Their ratio CD4/CD8 monitor immunity state system of the body.
- c. They are special type of T cells.
- d. Increase their ratio CD4/CD8 more than 4 indicate decrease immunity.
- e. CD4 is helper T cell and CD8 is T killer cells.

Ans: d

**17) Old RBC mostly they develop high:**

- a. Membrane lipids.
- b. Enzyme activity.
- c. Metabolic activity.
- d. ATP.
- e. Rigid membrane.

Ans: e

**18) The final common pathway for extrinsic and intrinsic pathway of blood clotting is starting at :**

- a. Formation of prothrombin activator.
- b. Thrombin formation.
- c. Activate factor X.
- d. Changing of fibrinogen to fibrin.
- e. Release platelets phospholipids.

Ans: c

**19) Regarding blood groups, which of the followings is correct?**

- a. Maximal antibodies found at puberty.
- b. After age of 18 years, the titer of antibodies starts to decrease.
- c. In mismatched transfusion, some haptoglobin liberated and cause jaundice.
- d. At birth there are no agglutinins in the plasma.
- e. In mismatched blood transfusion, immediate hemolysis of recipient RBC occur.

Ans: d

**20) Choose the wrong statement :**

- a. Deficiency of calcium can cause thromboembolism.
- b. Blood in normal vessels does not clot because presence of thrombomodulin.
- c. T-plasminogen activator can be used for treatment of pulmonary or coronary clot.
- d. Deficiency of vit k cause excess bleeding.
- e. Decrease platelets called thrombocytopenia.

Ans: a

**21) Which of the followings is function of fluid part of plasma.**

- a. Protection against infection.
- b. Prevent blood loss.
- c. Regulation of Ph of blood.
- d. Transport hemoglobin.
- e. Regulation of extracellular fluid.

Ans: c

**Biochemistry:**

**22) Factors that decrease iron absorption includes all the following except:**

- a. Achlorohydia.
- b. The presence of gastrointestinal diseases
- c. Deficiency of HCL
- d. Phytates and phosphates in vegetables
- e. Ascorbic acid.

Ans: e

**23) the largest plasma protein in blood is:**

- a. albumin
- b. alpha fetoprotein
- c. ceruloplasmin
- d. globulin
- e. fibrinogen

Ans: e

**24) all the C and N atoms of the porphyrin molecule are provided by:**

- a. glutamate and glycine
- b. glutamate and alanine
- c. glycine and succinyl CoA
- d. succinyl CoA and acetyl CoA
- e. alanine and methyl-succinyl CoA

Ans: c

**25) High levels of haemopexin is found in all the following conditions except?**

- a. Malignancies.
- b. Diabetes mellitus
- c. Hemolytic anemia.
- d. Pregnancy.
- e. Duchenne muscular dystrophy.

Ans: c

**26) Iron is:**

- a. Very low in green vegetables.
- b. Least amount in the body in the form of myoglobin.
- c. High in milk.
- d. With severe deficiency can cause macrocytosis.
- e. Store in the liver in form of ferritin.

Ans: e

**27) What is the multiple myeloma?**

- a. Cancer of blood.
- b. Cancer of bone marrow.
- c. Cancer of the lymph nodes.
- d. Cancer of the lymphatic system.
- e. Cancer of plasma cells.

Ans: e

**28) The criteria for the diagnosis of beta thalassemia includes all the following except?**

- a. Low MCV.
- b. Blood film.
- c. Low MCH.
- d. Decrease HbA2.

Ans: d

**29) Lead poisoning inhibits which of the following enzymes?**

- a. D-aminolevulinic acid synthase and d-aminolevulinic acid dehydrase.
- b. Bilirubin reductase and heme oxygenase.
- c. Ferrochelatase and d-aminolevulinic acid dehydrase.
- d. Heme oxygenase and ferrochelatase.
- e. D-aminolevulinic acid synthase and ferrochelatase.

Ans: c

**30) Fetal hemoglobin is composed of two globin chains of:**

- a. Alpha and beta.
- b. Alpha and gamma.
- c. Alpha and delta.
- d. Beta and gamma.

Ans: b

**31) Porphyrin cutanea tarda is associated with a deficiency in:**

- a. uroporphyrinogen decarboxylase
- b. uroporphyrinogen III synthase
- c. hydroxymethylbilane synthase.

Ans: a

## Pathology:

**32) Afflicted individual with thalassemia showing mutated globins in the form of  $\beta^0/\beta^+$ , what type of thalassemia most likely he might have?**

- a.  $\beta$ -thalassemia minor
- b. homozygous  $\beta$ -thalassemia
- c. heterozygous  $\beta$ -thalassemia
- d.  $\beta$ -thalassemia intermedia
- e.  $\beta$ -thalassemia major.

Ans: d

**33) blood patient examination has shown that MCV = 90fL (normal range :  $87\pm 5$  fempto-liters) and MCH =35 gm/dL (normal range :  $34 \pm 2$ gm/dL). The possible diagnosis will be:**

- a. normocytic hypochromic
- b. macrocytic hypochromic
- c. microcytic hypochromic
- d. microcytic normochromic
- e. normocytic normochromic
- f. macrocytic normochromic

ans: e

**34) Which of the following represents a very important indicator that marks CML as a tumor arising from transformed hematopoietic stem cell:**

- a. Point mutations in the tyrosine kinase JAK2
- b. Ph chromosome.
- c. Activating mutations in MPL.
- d. BCR-ABL fusion gene.
- e. JAK-STAT signaling.

Ans: d

**35) 65 years old male present with nonspecific clinical signs and symptoms. Physical exam and palpation showed lymphadenopathy with mild hepatomegaly. Genetic analysis showed acquired mutation in MYD88. Lab tests: anemia, high level of M protein, no bence jones proteinuria. Radio-imaging : no lytic bone lesion. The likely diagnosis is?**

- a. Hodgkin lymphoma.
- b. Lymphoplasmacytic lymphoma.
- c. Monoclonal gammopathy of undetermined significance (MGUS).
- d. Chronic lymphocytic leukemia/small lymphocytic lymphoma.
- e. Multiple myeloma.

Ans: b

**36) In hemolytic anemia there is an accelerated RBCs destruction. Thus there is:**

- a. Increased oxygen levels in tissue.
- b. Decreased number of reticulocytes in the PBS.
- c. Increased growth of erythroid elements.
- d. Decreased erythropoietin release.
- e. The RBCs life span is about 100 days.

Ans: c

**37) What does von willebrand factor do?**

- a. Binds platelets to sub-endothelium.
- b. Carries factor VII.
- c. Binds platelets to each other
- d. Binds platelets to phospholipid surface.
- e. Carries factor V .

Ans: a

**38) Follicular lymphomas have a characteristic t (14;18) translocation, which will fuses the BCL2 gene on chromosome 18 to the IgH locus on chromosome 14. Which of the following represents the result of this translocation?**

- a. Overexpression of BCL6 protein.
- b. Overexpression of the MYC transcription factor.
- c. Overexpression of cyclin-D1.
- d. Overexpression of BCL2 protein.
- e. Overexpression of CD5.

Ans: d

**39) Based on which of the following criteria the cell of origin can be determined in lymphoid neoplasms?**

- a. Immunophenotyping.
- b. Prognosis.
- c. Clinical signs and symptoms.
- d. Response to chemotherapy.
- e. Morphology ( routine H&E).

Ans: a

**40) Which of the following is true of DIC?**

- a. It is contagious and can be pass from person to person
- b. It can result in the formation of numerous blood clots within the microcirculation as well as bleeding.
- c. It is never seen with an underlying condition.
- d. It is an inherited disease.
- e. It can result in the formation of large thrombi within the larger blood vessels.

Ans: b

**41) Which of the followings increase in all types of anemia:**

- a. Cardiac output.
- b. Hemoglobin combination with O<sub>2</sub>.
- c. Peripheral resistance.
- d. Blood viscosity.
- e. Size of RBC.

Ans: a

**42) Rarely females experience the physiological defect of haemophilia as they do so only when they are:**

- a. Homozygous for the defect.
- b. In the reproductive life.
- c. Heterozygote for the defect.
- d. Carrier for the defect.
- e. After menopause.

Ans: a

**43) Which of the following entities represents a good example of a cancer that arises within and is sustained by chronic inflammation?**

- a. Mantle cell lymphoma.
- b. DLBCL.
- c. Follicular lymphoma.
- d. Extranodal marginal zone lymphoma.
- e. Hodgkin lymphoma.

Ans: d

**44) The fever, thrombocytopenia, microangiopathic hemolytic anemia, transient neurologic deficits, renal failure are considered as the five criteria to diagnose which of the following conditions?**

- a. Chronic immune thrombocytopenic purpura.
- b. Acute immune thrombocytopenic purpura.
- c. Thrombotic thrombocytopenic purpura.
- d. DIC.
- e. Haemophilia.

Ans: c

**45) Which of the following conditions is strongly associated with activating point mutations in tyrosine kinase JAK2?**

- a. Primary myelofibrosis.
- b. Polycythemia vera.
- c. Chronic myeloid leukemia.
- d. Acute myeloid leukemia.
- e. Beta-thalassemia minor.

Ans: b

**46) 9 years old boy represents with fatigue and fever with pale skin surfaces. He is denoting recurrent infections within the past few weeks. Lab tests showing low white cells count with thrombocytopenia, neutropenia and anemia. Clinical exam revealed generalized lymphadenopathy with slight (mild) hepatosplenomegaly and bone pain. What is the most likely diagnosis you will think about to start your investigation with?**

- a. Follicular lymphoma(FL).
- b. Acute lymphoblastic leukemia (ALL).
- c. Acute myeloid leukemia (AML).
- d. Von-willebrand's disease.
- e. SARS-COVID-19.

**Ans:** b

**47) Why the homozygous sickle cell disease is usually asymptomatic until 6 months of life?**

- a. The uncomplete shifting of HBF to HBA.
- b. The anemia is mild.
- c. The hematocrit is within the normal ranges.
- d. The uncomplete shifting of HBF to HBS.
- e. The patient is functionally asplenic.

**Ans:** d

**48) Decay accelerating factor (DAF) is reduced in persons with mutations that reduces GPI ( glycosyl phosphatidylinositol) levels. Which of the following represents a good example of the case in the above scenario?**

- a. Immuno-hemolytic anemia (IHA).
- b. Paroxysmal nocturnal hemoglobinuria (PNH).
- c. Beta-thalassemia minor.
- d. Glucose-6-phosphate dehydrogenase deficiency (G6PDD).
- e. Sickle cell anemia.

**Ans:** B

**49) Which of the following is contained within the alpha granules of platelets?**

- a. Calcium.
- b. Fibrinogen.
- c. Thrombin.
- d. Serotonin.
- e. Adenosine diphosphate (ADP).

**Ans:** b

**50) Which of the following condition is typically associated with prolonged PTT?**

- a. Iron deficiency anemia.
- b. Von willebrand's disease.
- c. Hodgkin's disease.
- d. Haemophilia A.

e. Follicular lymphoma.

Ans: d

## Pharmacology:

**51) Which of the following chemotherapeutic agents is topoisomerase enzymes inhibitor:**

- a. Tamoxifen
- b. Etoposide
- c. Cisplatin
- d. Non of the statements is correct
- e. Rituximab.

Ans: b

**52) Which of the following chemotherapeutic agents is cardio toxic:**

- a. Aspirin
- b. Streptokinase
- c. Vinblastine
- d. Doxorubicin
- e. Bleomycin

Ans: d

**53) a 56 years old female is discovered to have megaloblastic anemia. Which of the following would be the best treatment option for this patient ?**

- a. parenteral vit B12
- b. parenteral ferrous sulfate
- c. oral vit B12 with oral folate
- d. oral folate
- e. oral vit B12

Ans: c

**54) Which of the following is an oral anticoagulant?**

- a. Vinblastine.
- b. Urokinase.
- c. Warfarine.
- d. Heparine.
- e. Aspirin.

Ans: c

**55) Which of the following drugs is an antidote of bleeding by controlling fibrinolytic states?**

- a. Vit K1.
- b. Protamine sulfate.
- c. There is more than one correct answer.

- d. Aminocaproic acid.
- e. Tranexamic acid.

Ans: c

**56) Which of the following iron supplements contains the highest percentage of elemental iron?**

- a. Ferrous sulfate.
- b. Carbonyl iron.
- c. There is more than one correct answer.
- d. Ferrous gluconate.
- e. Ferric ammonium citrate.

Ans: b

### Microbiology:

**57) pick out which one of the following statements concerning salmonella typhi is false:**

- a. it can damage peyer's patches
- b. it is highly resistance to killing by bile .
- c. typhoid fever is a disease associated with human only .
- d. it can colonize the gall bladder for years .
- e. infection is commonly restricted to the intestine and no invasion of blood stream occur.

Ans: c

**58) all the following characterized "African trypanosomiasis" except:**

- a. sleeping sickness syndrome characterized by inability to eat and unconsciousness.
- b. amastigote is non-dividing form that is infectious.
- c. CNS involvement .
- d. Associated with sleeping sickness
- e. Are transmissible through the placenta.

Ans: b

**59) Pick one false statement about Y.pestis:**

- a. The endotoxicity of bacteria (related to LPS) results in shock and DIC.
- b. It was responsible for the black death in Europe.
- c. Bubonic plague is transmitted person to person.
- d. The bacteria can multiply in the flea digestive system.
- e. Growth conditions inside human phagocytes activate certain virulence genes.

Ans: c

**60) Which of the following does not need a living vector for human transmission?**

- a. Q fever.
- b. Elephantiasis
- c. River blindness

- d. Typhus fever
- e. Plasmodium

Ans: a

**61) All of the following are prominent signs of “glandular fever” except:**

- a. Oral leukoplakia.
- b. Hepatitis.
- c. Purulent pharyngitis.
- d. Epithelial hyperplasia.
- e. Meningitis.

Ans: e

**62) The sexual cycle of plasmodium is completed in:**

- a. Human RBC .
- b. Human intestine.
- c. Mosquito gut.
- d. Human liver cells.
- e. Salivary gland of mosquito.

Ans: c

**63) Occult filariasis is diagnosed based on the following except:**

- a. The presence of circulating antigen in the blood.
- b. The absence of microfilariae from the peripheral blood.
- c. Eosinophilia.
- d. Clinical observation.
- e. Detection of microfilaria in the early morning blood smear.

Ans: b

**64) Brucella spp; the causative agent of undulant fever is transmitted to human by the following except:**

- a. Contaminated dairy products.
- b. Mother to the fetus through placenta.
- c. Urine and animal excretions.
- d. Raw animal milk.
- e. Blood.

Ans: e

**65) The major consequences of wuchereria bancrofti infection is:**

- a. Skin rash.
- b. Hydrocele.
- c. Arthritis.
- d. Hypopigmentation macules.
- e. Urticarial papules.

Ans: b

**66) One of the following is false concerning the laboratory diagnosis of “kissing disease”:**

- a. Lymphocytosis.
- b. Detection of bovine RBCs antibodies in the serum of patient.
- c. Detection of EBV antigen.
- d. Detection of heterophile antibodies.
- e. The presence of atypical monocyte.

Ans: e

**67) The most common serious condition in chagas disease is:**

- a. Necrotizing pneumonia.
- b. CNS involvement leading to coma.
- c. The primary lesion is chancre.
- d. Interstitial myocarditis.
- e. Gastrointestinal manifestation.

Ans: d

**68) In a patient who has bubonic form of plague, all the following specimens are acceptable for diagnosis except:**

- a. CSF sample for hypersensitivity test.
- b. Immunofluorescent antibody stains targeting the capsular F1 antigen.
- c. Blood culture using routine laboratory media.
- d. Acute and convalescent serology (antibody).
- e. Culture of a lymph node aspirate on blood or macConkey agars.

Ans: a

**69) Q fever is considered as a/an ..... born disease.**

- a. Food.
- b. Air.
- c. Body louse.
- d. Water.
- e. Blood.

Ans: b

**70) All of the following characterized the periodic paroxysms stage of malaria except:**

- a. Renal damage.
- b. Vomiting.
- c. Chill.
- d. Fever.
- e. Nausea and headache.

Ans: d

## Community:

### 71) Which of the following statements is wrong?

- a. Globally, the mean blood hemoglobin concentration is 111 g/L in children.
- b. Heme iron is present in Hb containing animal food like meat, liver ,spleen.
- c. Anemia is defined as reduction in the oxygen carrying capacity of blood, as observed by reduced levels of hemoglobin concentration and red cell mass (hematocrit) leading to tissue hypoxia.
- d. Fermentation is reducing inhibitors of iron absorption.
- e. There are two general reasons for anemia: increased red cell production and decreased red cell destruction.

Ans: e

Collected by Hala Awamleh