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Temple University School of Medicine
Department of Pathology and Laboratory Medicine
Pathology (D305) Lecture Examination II
October 18, 2007

corrected

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 50 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. Which of the following is a well-demarcated tumor that can have a fibrous capsule?

A. Papilloma
B. Melanoma
C. Lymphoma
D. Mesothelioma
E. Lipoma

2. What is the proper terminology for a malignant cartilaginous tumor?

A. Cartilage carcinoma
B. Chondroid myxoma
C. Carlilaginous teratoma
D. Chondrosarcoma
E. Carcinosarcoma

3. Which of the following conditions in the oral epithelium and uterine cervical epithelium is a forerunner of squamous cell carcinoma?

A. Hyperkeratosis
B. Columnar metaplasia
C. Anaplasia
D. Epithelial dysplasia
E. Connective tissue hyperplasia

4. Which of the following is the most common site for metastatic neoplasms?

A. The brain
B. The lungs
C. The skeleton
D. The spleen
E. The kidney

5. The most likely reason that lung cancer death rate among women increases rapidly in the recent decades is that there are continued increasing numbers of women who:

A. smoke cigarettes.
B. drink large amounts of alcohol.
C. prefer sweet food.
D. consume high-cholesterol diet.
E. join the professional work force.

6. What are protooncogenes?

A. They are amplified cellular genes that inhibit cell growth.
B. They are mutated genes that enhance apoptosis.
C. They are normal cellular genes that promote cell proliferation/growth.
D. They are activated genes that cause malignant transformation of cells.
E. They are latent cellular genes that repair damaged DNAs.

7. In order to gain blood and nutrient supply, neoplastic cells secrete which of the following factors?

A. Tumor necrosis factor (TNF)
B. Transforming growth factor alpha (TGF-a)
C. Vascular endothelial growth factor (VEGF)
D. Von Willebrand factor (vWF)
E. Platelet-derived growth factor (PDGF)

8. Which of the following is considered the most likely carcinogen in the cigarette smoke that causes lung and oral squamous cell carcinomas?

A. Aflatoxin B1
B. Chlorhexidine
C. Nitrosamines
D. Cyclophosphamide
E. Benzo[a]pyrene

9. Which of the following is implicated in the pathogenesis of squamous cell carcinoma of the uterine cervix?

A. Hepatitis B virus
B. Human immunodeficiency virus
C. Epstein-Barr virus
D. Human T-cell leukemia virus
E. Human papillomavirus types 16 and 18

10. Which of the following genes is lost due to deletion of chromosome 13q14 that results in the development of cancers?

A. Rb gene
B. N-myc gene
C. Erb B-2 gene
D. C-abl gene
E. Bcl-2 gene

11. Which of the following is a paraneoplastic syndrome?

A. Nonbacterial thrombotic endocarditis in a patient with a lung squamous cell carcinoma
B. Hypercalcemia in a patient with a breast cancer that spreads to multiple bones
C. Hyperinsulinemia in a patient with a beta cell tumor
D. Hypopituitarism in a patient with a pituitary adenoma
E. Pneumonia in a patient with a terminal stage pancreatic carcinoma

12. A squamous cell carcinoma on the right lateral border of the tongue with no muscle invasion is designated as T1N2M0 in the clinical assessment. Which of the following is designated as N2?

A. Three lymph nodes on the right neck involved, each measuring 0.8 cm
B. Two lymph nodes on the left neck involved, each measuring 2.0 cm
C. Two lymph nodes on the right neck involved, each measuring 7.0 cm
D. One lymph node on each side of the neck involved, each measuring 1.0 cm
E. One lymph nodes on the right neck involved, measuring 2.0 cm

13. With the AJC staging system, which stage is the above oral carcinoma designated as T1N2M0?

A. Stage 0
B. Stage I
C. Stage II
D. Stage III
E. Stage IV

14. Which of the following is a useful marker in the detection and monitoring the prognosis of prostate carcinoma?

A. Adrenocorticotrophic hormone
B. Carcinoembryonic antigen
C. Prostate specific antigen
D. Alkaline phosphatase
E. Alpha-fetoprotein

15. Patients with which of the following problems have a very high risk of developing skin cancers?

A. Sjogren syndrome
B. Lupus erythematosus
C. Xeroderma pigmentosum
D. Paraneoplastic syndrome
E. Neurofibromatosis

16. In general atheromatous plaques involve which anatomic site most extensively and most severely?

A. The lower abdominal aorta
B. Coronary arteries
C. Popliteal arteries
D. Internal carotid arteries
E. The circle of Willis

17. What is the most common complication of atherosclerosis that causes myocardial infarction?

A. Calcification
B. Fissuring
C. Ulceration
D. Thrombosis
E. Hemorrhage

18. What is the most characteristic vascular change in benign essential hypertension?

A. Venous varicosity
B. Atherosclerosis
C. Hyaline arteriolosclerosis
D. Vasculitis of the vasa vasorum
E. Necrotizing arteriolitis

19. Patients with which of the following disorders are susceptible to aortic dissection?

A. Diabetes
B. Bulimia
C. Wernicke syndrome
D. Liver cirrhosis
E. Marfan syndrome

20. Patients with acquired immunodeficiency syndrome have an increased risk of developing what type of vascular tumor?

A. Capillary hemangioma
B. Port wine stain
C. Cystic hygroma
D. Kaposi's sarcoma
E. Epithelioid hemangioma

21. Which of the following is a prominent morphologic change in Kwashiorkor patients?

A. Myocardial hyperplasia
B. Hyperplastic arteriolosclerosis
C. Lymphoid hyperplasia of the spleen
D. Fatty liver
E. Skeletal muscle hypertrophy

22. What are Bitot's spots in vitamin A deficient subjects?

A. Hyperkeratinized patches on the conjuctiva
B. Depigmented spots on the skin
C. Spots of candidiasis on the oral mucosa
D. Also called café-au-lait spots on the skin
E. Gray opacities of degenerated cells in the retina

23. Which of the following is caused by vitamin D deficiency in young children?

A. Scurvy
B. Hemorrhagic diathesis
C. Rickets
D. Marasmus
E. Anorexia nervosa

24. What is the most prominent change in the oral epithelium of zinc-deficient subjects?

A. Hyperpigmentation with melanocytic hyperplasia
B. Papillary hyperplasia of the epithelium with koilocytosis
C. Intraepithelial blister formation with ulceration
D. Epithelial dysplasia with breakdown of the basement membrane
E. Hyperparakeratosis with mucositis

25. Which of the following is a very likely consequence of obesity?

A. High serum levels of HDL
B. Normocytic normochromic anemia
C. Type 2 diabetes
D. Rheumatoid arthritis
E. Increased risk of urinary urate stones

26. The enzyme system most responsible for detoxification of exogenous chemicals is:

A. neutrophil myeloperoxidase.
B. lysozyme.
C. cytochrome P450 enzyme system.
D. NADPH oxidase.
E. phosphofructokinase.

27. Mesothelioma is most associated with which of the following environmental agents?

A. Lead in old paint
B. Formaldehyde in housing insulation
C. Radon gas
D. Asbestos
E. Cadmium

28. Alcohol abuse is believed to cause metabolic and morphologic abnormalities due to the formation of:

A. lipofuscin.
B. amyloid.
C. glucose.
D. acetaldehyde.
E. pyruvic acid.

29. Lead causes anemia and hemolysis of red blood cells by:

A. activating complement.
B. interfering with sulfhydryl groups (SH) in enzymes responsible for maintenance of red blood cell membranes.
C. activating the external pathway of coagulation.
D. enhancing release of histamine from mast cells.
E. causing the formation of carboxyhemoglobin.

30. Newer formulations of oral contraceptives:

A. pose an increased risk of thromboembolism.
B. pose an increased risk of endometrial carcinoma.
C. pose an increased risk for ovarian cancer.
D. contain higher concentrations of estrogen than original formulations.
E. cause salicylism.

31. The most common diseases associated with long term smoking are:

A. pancreatitis, prostate cancer, and chronic ulcers.
B. hepatitis and erosive gastritis.
C. hepatitis, pancreatitis, and gallstones.
D. peripheral neuropathies and anemia.
E. bronchitis, emphysema, and lung cancer.

32. Intravenous drug abuse poses a significant increase in risk for:

A. inflammation of the aorta.
B. infective endocarditis.
C. rheumatoid arthritis.
D. lymphoma.
E. pituitary adenoma.

33. A significant complication of heat stroke is:

A. infective endocarditis.
B. allergy to prescribed antibiotics.
C. ischemia of tissues and cardiac arrythmias.
D. bronchitis.
E. atherosclerosis.

34. The most significant macromolecule damaged by ionizing radiation is:

A. DNA.
B. cytochrome c in the mitochondria.
C. Na/K ATPase.
D. cytochrome P450 enzyme system.
E. integrins in the cell membrane.

35. Aspirin induces an increased bleeding tendency and formation of petechiae by:

A. inhibiting production of glucocorticoids.
B. inhibiting lipoxygenase.
C. inhibiting platelet cyclooxygenase.
D. inhibiting the formation of lipoxins.
E. enhancing the action of histamine.

36. In children, a symptomatic primary infection with herpes simplex virus type I typically presents as:

A. shingles.
B. acute herpetic gingivostomatitis.
C. herpes labialis.
D. chickenpox.
E. pharyngotonsillitis.

37. One of the most common cells to be infected by Epstein-Barr virus is:

A. lung fibroblasts.
B. kidney mesangial cells.
C. islet cells in the pancreas.
D. T cells.
E. B cells.

38. Mucormycosis:

A. causes angular cheilitis in denture patients.
B. is a superficial fungal infection, limited to the keratin layer of epithelium.
C. causes the formation of sulfur granules.
D. is a life-threatening infection that induces tissue necrosis.
E. is successfully treated within a week with topical anti-fungal agents .

39. Which of the following diseases gives rise to aneurysmal changes of the aortic root affecting the coronary arteries and aortic valves?

A. Tertiary syphilis
B. Congenital syphilis
C. Actinomycosis
D. Infectious mononucleosis
E. Scarlet fever

40. Initial infection with varicella-zoster virus typically causes:

A. aphtous ulcers (canker sores).
B. infectious mononucleosis.
C. chicken pox.
D. shingles.
E. pneumonia and severe glomerulonephritis.

41. Graves disease is an example of:

A. type I hypersensitivity reaction.
B. type II hypersensitivity reaction.
C. type III hypersensitivity reaction.
D. type IV hypersensitivity reaction.
E. delayed type hypersensitivity.

42. Immunologic attack of a recipient's tissue after receiving an allogeneic bone marrow transplant is the basis of:

A. Sjogren's disease.
B. CREST syndrome.
C. Bruton's disease.
D. IgA deficiency.
E. graft versus host disease.

43. Autoantibodies to the acetylcholine receptor of skeletal muscle cells is most characteristic of:

A. myasthenia gravis.
B. systemic lupus erythematosus.
C. rheumatoid arthritis.
D. systemic sclerosis.
E. CREST syndrome.

44. A pannus is a characteristic finding in:

A. systemic sclerosis.
B. myasthenia gravis.
C. ankylosing spondylitis.
D. rheumatoid arthritis.
E. scarlet fever.

45. Ankylosing spondylitis is most closely associated with which of the following haplotypes of the major histocompatibility complex (MHC)?

A. HLA-DR1.
B. HLA-B27.
C. HLA-A14.
D. HLA-B1.
E. HLA-DQ8.

46. Hyperacute rejection of a kidney transplant is due to:

A. anaphylaxis.
B. a type IV hypersensitivity reaction.
C. presence of anti-donor tissue antibodies already present in the recipient.
D. a type I hypersensitivity reaction.
E. formation of granulomatous inflammation in the donor kidney.

47. An acute necrotizing vasculitis (fibrinoid necrosis) is a characteristic finding in:

A. type I hypersensitivity reactions.
B. type IV hypersensitivity reactions.
C. hypersensitivity caused by immune complex formation.
D. tuberculosis.
E. myasthenia gravis.

48. A 51-year-old woman with Raynaud's phenomenon, esophageal fibrosis, telangiectasias, and anti-centromere antibodies in her serum is most likely suffering from:

A. systemic lupus erythematosus.
B. systemic sclerosis.
C. X-linked agammaglobulinemia.
D. Graves disease.
E. CREST syndrome.

49. A key clinical finding that defines AIDS in an HIV-infected person is:

A. CD4(+) T cell count less than 200/microliter of blood.
B. seroconversion.
C. persistent generalized lymphadenopathy
D. production of CD8(+) T cells against virally infected cells.
E. infection of macrophages.

50. The cause of DiGeorge's syndrome is:

A. a failure of pre-B cells to mature into immunocompetent B cells in bone marrow.
B. autoantibodies to Scl-70 protein.
C. autoantibodies to thyroid tissue.
D. failure in development of the 3rd and 4th pharyngeal pouches during embryogenesis causing thymic hypoplasia.
E. autoantibodies to salivary gland acini.