

## Integrative Biology 131 Third Examination December 10, 1997 M. Diamond

Part I. Please mark the best answer.

1. The receptor for hearing is called the
  - a. bipolar cells
  - b. spiral ganglion
  - c. organ of Corti
  - d. auricle
  
2. The external auditory meatus is lined with
  - a. simple squamous epithelium
  - b. stratified squamous epithelium
  - c. simple columnar epithelium
  - d. simple cuboidal epithelium
  
3. The tympanic membrane consists of
  - a. only a mucous membrane
  - b. only of stratified squamous epithelium
  - c. of a. + b. + collagenous fibers
  - d. only of collagenous fibers
  
4. The germinal epithelium in the \_\_\_\_\_ produce thousands of sperm through out life.
  - a. scrotum
  - b. vas deferens
  - c. prostate gland
  - d. testis
  
5. The Eustachian tube connects the nasopharynx with the
  - a. mastoid sinus
  - b. inner ear
  - c. middle ear
  - d. external ear
  
6. The membranous labyrinth follows the outline of the bony labyrinth except for the
  - a. semicircular canals
  - b. ampulla
  - c. scala vestibuli
  - d. utricle and saccule
  
7. The \_\_\_\_\_ cells form a blood-testis barrier
  - a. spermatids
  - b. spermatogonia
  - c. Sertoli
  - d. bulbourethral gland

8. The pH of semen is about \_\_\_\_\_ to neutralize the acid in the vagina
- a. 10
  - b. 4
  - c. 7
  - d. 13
9. The parotid salivary gland
- a. secretes saliva into the floor of the mouth
  - b. is found on the medial surface of the ramus of the mandible
  - c. lies inferior and anterior to the external auditory meatus
  - d. is the smallest salivary gland
10. The hardest, most stable tissue in the body is
- a. cementum
  - b. dentine
  - c. enamel
  - d. bone
11. Cementum, the periodontal membrane and \_\_\_\_\_ support the teeth in the socket.
- a. columnar epithelium
  - b. gingiva
  - c. dentine
  - d. enamel
12. Which cranial nerve does not supply the tongue?
- a. III
  - b. V
  - c. VII
  - d. XII
13. Taste buds are found on the
- a. sides of the papillae
  - b. top of the papillae
  - c. tip of the tongue only
  - d. in the epithelium of the oral pharynx
14. The esophagus begins at the same vertebral level (C6) as the
- a. thyroid cartilage
  - b. vocal cords
  - c. trachea
  - d. primary bronchi

15. Which is not a principle layer of the skin?
- a. hyperdermis
  - b. hypodermis
  - c. dermis
  - d. epidermis
16. The abdominal wall is lined with
- a. stratified squamous epithelium
  - b. the parietal peritoneum
  - c. simple cuboidal epithelium
  - d. stratified columnar epithelium
17. The condition called "heart burn" is caused by
- a. chyme entering the esophagus
  - b. massive contraction of the myocardium
  - c. ischemic condition of the myocardium
  - d. abnormal contraction of the pyloric sphincter
18. The mucous membrane of the stomach consists of mucous cells, chief cells and \_\_\_\_\_.
- a. paneth cells
  - b. parietal or oxyntic cells
  - c. cardiac cells
  - d. coeliac cells
19. Rennin produced by the infant comes from the
- a. stomach
  - b. kidney
  - c. liver
  - d. gall bladder
20. Protein digestion taking place in the stomach comes primarily from what cells?
- a. mucous cells
  - b. chief cells
  - c. goblet cells
  - d. stratified columnar cells
21. The Fallopian tube is about 4.5 inches long and the ovum travels through in about \_\_\_\_\_ days.
- a. 10
  - b. 4
  - c. 2
  - d. 14

22. The thickest part of the uterus is the \_\_\_\_\_.
- a. pelvis
  - b. body
  - c. cervix
  - d. fundus
23. The Paps smear, a test for uterine cancer, is taken from the cervix, which is the \_\_\_\_\_ part of the uterus.
- a. thickest
  - b. thinnest and inferior
  - c. superior
  - d. posterior
24. After ovulation, during the secretory stage of the endometrial development, which sex steroid hormone is high?
- a. estrogen
  - b. follicle stimulating hormone
  - c. progesterone
  - d. aldosterone
25. Sperm are viable for three days. What day of the cycle does ovulation usually occur?
- a. 5<sup>th</sup>
  - b. 10<sup>th</sup>
  - c. 14-15<sup>th</sup>
  - d. 20<sup>th</sup>
26. What function is not associated with the vagina?
- a. serves as lower part of birth canal
  - b. receives seminal fluid from male
  - c. provides many secretions
  - d. has stratified squamous epithelium to resist abrasion and infection
27. The counterpart of the erectile tissue in the penis of the male is the \_\_\_\_\_ in the female.
- a. mons pubis
  - b. labia majora
  - c. labia minora
  - d. clitoris
28. The easiest approach to the vas deferens for a vasectomy is through the \_\_\_\_\_.
- a. scrotum
  - b. prostate
  - c. seminal vesicle
  - d. ejaculatory duct

29. Which glands found in the duodenum neutralize the acid in the chyme?
- Tien's glands
  - Atkinson's glands
  - Brunner's glands
  - Berdahl's glands
30. Most absorption of digested products takes place in the
- cecum and ascending colon
  - ileum
  - ilium
  - duodenum and jejunum
31. The crypts of Lieberkuhn are found in the
- gastric pits
  - Brunner's glands
  - base of the villi
  - at the tips of the villi
32. Peyer's patches are masses of lymphoid tissue found in the
- pharynx
  - larynx
  - cecum
  - ileum
33. Alcohol and aspirin are first absorbed in the
- esophagus
  - stomach
  - duodenum
  - jejunum
34. What function is not associated with the large intestine?
- receives unabsorbed food
  - absorbs water
  - lubricates feces with mucus
  - produces most digestive enzymes
35. What function is not associated with the skin?
- regulates body temperature
  - produces hair
  - acts as a physical barrier to microorganisms
  - can completely replace the function of the kidneys

36. The kidneys lie on the psoas major and quadratus lumborum and are considered to be
- in the peritoneal cavity
  - antepertoneal
  - superiorperitoneal
  - retroperitoneal
37. The left kidney lies between which vertebrae
- T5-T7
  - T6-T12
  - T12-L3
  - L4-S5
38. Which structure is not part of the nephron?
- calyx
  - Bowman's capsule
  - loop of Henle
  - distal convoluted tubule
39. Which substance is not reabsorbed in the proximal convoluted tubule.
- Na<sup>+</sup>
  - glucose
  - water
  - PO<sub>4</sub>
40. What is the crucial structure involved in forming the glomerular filtrate?
- podocytes
  - simple squamous epithelium
  - basement membrane between endothelium of capillary and podocytes
  - proximal convoluted tubule
41. From 1200 cc of blood flowing through the kidneys each minute, how much urine is formed?
- five quarts
  - 1 cc
  - 125 ml
  - 124 ml
42. Antidiuretic hormone formed in the hypothalamus acts on what part of the kidney tubular system?
- Bowman's capsule
  - proximal convoluted tubule
  - collecting ducts
  - major calyces

43. Diabetes insipidus refers to a deficiency in
- sugar
  - water
  - ADH (antidiuretic hormone)
  - Aldosterone
44. Aldosterone comes from the
- liver
  - kidney
  - adrenal cortex
  - adrenal medulla
45. The juxtaglomerular apparatus in the wall of the afferent arteriole produces
- Aldosterone
  - renin
  - Hydrochloric acid
  - calcium acetate
46. Both the brain and the kidneys receive a \_\_\_\_\_ of the cardiac output.
- $\frac{1}{4}$
  - $\frac{1}{2}$
  - $\frac{1}{3}$
  - $\frac{1}{8}$
47. The trigone of the bladder is formed by “imaginary lines” connecting the
- openings of the two urethras and the ureter
  - the openings of the pelvis and the two ureters
  - the openings of the two ureters and the urethra
  - the openings of the three ureters
48. The type of epithelium from the calyces through the urinary bladder is called
- urinary
  - transitional
  - simple squamous
  - unadapttable
49. The urinary bladder lies \_\_\_\_\_ to the nonpregnant uterus.
- anterior
  - posterior
  - superior
  - inferior

50. Why is the relationship of the ureters to the uterus of concern during hysterectomy?
- a. ureters enter bladder on superior, anterior surface
  - b. ureters enter bladder on inferior, posterior surface
  - c. uterus lies anterior to bladder
  - d. ureters lie posterior to rectum

Part II. Mark "a" if true; mark "b" if false

- F 51. The movement of urine down the ureter is passive.
- F 52. The name of the muscle forming the urinary bladder is the distensor muscle.
- T 53. Incontinence means lack of control of the urinary bladder.
- T 54. The internal sphincter of the male urethra is between the bladder and the prostate gland.
- T 55. The external sphincter of the male urethra is the urogenital diaphragm.
- T 56. The ejaculatory duct enters the urethra below the internal sphincter and above the external sphincter.
- T 57. Therefore, from the correct answer to #56, the internal sphincter can prevent urination during ejaculation.
- T 58. Micturition is another name for urination.
- F 59. The female urethra is an inch long; whereas the male urethra is 12 inches long.
- T 60. Hypophysis means "to grow" in Greek.
- F 61. Excessive growth hormone in the adult causes gigantism.
- T 62. Prolactin receptors can be found in the cerebral cortex.
- F 63. Releasing factors from the pituitary act through the hypophyseal portal system on the hypothalamus.
- F 64. Thyroglobulin is the name for the thyroid hormone circulating in the blood stream.
- T 65. Both the posterior pituitary and the thyroid gland are hormone storage glands.
- F 66. The thyroid shrinks during menstruation and pregnancy.
- F 67. Protein and glucose are normally found in the urine.



- F 68. Oxytocin means "swift birth" and acts primarily on the vagina.
- F 69. ADH (also called vasopressin) is formed in the pancreas.
- F 70. The gall bladder produces bile.
- F 71. The liver stores bile.
- T 72. The fetal liver produces red blood cells.
- T 73. The adult liver stores glycogen so when alcoholics destroy their liver, the brain suffers indirectly because it "burns" glucose.
- F 74. The isthmus of the thyroid gland crosses directly anterior to the cricoid cartilage.
- F 75. The islets of Langerhans secrete pancreatic digestive juices which enter the duodenum.
- F 76. A goiter is caused by too much iodine in the blood.
- F 77. Catecholamines include the hormones secreted by the adrenal cortex.
- F 78. Myxedema refers to lowered mineralocorticoids from the adrenal medulla.
- F 79. The epididymus produces sperm and then stores them.
- F 80. The prepuce is the foreskin removed during an operation called circumcision.

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PROMOTE THE WELL BEING OF OTHERS.