Temple University School of Medicine
Department of Pathology and Laboratory Medicine
Pathology (D305) Lecture Examination III
November 12, 2007

Corrected

35/45

IMPORTANT: Read the following instructions.

1. Fill in your name and the last four digits of your Temple identification number on your answer sheet and darken the corresponding circles.

2. There are 45 items (questions) on this examination. There is only one answer to each item. Choose the **best, correct** answer to a question or response to finish the statement of each item.

3. Use a number two pencil to mark your answers on your answer sheet. Mark your answer right after you have chosen one. There is no extra time at the end of the examination. The examination time is one hour.

4. Keep your eyes on your own examination paper and answer sheet. Place your own examination paper and answer sheet on your table top and prevent them from being exposed to others.

5. Students are not allowed to bring electronic devices or other miscellaneous items to the examination.

6. Proctors are not allowed to explain questions during examinations.

1. A prolonged partial thromboplastin time (PTT) indicates that:

A. there is a possible deficiency in factor VII.
B. there is a possible deficiency in factor IX.
C. the patient has thrombocytopenia.
D. the patient's platelets do not aggregate properly to form a platelet plug.
E. the patient likely has an increase in fragility of blood vessels.

2. Which of the following diseases is characterized by a prolonged bleeding time?

A. Deficiency in factor VIII
B. Deficiency in prothrombin
C. Deficiency in fibrinogen
D. Thrombocytopenia
E. Deficiency in vitamin C (scurvy)

3. A deficiency in von Willebrand factor can result in:

A. disseminated intravascular coagulation and death.
B. inability of platelets to adhere to one another and subendothelial connective tissue.
C. coronary vasospasm.
D. thrombocytopenia.
E. pulmonary edema.

4. Hemophilia B:

A. is an inherited deficiency of factor XII.
B. is inherited as an autosomal dominant trait.
C. is inherited as an X-linked recessive trait.
D. is due to a deficiency of von Willebrand factor.
E. occurs almost exclusively in females.

5. Which of the following is an important cause of disseminated intravascular coagulation?

A. Thrombocytopenia induced by prosthetic heart valves
B. Post-partum obstetric complications
C. Prinzmetal angina
D. Saddle embolus
E. Cor pulmonale

6. Forward failure caused by a failing left ventricle typically results in:

A. secondary hyperaldosteronism.
B. hyperthyroidism.
C. primary hyperpituitarism.
D. hyperparathryoidism.
E. leukocytosis.

7. A 58-year-old man has developed idiopathic pulmonary fibrosis. He has right ventricular hypertrophy with dilation. His heart condition is best described as:

A. acute endocarditis.
B. chronic cor pulmonale.
C. hypertrophic cardiomyopathy.
D. acute rheumatic carditis.
E. subacute endocarditis.

8. Rheumatic heart disease is caused by:

A. infection of heart tissues by streptococci.
B. antibodies to bacterial M protein crossreacting with heart tissue components.
C. acute staphylococcal endocarditis in intravenous drug abusers.
D. Coxsackieviruses A and B.
E. a persistant atrial septal defect.

9. Which of the following is a typical clinical manifestation of left-sided congestive heart failure?

A. Portal hypertension
B. Nutmeg liver
C. Subcutaneous edema of ankles
D. Pulmonary congestion and edema
E. Ascites

10. Which of the following defects of the cardiovascular system is a right-to-left shunt?

A. Atrial septal defect
B. Ventricular septal defect
C. Tetralogy of Fallot
D. Patent ductus arteriosus
E. Rupture of the interventricular septum following a myocardial infarct

11. What is the red blood cell morphology in iron deficiency anemia?

A. The red blood cells are microcytic and hypochromic.
B. The red blood cells are normocytic and normochromic.
C. The red blood cells are macrocytic and normochromic.
D. The red blood cells are microcytic and hyperchromic.
E. The red blood cells are normocytic and hyperchromic.

12. Which of the following diseases is characterized by lack of synthesis of beta-globin chains?

A. Hereditary spherocytosis
B. Hydrops fetalis
C. HbH disease
D. Sickle cell anemia
E. Thalassemia major

13. A deficiency of glucose-6-phosphate dehydrogenase:

A. leads to defective assembly of ankyrin.
B. causes HbS to aggregate.
C. leads to a lack of iron absorption in the gut.
D. can render red blood cells susceptible to oxidant injury.
E. is a major cause of autoimmune hemolytic anemia.

14. A 47-year-old woman has pernicious anemia and also has:

A. red blood cells that are hypochromic and microcytic.
B. red blood cells that are macrocytic and a demyelinating disease.
C. red blood cells that are spherical with abnormal ankyrin.
D. red blood cells containing HbH.
E. polycythemia vera.

15. A 49-year-old woman is diagnosed with cancer and has been treated with chemotherapeutic agents that are myelotoxic. She has developed pancytopenia, most likely due to:

A. myelophthesic anemia.
B. polycythemia vera.
C. aplastic anemia.
D. megaloblastic anemia.
E. anemia resulting from acute hemorrhage.

16. A 28-year-old man presents with a single enlarged lymph node in the right neck. A biopsy results in a diagnosis of Hodgkin lymphoma. What characteristic microscopic finding was present to render this diagnosis and what is the stage of the disease?

A. Langerhans cells, stage II
B. Anitschkow cells, stage I
C. Amyloid deposits, stage I
D. Neoplastic plasma cells, stage II
E. Reed Sternberg cells, stage I

17. Which of the following white blood cell neoplasms is most closely associated with EBV infection?

A. Acute lymphoblastic leukemia
B. Burkitt lymphoma
C. Follicular lymphoma
D. Multiple myeloma
E. Small lymphocytic lymphoma

18. The most common leukemia in childhood is: ALL

A. acute lymphoblastic leukemia.
B. acute myelogenous leukemia, M1 subtype.
C. acute myelogenous leukemia, M5 subtype.
D. chronic myelogenous leukemia.
E. chronic lymphoblastic leukemia.

19. Multiple myeloma:

A. is a disease of childhood.
B. is caused by a translocation involving the bcl-2 gene.
C. arises in lymph nodes and spreads to contiguous lymph nodes.
D. is associated with Bence-Jones protein.
E. is composed of small, mature-appearing lymphocytes.

20. A characteristic finding in chronic myelogenous leukemia is: CML

A. a mutation involving the MYC gene.
B. red, swollen gingivae.
C. Birbeck granules in tumor cells.
D. the Philadelphia chromosome.
E. amyloid deposits in the tongue.

21. A 61-year-old man has a 4 month history of severe substernal pain with pain radiating to the left jaw whenever he exercises hard or does manual labor. He knows the pain will subside in several minutes if he stops and relaxes. These clinical symptoms are most likely due to:

A. myocardial necrosis resulting from ischemia.
B. coronary artery atherosclerotic plaque disruption and partial thrombosis.
C. a non-disrupted, fixed atherosclerotic plaque causing over 75% obstruction of the coronary artery lumen.
D. mitral valve prolapse.
E. cardiac tamponade.

22. Ultimate mechanism of death in sudden cardiac death is most often due to:

A. thrombi from an enlarged left atrium embolizing to the kidney.
B. right to left shunts.
C. left to right shunts.
D. acute pericarditis.
E. arrythmias.

23. Subacute endocarditis:

A. is caused by highly virulent organisms.
B. typically results from organisms attacking normal heart valves.
C. is often caused by *Staph aureus*.
D. is often caused by *Strept viridans* and other oral commensals.
E. has a high mortality rate despite treatment with antibiotics.

24. What type of heart disease often occurs in alcoholics and those who have had viral myocarditis?

A. Prinzmetal angina
B. Dilated cardiomyopathy
C. Myocardial infarcts due to severe atherosclerosis
D. Cor pulmonale
E. Calcific aortic stenosis

25. The most common tumor to arise in the heart is:

A. rhabdomyosarcoma.
B. cardiac rhabdomyoma.
C. cardiac myxoma.
D. neurofibrosarcoma.
E. squamous cell carcinoma.

26. Which of the following lung diseases is caused by enzymic destruction of elastin in the walls of respiratory bronchioles?

A. Centriacinar emphysema
B. Panacinar emphysema
C. Non-atopic asthma
D. Chronic bronchitis
E. Atelectasis due to loss of surfactant

27. The characteristic finding in all forms of chronic bronchitis is:

A. IgE-mediated bronchoconstriction.
B. hypertrophy of mucus glands and hypersecretion of mucus.
C. squamous cell carcinoma arising from bronchial epithelium.
D. reduced lung compliance making it much more difficult to inflate the lungs than it is to exhale.
E. diffuse interstitial fibrosis.

28. Which type of bronchogenic carcinoma is best treated with chemotherapy?

A. Large-cell carcinoma
B. Small-cell carcinoma
C. Adenocarcinoma
D. Squamous cell carcinoma
E. Bronchial carcinoma-in-situ

29. The presence of the Virchow node is characteristic of:

A. sarcoidosis of the lung.
B. pneumothorax.
C. malignant mesothelioma.
D. metastatic bronchogenic carcinoma.
E. pneumococcal pneumonia.

30. Atypical pneumonia:

A. is typically caused by sarcoidosis.
B. is due to aspirating gastric contents.
C. is usually caused by Streptococcus pneumoniae.
D. usually involves an entire lobe.
E. is usually caused by viruses or mycoplasma.

31. What is the most common cause for the development of esophageal varices?

A. Esophageal carcinoma
B. Hepatocellular carcinoma
C. Atherosclerosis of the esophageal artery
D. Alcoholic cirrhosis
E. Coronary artery atherosclerosis

32. Bacterial gastritis predisposes to the development of peptic ulcer and gastric carcinoma. What is the most common microorganism that causes bacterial gastritis?

A. Staphylococcus aureus
B. Streptococcus viridans
C. Helicobactor pylori
D. Mycobaterium avium-intracellulare
E. Actinomyces israelii

33. Which inflammatory pattern is most characteristic for Crohn disease?

A. Acute diffuse transmural inflammation with abscesses
B. Chronic segmental inflammation with non-caseating granulomas
C. Subacute subepithelial inflammation with serous exudate
D. Acute superficial inflammation with ulcerations
E. Subacute diffuse inflammation with gangrene

34. What is the most common clinical manifestation of Peutz-Jeghers syndrome?

A. Melanin pigmentations around the mouth, lips, and buccal mucosa
B. Multiple osteomas in the mandible
C. Neurofibromas at the border of the tongue and on the lips
D. Cleft maxilla and cleft palate
E. Multiple odontogenic keratocysts in the jaws

35. What is the major microorganism that causes traveler's diarrhea?

A. Shigella flexneri
B. Salmonella typhi
C. Rotavirus
D. Calcivirus
E. Escherichia coli

36. Which of the following is caused by a basophil adenoma in the pituitary gland that secretes excess ACTH?

A. Acromegaly
B. Gigantism
C. Addison disease
D. Cushing disease
E. Graves disease

37. What is the tumor that arises from the epithelial remnants of the Rathke's pouch and histologically resembles the ameloblastoma in the jaws?

A. Hurtle cell tumor
B. "Brown tumor"
C. Pheochromocytoma
D. Chromophobe adenoma
E. Craniopharyngioma

38. Which of the following is caused by autoantibodies that block the action of thyroid-stimulating hormone (TSH)?

A. Graves disease
B. Pituitary dwarfism
C. Hashimoto disease
D. Conn syndrome
E. Virilism

39. What is the thyroid tumor that arises from the parafollicular C cells and is commonly present in multiple endocrine neoplasia syndrome type 2B?

A. Follicular carcinoma
B. Medullary carcinoma
C. Ganglioneuroma
D. Pheochromocytoma
E. Papillary carcinoma

40. In which endocrine disturbance renal stones and metastatic calcification in normal tissues tend to occur?

A. Hyperparathyroidism
B. Hypopituitarism
C. Hashimoto disease
D. Hyperthyroidism
E. Graves disease

41. What causes secondary hyperaldosteronism?

A. Excess plasma rennin
B. Vitamin D deficiency
C. Elevated serum prostate specific antigen level
D. Secondary hypercholesterolemia
E. Tertiary syphilis

42. In which disease is melanin hyperpigmentation of the skin and mucous membranes most commonly observed?

A. Addison disease
B. Hashimoto disease
C. Celiac disease
D. Alzheimer disease
E. Gull disease

43. What is the pathogenic mechanism of type 1 diabetes mellitus?

A. Destrucion of beta cells in the islets of Langerhans by toxic amylin
B. Liquefactive necrosis of the islets of Langerhans due to pyogenic bacterial infection
C. T cell-mediated autoimmune destruction of beta cells in the islets of Langerhans
D. Cross-linking of insulin by non-enzymic glycosylation
E. Defective response of target cells to insulin action

44. What is a relatively common complication in diabetics?

A. Coagulative necrosis of the forearm
B. Reumatoid arthritis
C. Viral myocarditis
D. Hepatic thromboembolism
E. Gangrene of the lower extremities

45. What is the most common finding in the mouth of patients with Cushing syndrome?

A. Multiple neuromas
B. Submucous fibrosis
C. Malformed teeth
D. Osteomas in the jaws
E. Candidiasis