

Name \_\_\_\_\_

**MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.**

- 1) The digestive system processes food, extracts nutrients, and eliminates the residue.
  - A) True
  - B) False
  
- 2) The enteric nervous system regulates much of the digestive activity, but its action depends on the central nervous system.
  - A) True
  - B) False
  
- 3) Both chemical and mechanical digestion start in the mouth and continue in the stomach.
  - A) True
  - B) False
  
- 4) Gastric juice consists entirely of water and hydrochloric acid.
  - A) True
  - B) False
  
- 5) Both pancreatic juice and bile are secreted into the duodenum.
  - A) True
  - B) False
  
- 6) The outermost layer of the digestive tract, which is composed of a thin layer of areolar tissue and simple squamous epithelium, is called the \_\_\_\_\_.
  - A) submucosa
  - B) mucosa (mucous membrane)
  - C) lumen
  - D) serosa
  - E) muscularis externa
  
- 7) Which of the following is *not* an accessory organ of digestion?
  - A) Pancreas
  - B) Liver
  - C) Spleen
  - D) Tongue
  - E) Salivary glands

- 8) Which of the following is the accessory organ of digestion responsible for producing bile?
- A) Liver
  - B) Gallbladder
  - C) Tongue
  - D) Pancreas
  - E) Salivary glands
- 9) The small intestine is suspended from the abdominal wall by the \_\_\_\_\_.
- A) greater omentum
  - B) falciform ligament
  - C) esophageal hiatus
  - D) mesentery
  - E) lesser omentum
- 10) The \_\_\_\_\_ regulates digestive tract motility, secretion, and blood flow. Its neurons are found in the \_\_\_\_\_.
- A) visceral sensory division; muscularis externa and submucosa
  - B) enteric nervous system; submucosa and muscularis externa
  - C) visceral motor division; mucosa and submucosa
  - D) central nervous system; muscularis externa and muscularis mucosae
  - E) autonomic nervous system; serosa
- 11) Acid reflux into the esophagus ("heartburn") is normally prevented by \_\_\_\_\_.
- A) the lower esophageal sphincter (cardius valve)
  - B) pharyngeal constrictors
  - C) pharyngeal and buccal sphincters
  - D) esophageal glands
  - E) the upper esophageal sphincter
- 12) The \_\_\_\_\_ regulates the flow of contents from the stomach to the duodenum.
- A) gastric rugae
  - B) cardiac part
  - C) antrum
  - D) fundus
  - E) pyloric sphincter
- 13) Pepsinogen is produced by \_\_\_\_\_ and is activated by \_\_\_\_\_, which is secreted by \_\_\_\_\_.
- A) chief cells; hydrochloric acid (HCl); parietal cells
  - B) parietal cells; carbonic anhydrase (CAH); chief cells
  - C) chief cells; carbonic anhydrase (CAH); parietal cells
  - D) parietal cells; hydrochloric acid (HCl); chief cells
  - E) enteroendocrine cells; carbonic anhydrase (CAH); parietal cells

- 14) \_\_\_\_\_ is a hormone, whereas \_\_\_\_\_ is an enzyme.
- A) Gastric lipase; histamine
  - B) Secretin; pepsin
  - C) Gastrin; cholecystokinin (CCK)
  - D) Gastrin; secretin
  - E) Enteropeptidase; pepsin
- 15) The \_\_\_\_\_ phase is associated with food stretching the stomach and activating myenteric and vagovagal reflexes, which in turn stimulate gastric secretions.
- A) cephalic
  - B) gastric
  - C) mesenteric
  - D) intestinal
  - E) gastrointestinal
- 16) Which of the following bile components contributes to digestion?
- A) Bilirubin
  - B) Cholesterol
  - C) Bile salts
  - D) Minerals
  - E) Bile pigments
- 17) Which of the following enzymes functions at the lowest pH?
- A) Pancreatic amylase
  - B) Pepsin
  - C) Trypsin
  - D) Salivary amylase
  - E) Dipeptidase
- 18) The \_\_\_\_\_ of the small intestine is/are similar to the \_\_\_\_\_ of the stomach.
- A) villi; pyloric glands
  - B) pyloric sphincter; ileocecal valve
  - C) intestinal crypts; gastric pits
  - D) goblet cells; parietal cells
  - E) rugae; aggregated lymphoid nodules
- 19) Carbohydrate digestion begins in the \_\_\_\_\_, whereas protein digestion begins in the \_\_\_\_\_.
- A) small intestine; stomach
  - B) liver; small intestine
  - C) mouth; stomach
  - D) stomach; small intestine
  - E) mouth; small intestine

- 20) The three most abundant classes of nutrients are \_\_\_\_\_.
- A) proteins, nucleic acids, and carbohydrates
  - B) carbohydrates, proteins, and minerals
  - C) fats, proteins, and carbohydrates
  - D) proteins, fats, and minerals
  - E) triglycerides, starches, and proteins
- 21) The scrotum contains the testes and spermatic cords.
- A) True
  - B) False
- 22) Nurse cells secrete inhibin, which regulates the rate of sperm production.
- A) True
  - B) False
- 23) At early puberty, follicle stimulating hormone (FSH) and luteinizing hormone (LH) stimulate enlargement of the testes.
- A) True
  - B) False
- 24) Which of the following are primary sex organs?
- A) Breasts
  - B) Scent glands
  - C) Ova
  - D) Ovaries
  - E) Uterine tubes
- 25) Whether an organism will be *genetically* male or female is determined by \_\_\_\_\_.
- A) the egg and sperm equally
  - B) the egg
  - C) the sperm
  - D) hormonal, genetic and environmental factors
  - E) prenatal hormone exposure
- 26) The penis is homologous to the \_\_\_\_\_.
- A) labia minora
  - B) clitoris
  - C) urethra
  - D) vagina
  - E) mons pubis

- 27) The \_\_\_\_\_ is the gonad and the \_\_\_\_\_ is the gamete.
- A) testis; ovary
  - B) semen; sperm
  - C) sperm; semen
  - D) testis; semen
  - E) testis; sperm
- 28) The golf-ball sized structure found inferior to the urinary bladder, and surrounding the most proximal portion of the urethra, is called the \_\_\_\_\_.
- A) ejaculatory duct
  - B) bulbourethral gland
  - C) urethra
  - D) prostate
  - E) seminal vesicle
- 29) The \_\_\_\_\_ is the site of sperm maturation and storage.
- A) seminiferous tubules
  - B) spermatic cord
  - C) epididymis
  - D) ductus (vas) deferens
  - E) rete testis
- 30) The deep region of the penis, surrounding the urethra, that engorges with blood during an erection is known as the \_\_\_\_\_.
- A) corpus cavernosum
  - B) scrotum
  - C) ductus (vas) deferens
  - D) epididymis
  - E) corpus spongiosum
- 31) When it is cold, the \_\_\_\_\_ contracts and draws the testes closer to the body to keep them warm.
- A) corpus spongiosum
  - B) pampiniform plexus
  - C) perineum
  - D) cremaster
  - E) corpus cavernosum

- 32) The countercurrent heat exchanger that prevents arterial blood from overheating the testes is the \_\_\_\_\_.
- A) pampiniform plexus of veins
  - B) blood-testis barrier
  - C) scrotal portal system
  - D) epididymis
  - E) rete testis
- 33) Which of the following is true regarding the blood-testis barrier?
- A) It maintains testis temperature at 37°C.
  - B) It prevents blood from getting to the testes.
  - C) It prevents antibodies in the blood from getting to the germ cells.
  - D) It prevents heat loss from the testes.
  - E) It maintains testis temperature at 35°C.
- 34) The penile urethra is enclosed by the \_\_\_\_\_.
- A) prepuce
  - B) corpus cavernosum
  - C) trabecular muscle
  - D) corpus spongiosum
  - E) frenulum
- 35) Which of the following is an androgen?
- A) Testosterone
  - B) Progesterone
  - C) Luteinizing hormone (LH)
  - D) Estrogen
  - E) Follicle-stimulating hormone (FSH)
- 36) Which hormone suppresses spermatogenesis without affecting testosterone secretion?
- A) Inhibin
  - B) Luteinizing hormone (LH)
  - C) Gonadotropin-releasing hormone (GnRH)
  - D) Follicle-stimulating hormone (FSH)
  - E) Testosterone itself
- 37) Changes called male climacteric are a consequence of a(n) \_\_\_\_\_.
- A) increased secretion of FSH and LH
  - B) increased secretion of GnRH
  - C) increased secretion of progesterone
  - D) increased secretion of estrogens
  - E) decreased secretion of testosterone

- 38) \_\_\_\_\_ have 46 chromosomes, whereas \_\_\_\_\_ have 23.
- A) Spermatogonia; primary spermatocytes
  - B) Secondary spermatocytes; primary spermatocytes
  - C) Spermatids; spermatozoa
  - D) Primary spermatocytes; spermatids
  - E) Type A spermatogonia; type B spermatogonia
- 39) The uterus is a thick muscular chamber inferior to the urinary bladder.
- A) True
  - B) False
- 40) The vagina has no glands but it is moistened by mucus from glands in the cervical canal.
- A) True
  - B) False
- 41) The number of ovarian follicles declines with age, leading to a reduction of estrogen levels.
- A) True
  - B) False
- 42) The ovarian cycle typically lasts about 28 days, with day 1 considered to be the first day after ovulation.
- A) True
  - B) False
- 43) Which of the following is a part of the *internal* female genitalia?
- A) Labia minora
  - B) Vagina
  - C) Clitoris
  - D) Mammary gland
  - E) Labia majora
- 44) In which structure does fertilization usually occur?
- A) Ovary
  - B) Uterus
  - C) Uterine tube
  - D) Urethra
  - E) Urinary bladder

- 45) What structure leads from each ovary to the uterus?  
A) Urethra  
B) Vagina  
C) Copulatory duct  
D) Vas deferens  
E) Uterine tube
- 46) After puberty, which epithelium lines the vagina?  
A) Simple columnar epithelium  
B) Stratified squamous epithelium  
C) Transitional epithelium  
D) Simple cuboidal epithelium  
E) Simple squamous epithelium
- 47) Where does an embryo usually attach to its mother?  
A) To the lining of the uterine tube  
B) To the myometrium  
C) To the lining of the vagina  
D) To the endometrium  
E) To the perimetrium
- 48) What determines breast size?  
A) The amount of adipose tissue  
B) Muscle tone  
C) The size of lactiferous sinuses  
D) The amount of mammary gland tissue  
E) The amount of collagenous fiber
- 49) Which hormone acts primarily on the uterus?  
A) Androgen  
B) Luteinizing hormone  
C) Estrogen  
D) Follicle-stimulating hormone  
E) Progesterone
- 50) What is the cessation of menstruation referred to as?  
A) Pubarche                      B) Menopause                      C) Climacteric                      D) Menarche



- 51) In ovulation, after expelling the oocyte the follicle becomes a \_\_\_\_\_ and secretes \_\_\_\_\_.
- A) corpus albicans; progesterone
  - B) corpus albicans; FSH and LH
  - C) corpus luteum; estrogen and progesterone
  - D) corpus albicans; estrogen and progesterone
  - E) corpus luteum; FSH and LH
- 52) Which of these blood hormone levels reaches its maximum during the luteal phase?
- A) Progesterone
  - B) FSH
  - C) LH
  - D) GnRH
  - E) Estradiol
- 53) Which of the following structures is composed of a theca folliculi, granulosa cells, a zona pellucida, and a secondary oocyte?
- A) Secondary follicle
  - B) Corpus albicans
  - C) Corpus luteum
  - D) Primary follicle
  - E) Tertiary follicle
- 54) Which uterine layer is composed of a simple columnar epithelium containing tubular glands?
- A) Fimbrium
  - B) Perimetrium
  - C) Myometrium
  - D) Cervix
  - E) Endometrium
- 55) Which of the following is *not* a component of the vulva?
- A) Cervix
  - B) Labia minora
  - C) Vaginal orifice
  - D) Clitoris
  - E) Mons pubis