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Corrected.

Temple University School of Medicine  
Department of Pathology and Laboratory Medicine  
Pathology (D305) Lecture Examination IV  
December 6, 2007

**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. What is the basic pathogenic mechanism of the lipoid nephrosis (minimal change disease)?

- A. Minimal hypertrophy of podocytes
- B. Immune complex deposits in the glomerular basement membrane
- C. IgA deposits in the glomerular mesangium *No*
- ☒ D. An increased permeability of the glomerular basement membrane
- E. Hyperplasia of the glomerular endothelial cells

2. Acute proliferative glomerulonephritis can develop after what type of infection?

- ~~A. Candidiasis in the oral cavity~~
- ☒ B. Infection by group A beta-hemolytic streptococcus in the pharynx
- C. Infection by pneumococcus in the lung
- D. Ascending infection by E. coli in the gomerulus *Bo. D*
- E. Infection by Helicobacter pylori in the stomach

3. What is the most striking histology of chronic glomerulonephritis?

- ☒ A. Fibrous scarring and hyalinization of glomeruli
- B. Abscesses in glomeruli
- C. Neutrophilic infiltration of glomeruli with endothelial cell proliferation
- D. Tubular cell hypertrophy and interstitial chronic inflammation
- E. Atherosclerosis of the renal artery

4. Prostate hypertrophy is a common risk factor for which of the following?

- A. Membranous nephropathy
- B. Acute tubular necrosis
- C. IgA nephropathy
- D. Lipoid nephrosis
- ☒ E. Acute pyelonephritis

✓ 5. In ischemic acute tubular necrosis, which portion of the nephron is most severely affected? *ATN*

- A. The glomeruli *low*
- B. The Bowman's capsule
- ☒ C. The proximal convoluted tubules
- D. The loop of Henle
- ☒ E. The distal convoluted tubules

6. A 24-year-old healthy man develops radiopaque renal stones. Urinalysis shows a pH of 7. What would be the predominant composition of the stones?

A. Uric acid  
B. Magnesium ammonium phosphate  
☒ C. Calcium oxalate  
D. Cystine  
E. Mucoprotein

- ✓ 7. A 72-year-old man dies of pneumonia. At autopsy, the pelvis and calyces of his right kidney are abnormally dilated. What is the most likely cause?

☒ A. Ureteral obstruction  
B. Benign nephrosclerosis  
C. Aspirin abuse  
☒ D. Chronic pyelonephritis  
E. Diabetes mellitus

8. A 56-year-old man develops a renal cell carcinoma. Urinalysis shows mild hematuria and no protein, glucose, or ketones. Which of the following is the most likely laboratory report?

☒ A. Glucosuria  
☒ B. Increased hematocrit (polycythemia)  
☒ C. Ketonuria  
D. Increased creatinine clearance  
E. Proteinuria

9. Which of the following best designates the histology of Wilms tumor?

A. Squamous cell carcinoma  
B. Diffuse papillomatosis  
☒ C. Carcinosarcoma  
D. Myxoid liposarcoma  
E. Adenosquamous carcinoma

10. Which of the following is a serum marker currently used for detection and monitoring the prognosis of prostate carcinoma?

☒ A. Alkaline phosphatase  
☒ B. Creatinine kinase  
C. Androgens  
☒ D. Prostate specific antigen  
E. Carcinoembryonic antibodies

✓ 11. Psoriatic patients develop keratotic plaques on the skin, especially in the tensor areas. About one-third of patients also show which of the following disorders?

- ~~A. Macrodonia~~
- ~~B. Excess body hair~~
- ~~C. Numerous acnes on the face~~
- ~~D. Increased incidence of keloid formation~~
- E. Nail abnormalities

✓ 12. A woman takes antibiotics for treatment of pneumonia and develops acute eczematous dermatitis. What is the most likely pathogenesis?

- A or B
- ~~A. Type I hypersensitivity reaction~~
  - B. Drug reaction
  - ~~C. Bacterial septicemia~~
  - ~~D. Photosensitivity~~
  - ~~E. Human papillomavirus infection~~

✓ 13. A young adult develops dermatitis herpetiformis on the forehead. Which gastrointestinal disease is most often associated with this skin problem?

- A. Autoimmune chronic gastritis
- B. Peptic ulcer
- C. Crohn disease
- ~~D. Diverticular disease~~
- E. Celiac disease

14. What is the key pathogenic histologic feature of lichen planus?

- A. Destruction of basal cells by cytotoxic T lymphocytes
- B. Dissolution of desmosomes by autoantibodies
- C. Epithelial hyperplasia stimulated by lymphokines
- D. Dissolution of the basement membrane by autoantibodies
- E. Coagulative necrosis of keratinocytes induced by herpes viruses

15. An elderly man develops a 0.5-cm pearly papule on his right cheek skin. Histologic sections of this lesion show irregular islands and cords of basaloid cells with an infiltrating growth pattern. What is this lesion?

- A. Pigmented nevus
- B. Keratoacanthoma
- C. Seborrheic keratosis
- D. Basal cell carcinoma
- E. Verruca vulgaris

16. What is the most characteristic histologic finding in Creutzfeldt-Jacob disease?
- A. Numerous neuritic plaques
  - B. Plaques of demyelination
  - C. Lewy bodies
  - ☒ D. Microglial nodules
  - E. Vacuolation of neurons and neuropils
17. What is the most characteristic clinical manifestation of Alzheimer disease?
- A. Symmetric muscular weakness
  - B. Gait disturbances
  - C. Choreiform movements
  - ☒ D. Progressive dementia
  - E. Grand mal seizures
- ✓ 18. Loss of melanin-containing neurons in the substantia nigra and locus ceruleus characterizes which of the following?
- A. Meningococcal meningitis
  - ☒ B. Spongiform encephalitis
  - C. Lou Gehrig disease
  - ☒ D. Parkinson disease
  - E. Huntington disease
19. Which of the following characterizes multiple sclerosis?
- A. Formation of neurofibrillary tangles in memory neurons
  - B. Amyloidosis in the brain substance
  - C. Formation of intracytoplasmic inclusions
  - D. Spongiosis of motor neurons
  - ☒ E. Demyelination of the white matter
20. What is the neural tumor that preferentially occurs in the anterior maxilla of infants?
- A. Acoustic neuroma
  - B. Ependymoma
  - ☒ C. Melanotic neuroectodermal tumor
  - D. Astrocytoma
  - E. Meningioma

21. Jaundice occurs when there is an elevation in:

- ☒ A. serum bilirubin.
- B. serum globulin.
- C. serum albumin.
- D. serum sodium
- E. serum iron.

22. Feco-oral transmission of viral hepatitis is caused by:

- ☒ A. hepatitis A virus.
- B. hepatitis B virus.
- C. hepatitis C virus.
- D. hepatitis D virus.
- E. herpes simplex virus.

23. Exposure to infected blood or body fluids causes viral hepatitis with:

- A. hepatitis A virus.
- ☒ B. hepatitis B virus.
- C. hepatitis E virus.
- D. cytomegalovirus.
- E. human papillomavirus.

24. The most common cause of cirrhosis in the US is:

- ☒ A. alcohol abuse.
- B. cigarette smoking.
- C. systemic hypertension.
- D. congenital liver disease.
- E. gallstones.

25. Cirrhosis of the liver results in:

- A. anemia.
- B. diarrhea.
- C. anorexia.
- ☒ D. ascites.
- E. systemic hypertension.

26. Predisposing factors in the development of hepatocellular carcinoma include:

- A. smoking.
- B. severe atherosclerosis.
- C. portal hypertension.
- ☒ D. hepatitis B infection.
- E. gallstones.

HCC.

27. The histologic hallmark of cirrhosis is:

- ☒ A. fibrosis and nodularity.
- B. Mallory bodies.
- C. eosinophilic globules.
- D. iron deposition.
- E. cholestasis.

✓ 28. Gallstones most often produce:

- ~~A. diarrhea.~~
- ~~B. vomiting.~~
- ~~C. constipation.~~
- ~~D. skin rash.~~
- ☒ E. obstructive jaundice.

increase

29. The major risk factor for acute pancreatitis is:

- A. viral hepatitis.
- B. elevated serum bilirubin.
- C. carcinogens in food.
- ☒ D. alcohol abuse.
- E. elevated serum cholesterol.

30. Cancer of the pancreas:

- A. is the most common tumor in the gastrointestinal tract.
- B. has a very low mortality rate.
- C. is usually a sarcoma.
- D. usually presents with abdominal distension.
- ☒ E. often presents with obstructive jaundice.

31. An important risk factor in causing the most common cancer of the female reproductive tract in Western countries is:

- A. repeated infections of the vagina with *Trichomonas vaginalis*.
- B. development of lichen sclerosus.
- ☒ C. endometrial hyperplasia.
- D. ectopic pregnancy.
- E. repeated infections of the cervix with *Chlamydia trachomatis*.

32. The most common site for ectopic pregnancy is:

- ☒ A. the surface of the ovary.
- ☒ B. the fallopian tubes.
- C. the cervix.
- D. the abdominal cavity.
- E. the vagina.

✓ 33. A 40-year-old woman has symptomatic intraperitoneal adhesions and a biopsy of an intraperitoneal lymph node reveals normal endometrial tissue. The woman most likely has:

- ☒ A. dysfunctional uterine bleeding.
- ☒ B. endometriosis.
- ☒ C. metastatic endometrial carcinoma.
- D. a dermoid cyst.
- ☒ E. endometrial leiomyomas.

34. Which of the following best characterizes the most common type of carcinoma to affect the vulva?

- A. It is caused by herpes simplex virus, type 2.
- ☒ B. It occurs in women older than 70 years of age and associated with lichen sclerosus.
- ☒ C. It occurs in women older than 70 years of age and associated with lichen simplex chronicus.
- ☒ D. It occurs in women 40-60 years of age and is associated with HPV 16.
- E. It occurs over a wide age range (20-75 years) and is an adenocarcinoma.



✓ 35. Which of the following best characterizes the occurrence of squamous cell carcinoma of the vagina?

A. It is caused by herpes simplex virus, type 2.

~~B.~~ It is the second most common tumor of the female genital tract and occurs usually before 50 years of age.

~~C.~~ It is extremely uncommon.

~~D.~~ It is very common and is the one malignancy of the female genital tract that is not associated with HPV infection.

~~E.~~ It is very common and syphilis infections are the main cause.

36. Ovarian tumors derived from germ cells are called:

~~A.~~ teratomas.

B. serous cystadenocarcinomas.

C. choriocarcinomas.

D. squamous cell carcinomas.

E. mucous cystadenocarcinomas.

✓ 37. Which of the following statements best describes a choriocarcinoma?

A. It is the most common malignancy to arise in the cervix.

~~B.~~ It most commonly arises in a partial hydatidiform mole.

~~C.~~ The tumor grows slowly and rarely metastasizes.

~~D.~~ It is the most common carcinoma to occur in the endometrium.

~~E.~~ It is a very aggressive tumor with widespread metastases at the time of diagnosis.

38. The underlying cause of preeclampsia/eclampsia is:

A. glomerulonephritis.

B. the formation of a partial hydatidiform mole.

C. infection with herpes simplex virus, type 2.

~~D.~~ hypertension.

~~E.~~ the muscle walls of the spiral arteries are not replaced by fibrinous material.

39. The most common carcinoma to arise in the breast is:

~~A.~~ serous cystadenocarcinoma.

~~B.~~ scirrhous carcinoma.

~~C.~~ lobular carcinoma.

D. melanoma.

E. immature teratoma.

40. Which of the following is the most significant risk factor in the development of breast carcinoma?

- A. A woman giving birth to 10 or more children
- B. Fibrocystic change of the non-proliferative type
- C. Inherited mutations in the BRCA1 gene
- D. The diagnosis of a fibroadenoma
- E. Infection of breast tissue by HPV 16

✓ 41. Which of the following best characterizes Ewing sarcoma?

- A. It occurs most commonly in adults over 60 years of age.
- B. It is a subtype of osteosarcoma that produces abundant osteoid tissue.
- C. It is a subtype of chondrosarcoma that produces abundant chondroid tissue.
- D. It has a neural origin with well characterized gene defects.
- E. It is the most common primary malignancy of bone.

42. A 62-year-old male has symmetric enlargement and deformity of his facial bones, ribcage, and pelvis and his serum alkaline phosphatase levels are very high. The patient is most likely suffering from:

- A. achondroplasia.
- B. osteoarthritis.
- C. Paget disease of bone.
- D. osteoporosis.
- E. osteomalacia.

43. Accumulation of excess amounts of uric acid in tissues is the cause of:

- A. gout.
- B. fibrous dysplasia.
- C. pyogenic osteomyelitis.
- D. myasthenia gravis.
- E. Duchenne muscular dystrophy.

44. Osteopetrosis is characterized by:

- A. multiple radiolucencies in all bones with thin bone trabeculae.
- B. inflammation of the knee joints due to heavy lifting over many years.
- C. thin bone trabeculae caused by a lack of vitamin D as an adult.
- D. excess bone production with progressive reduction of marrow spaces in all bones.
- E. lack of mineralization of endochondral cartilage during development of long bones.

✓ 45. A 14-year-old male presents with a 1-year history of expansion of the right posterior maxilla causing facial asymmetry. A biopsy reveals small and disorganized bone trabeculae in a fibrous stroma. Radiographs reveal lesional tissue as radiopaque with a ground glass appearance and indistinct borders. The patient most likely suffers from :

*Bone: Fibrous stroma*

- ☒ A. fibrous dysplasia.
- ☐ B. acute osteomyelitis.
- ☐ C. Paget disease of bone.
- ☐ D. chondrosarcoma.
- ☐ E. osteoporosis.