

Mr. Epithelium's Anatomy and Physiology Test SSSS

You have 50 minutes to complete this test packet. One 8.5 x 11 cheat sheet is allowed, along with 1 non-programmable calculator dedicated to computation.

Good luck!

All questions are worth 1 point unless otherwise specified

Name(s): _____ Score: ____/171 + ____/15 bonus points= ____/186

Part I The Cardiovascular and Lymphatic System

1. (2pts) List the 2 main parts of the cardiovascular system

2. (7pts) The heart pumps blood through the blood vessels which carries many components all over the body. Which of the following choices make up those components? (You may choose more than one answer)

- A. Blood
- B. Digestive wastes
- C. White blood cells
- D. Red blood cells
- E. Neural impulses
- F. Hormones
- G. Oxygen

3. (2pts) Blood flows out of the right ventricle into the _____ circuit and back into the _____.

4. About how many times does the heart beat per day?

- A. 80,000
- B. 100,000
- C. 120,000
- D. 140,000

5. Which chamber of the heart collects deoxygenated blood returning from the body?

- A. Right Atrium
- B. Left Atrium
- C. Right Ventricle

D. Left Ventricle

6. Which chamber of the heart pushes blood into the body?

A. Right Atrium

B. Left Atrium

C. Right Ventricle

D. Left Ventricle

7. Which chamber of the heart forces blood into the lungs via the pulmonary valve?

A. Right Atrium

B. Left Atrium

C. Right Ventricle

D. Left Ventricle

8. Which chamber of the heart collects oxygenated blood returning from the lungs?

A. Right Atrium

B. Left Atrium

C. Right Ventricle

D. Left Ventricle

9. What is the largest artery in the human body?

A. Great Subclavian Artery

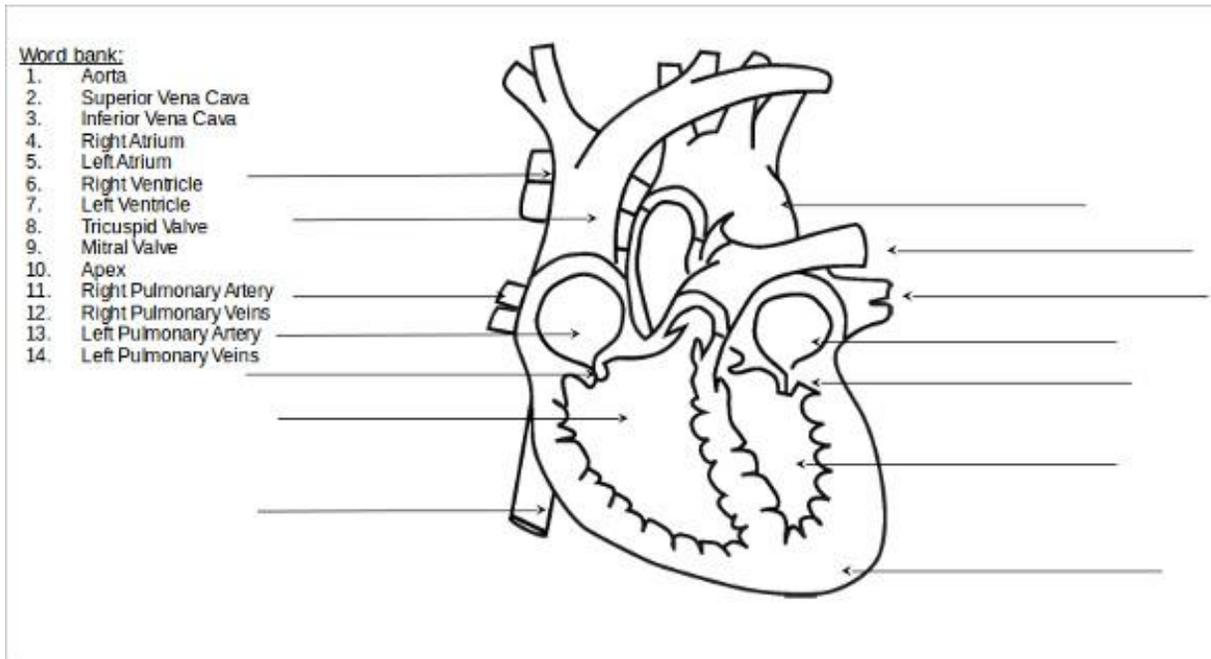
B. Saphenous Artery

C. Vena Cava

D. Aorta

10. The Mitral and Tricuspid Valves make up the _____ valves

11-24 Label the following diagram of the heart (Figure 1.1).



25. In Figure 1.1, label the interventricular septum with an arrow.

26. (2pts) In Figure 1.1, label the pulmonary and aortic valve with 2 arrows.

27. (2pts) Give a short description of the Superior Vena Cava:

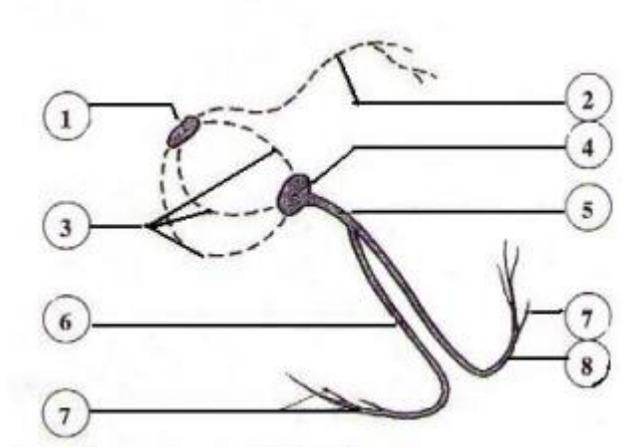
28. (2pts) Give a short description of the Inferior Vena Cava:

29. (2pts) Give a short description of the Ascending Aorta:

30. (2pts) Give a short description of the Descending Aorta:

31-38 Label the parts of the electrical system of the heart in the picture below (Figure 1.2)

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.



39. Which number (1-8) in Figure 1.2 is the pacemaker of the heart?

40. Which numbers (1-8) in Figure 1.2 carries electricity through the atria?

41. Which number (1-8) in Figure 1.2 is the last part of the conduction through the atria?

42. Which number (1-8) in Figure 1.2 distributes electrical energy to the myocardium?

43. (4pts) Draw a simple ECG below with the P wave, QRS complex, and the T wave.

44. What does EKG stand for?

45. (2pts) What does the EKG do?

46. (2pts) (Circle or underline each correct choice) Ventricular contraction occurs during (systole, diastole), and ventricular relaxation occurs during (systole, diastole)

47. (2pts) Describe cardiac output:

48. How would you calculate stroke volume?

39. How would you calculate Heart rate?

40. How would you calculate Cardiac output?

41. How would you calculate Pulse pressure?

42. Give the 2 equations for Mean arterial pressure.

43. (5pts) Name some factors that affect total peripheral resistance.

44-48. Match each vessel to its description:

____ Arteries	A. Small versions of veins, carry blood from capillaries to veins
____ Arterioles	B. Largest vessels, carry blood from the heart and into the systemic circuit
____ Capillaries	C. Smallest vessels, transfer materials to and from blood.
____ Venules	D. Carry blood back to heart, have valves in them to stop and prevent back flow towards capillaries
____ Veins	E. Smaller than arteries, carry blood to the capillaries for nutrient exchange

49. (3pts) Name the 3 main plasma proteins:

50. Plasma makes up ____% of total blood.

_____51. Is lymph circulation actively pumped by the heart?

52. Lymph flow is driven by: (You may choose more than one)

A. Smooth muscle in lymph vessels

B. Heart pump

C. Skeletal-muscle pump

D. Pressure gradients

E. Respiratory pump

53. Lymph vessels collect excess fluid from the _____ and return them back into circulation

54. (12pts) List the 12 sites where lymph travels in lymph circulation.

55. (5pts max) Name at most 5 patterns that can affect the cardiovascular system.

Part II Excretory System

56. (4pts) Name the 4 basic functions of the excretory system:

57. The kidney receives ____ - ____% of cardiac output

A. 15-20

B. 20-25

C. 25-30

D. 30-35

58. The _____ carries urine from the kidneys to the bladder

59. The bladder holds up to _____ of urine

A. 10 oz

B. 12 oz

C. 14 oz

D. 16 oz

60. The _____ surrounds the nephron loop

A. Vasa Recta

B. Capillary bed

C. Henle Network

D. Renal system

61. Urine collects in the _____

62. What is the normal GFR?

A. 100 mL/min

B. 110 mL/min

C. 125 mL/min

D. 150 mL/min

63-69. Give a brief description of each disease:

63. (2pts) Obstructive disorders:

64. (2pts) UTI's:

65. (2pts) Glomerular Disorders:

66. (2pts) Renal Failure:

67. (2pts) Incontinence:

68. (2pts) Prostatitis:

69. (2pts) BPH:

70. The entire plasma volume is filters about _____ times a day.

71-76. Label the parts of the nephron:

71.

72.

73.

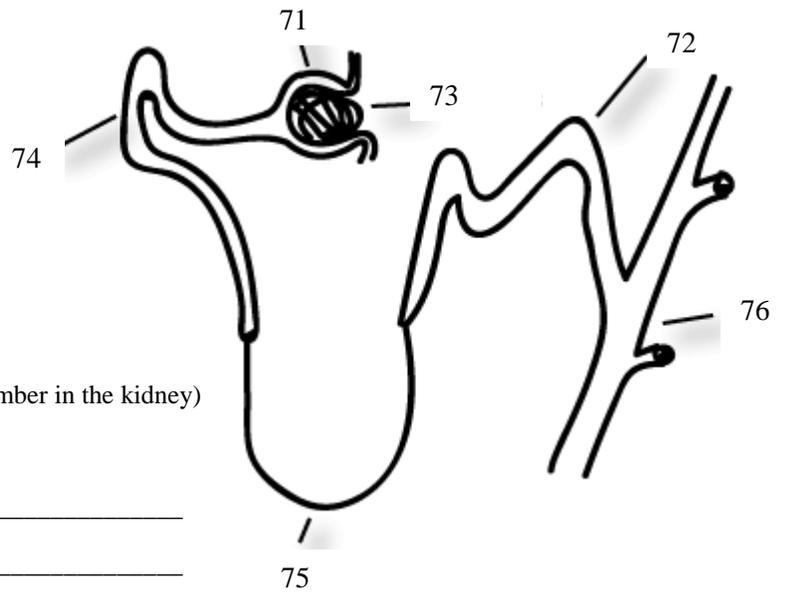
74.

75.

76.

____77. Where does 76 eventually drain into? (use a number in the kidney)

78. (5pts) Name the substances that can pass into 73.



79-91. Label the parts of the kidney:

79.

80.

81.

82.

83.

84.

85.

86.

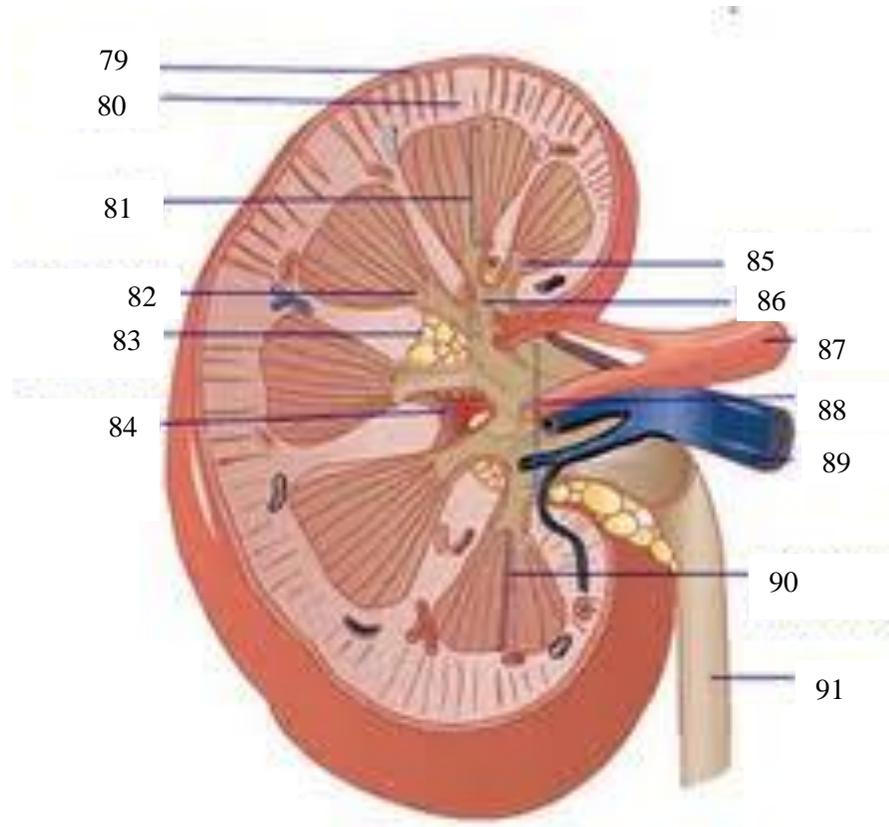
87.

88.

89.

90.

91.



92. 91 eventually leads to the _____,
which then leads to the _____

93. Which kidney is this? _____

Part III Challenge Problems

Specific scoring (Also tiebreaker): If score in this section (out of 28) is greater than 10, add 5 bonus points. Greater than 20, add 10. Greater than 25, add 15.

94. Unscramble the 3 layers of the heart wall starting from the outer to inner: (use the letter in the space)

A. Myocardium

B. Endocardium

C. Epicardium

95. (2pts) Backflow of blood, also known as _____, can be prevented with the help of _____.

96. The right coronary artery supplies blood to the: (choose all that apply)

- A. The right atrium
- B. Parts of the right ventricle
- C. The SA node
- D. The AV node
- E. The Purkinje Fibers
- F. The superficial surface of the left atrium
- G. Parts of the left ventricle
- H. The left atrium

97. The characteristic of cardiac muscle tissue is that it can contract on its own without neural or stimulation, also called _____

98. As atrial systole ends, atrial diastole begins. Which ventricular phase (systole, diastole) occurs fully during atrial diastole?

99. Which two centers make up collectively that cardiac center of the medulla oblongata?

_____, _____

100. _____ is the duration of ventricular diastole

101. Vessel walls have 3 distinct layers, name all 3 from innermost to outermost.

102. _____ are also referred to as resistance vessels.

103. (2pts) The heart has 2 distinct sounds when beating, a 'lubb' and a 'dupp'. Which is the S1 sound and which is the S2 sound?

'lubb' is the _____ sound and 'dupp' is the _____ sound.

104. A metarteriole is commonly known as a _____ arteriole

105. As filtrate traverses the renal tubule, it's called _____

106. (6pts) Our bodies form 3 important organic wastes, shown below. List beside each how that organic waste was created.

1. Urea

2. Uric Acid

3. Creatine

107. (3pts) Urine formation occurs in 3 basic steps. List all 3 below:

108. The conversion of the plasma protein fibrinogen to fibrin removes the clotting proteins, leaving a fluid known as _____

109. (4pts) Platelet production by megakaryocytes can be sped up by:
