Lecture Exam 4 Objectives

Upon completion of this unit, the student should be able to achieve the following performance objectives.

1. List the pathways of excretion in the body.
2. List the sources of nitrogenous wastes in the body.
3. Describe the functions of the urinary system.
4. List the major organs of the urinary system and give the generalized functions of each.
5. Name the parts of a nephron and describe the role of each component in the formation of urine.
6. Describe the renal blood supply and trace blood flow through the specialized vessels of the kidney.
7. Explain the importance of filtration, tubular reabsorption, and tubular secretion in urine formation.
8. Describe the fate of most of the water that leaves the glomerulus.
9. Describe the fate of glucose in the glomerular filtrate.
10. Describe the control mechanisms affecting the volume of urine production.
11. Differentiate between plasma and glomerular filtrate with respect to normal composition.
12. List the substances normally found in urine.
13. Identify the hormones that influence urine output and blood volume and explain their modes of action.
14. List and compare the major fluid compartments and subdivisions in the body.
15. Identify differences in electrolyte and protein concentrations in plasma, interstitial fluid, and intracellular fluid.
16. Discuss pathways by which water enters and leaves the body.
17. Explain the mechanisms that maintain homeostasis of the body fluid.
18. State the normal pH range of blood and interstitial fluid.
19. Describe and contrast the respiratory and urinary mechanisms involved in acid-base balance.
20. Describe the effect of increasing blood P_{CO2} on blood pH.
21. Identify the buffer systems used to maintain the pH of the blood.
22. Discuss the functions of the digestive system.
23. Define and compare mechanical (physical) and chemical digestion.
24. List, in sequence, each of the component parts of the digestive tract from mouth to anus and identify the accessory structures that are located within or open into the gastrointestinal tract.
25. Explain the division, sphincters, layers, and glands of the stomach.
26. Discuss the functions of the stomach and explain the process of the emptying of the stomach.
27. Discuss the size and divisions of the small and large intestines.
28. Discuss the functions of the liver, gall bladder, and pancreas.
29. State the composition and functions of bile.
30. Describe the problem caused by the obstruction of the opening of the pancreatic duct in the duodenum.

31. Outline the digestive sequence for carbohydrates, fats, and proteins, including the enzymes, hormones, anatomical structures, and end products.
32. Describe the hormonal control of digestion, stating the source and function of the following digestive hormones: gastrin, secretin, and CCK.
33. Describe the different types of gastrointestinal movements, such as peristalsis and segmentation, characteristic of the digestive system.
34. State the function of the villi in the lining of the small intestine.
35. State the functions of the small intestine and colon.
36. Define the following terms: beta oxidation, deamination, gluconeogenesis, glycogenesis, glycogenolysis, lipogenesis, lipolysis, and ketogenesis.
37. Describe the functions of the male reproductive system.
38. List the essential and accessory organs of the male reproductive system and give the generalized function of each.
39. Describe the process of spermatogenesis.
40. Discuss the composition and function of semen.
41. Trace the passage of sperm from the point of formation to outside the body.
42. State the secondary male sex characteristics expressed at puberty.
43. Describe the involvement of the nervous system with respect to erection, emission, and ejaculation.
44. Describe the functions of the female reproductive system.
45. List the essential and accessory sex organs of the female reproductive system and give the generalized function of each.
46. Describe the process of oogenesis.
47. Discuss the structure of the uterus including the layers and divisions.
48. Identify the structures that together constitute the female external genitals.
49. Explain the hormonal control of the cyclical changes that occur in the ovaries.
50. Identify the phases of the endometrial (uterine) or menstrual cycle.
51. State the secondary female sex characteristics expressed at puberty.
52. Give the endocrine functions of the placenta.
53. Describe the following hormones as to site of production, function, and target: follicle stimulating hormone (FSH); luteinizing hormone (LH) also known as interstitial cell stimulating hormone (ICSH); prolactin; oxytocin; testosterone, estrogens, progesterone, and human chorionic gonadotropin (hCG).
54. Discuss male and female fertility.
55. Review all the body systems and how they work together to keep the body in a homeostatic state.