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Course title: Cardiovascular System: Anatomy & Physiology

The CARDIOVASCULAR SYSTEM: BLOOD

1. Which of the following makes up the cardiovascular system?
(A): blood
(B): heart
(C): vessels
(D): all of the above

2. Blood moves _____ to the lungs for exhalation from the body.
(A): water
(B): nitrogen
(C): oxygen
(D): carbon dioxide

3. In normal blood, about _____ percent of a sample is erythrocytes.
(A): 15
(B): 30
(C): 45
(D): 60

4. Blood constitutes approximately _____ percent of adult body weight.
(A): 8
(B): 15
(C): 20
(D): 28

5. The pH of blood averages about _____.
(A): 7.1
(B): 7.4
(C): 7.6
(D): 7.8

6. The _____ stem cell is the zygote, or fertilized egg.
(A): Totipotent
(B): Pluripotent
(C): Hemopoietic
(D): Lymphoid

7. Thrombopoietin is produced by the liver and kidneys.
(A): True
(B): False

8. The _____ are commonly known as a red blood cell (or RBC).
(A): thrombopoietin
(B): cytokines
(C): erythrocytes
(D): interleukins

9. Immature erythrocyte is known as a _____.
(A): reticulocyte
(B): reticula
(C): red bone marrow
(D): interleukins

10. A molecule of hemoglobin contains _____ globin proteins.
(A): two
(B): four
(C): six
(D): eight

11. Production of erythrocytes in the marrow occurs at the rate of more than _____ cells per second.
(A): 90 thousand
(B): 500 thousand
(C): 2 million
(D): 0.5 million

12. When the number of RBCs or hemoglobin is deficient, the general condition is called _____.
(A): emigration
(B): diapedesis
(C): anemia
(D): positive chemotaxis

13. Anemias caused by faulty or decreased RBC production include which of the following?
(A): sickle cell anemia
(B): iron deficiency anemia
(C): vitamin deficiency anemia
(D): all of the above

14. The **most** severe form of _____ is called Cooley's anemia.
(A): sickle cell anemia
(B): thalassemia
(C): vitamin deficiency anemia
(D): iron deficiency anemia

15. Leukocytes are _____ than erythrocytes.
(A): larger
(B): smaller
(C): more numerous
(D): immature

16. There are _____ leukocytes per µL.
(A): 1m to 2m
(B): 5000 to 10,000
(C): 25,000 to 30,000
(D): 100,000 to 150,000

17. _____ are the **most** common of all the leukocytes.
(A): Eosinophils
(B): Neutrophils
(C): Basophils
(D): Vitaphils

18. _____ live for many years in a human body.
(A): Natural Killer cells
(B): Neutrophils
(C): Memory cell
(D): T cell

19. Monocytes normally represent _____ percent of the total leukocyte count.
(A): 2–8
(B): 10-15
(C): 25–30
(D): 35-45

20. Which of the following is a disorder of Platelets?
(A): Thrombocytosis
(B): Thrombocytopenia
(C): Leukemia
(D): Both A & B

21. _____ is the process by which the body seals a ruptured blood vessel and prevents further loss of blood.
(A): Hemostasis
(B): Vascular spasm
(C): Fibrinolysis
(D): Antithrombin

THE CARDIOVASCULAR SYSTEM: THE HEART

22. The human heart is located within the _____ cavity, medially between the lungs in the space known as the mediastinum.
(A): pelvic
(B): sinus
(C): thoracic
(D): abdominal

23. Proper positioning of the hands on the sternum to perform CPR would be between the lines at _____.
(A): T1 and T5
(B): T4 and T9
(C): T6 and T10
(D): T9 and T12

24. How many compressions per minute are applied in a standard CPR?
(A): 100
(B): 60
(C): 90
(D): 120

25. The position of the heart in the torso between the vertebrae and sternum allows for individuals to apply an emergency cardiopulmonary resuscitation (CPR) if the heart of a patient should stop.
(A): True
(B): False

26. The shape of the heart is similar to a pine-cone.
(A): True
(B): False

27. The human heart consists of _____ chambers.
(A): four
(B): five
(C): six
(D): seven

28. The _____ transports blood to and from the lungs.
(A): systemic circuit
(B): cardiac circuit
(C): pulmonary circuit
(D): Both A & B

29. The right ventricle pumps deoxygenated blood into the _____.
(A): superior vena cava
(B): inferior vena cava
(C): aorta
(D): pulmonary trunk

30. The membrane that directly surrounds the heart is called the _____.
(A): sulcus
(B): pericardium
(C): mesothelium
(D): auricle

31. The pericardial membrane that surrounds the heart consists of _____ layers and the pericardial cavity.
(A): three
(B): five
(C): seven
(D): four

32. The deep _____ is located between the atria and ventricles.
(A): auricle
(B): circumflex artery
(C): coronary sulcus
(D): interventricular sulcus

33. The middle and thickest layer of the heart is the _____, made largely of cardiac muscle cells.
(A): endocardium
(B): pericardium
(C): endothelium
(D): myocardium

34. The _____ of cardiac muscle tissue contributes significantly to the heart's ability to pump blood effectively.
(A): circular pattern
(B): swirling pattern
(C): straight pattern
(D): none of the above

35. _____ is the innermost layer of the heart wall.
(A): Myocardium
(B): Endocardium
(C): Pericardium
(D): Endothelium

36. The septum between the atria and ventricles is known as the _____ septum.
(A): atrioventricular
(B): interventricular
(C): interatrial
(D): atrioratrial

37. The valves at the openings that lead to the pulmonary trunk and aorta are generically known as _____ valves.
(A): semilunar
(B): atrioventricular
(C): aoratory
(D): interventricular

38. The_____ allowed blood in the fetal heart to pass directly from the right atrium to the left atrium.
(A): fetal septum
(B): interatrial ovale
(C): fetal ovale
(D): foramen ovale

39. One very common form of interatrial septum pathology is patent foramen ovale, which occurs when the septum primum does not close at birth, and the fossa ovalis is unable to fuse.
(A): True
(B): False

40. As much as _____ percent of the general population may have a patent foramen ovale.
(A): 1-5
(B): 10-15
(C): 20–25
(D): 30-40

41. Which of the following symptom of coarctation of the aorta can be seen in older individuals?
(A): Dizziness
(B): Fainting
(C): Chest pain
(D): All of the above

42. Septal defects are commonly first detected through _____.
(A): blood test
(B): auscultation
(C): MRI
(D): Ultrasound

43. _____ is a large coronary vein that drains the heart myocardium and empty into the right atrium.
(A): Superior vena cava
(B): Coronary sinus
(C): Inferior vena cava
(D): Atrium vena cava

44. The right ventricle receives blood from the right atrium through ____ valve.
(A): bicuspid
(B): mitral
(C): semilunar
(D): tricuspid

45. Chordae tendineae are composed of approximately _____ percent of collagenous fibers.
(A): 80
(B): 60
(C): 40
(D): 35

46. There are _____ papillary muscles in the right ventricle.
(A): three
(B): four
(C): two
(D): six

47. The opening between the left atrium and ventricle is guarded by the _____ valve.
(A): tricuspid
(B): semilunar
(C): mitral
(D): right atrioventricular

48. _____ is used in the diagnosis of valve disorders.
(A): MRI
(B): Echocardiogram
(C): X-ray
(D): CT scan

49. _____ supply blood to the myocardium and other components of the heart.
(A): Jugular arteries
(B): Femoral arteries
(C): Coronary arteries
(D): Abdominal arteries

50. The circumflex artery arises from the right coronary artery.
(A): True (B): False

51. _____ is the formal term for what is commonly referred to as a heart attack.
(A): Meningitis
(B): Myocardial infarction (MI)
(C): COPD
(D): Appendicitis

52. The ____ cardiac vein initially parallels the anterior interventricular artery and drains the areas supplied by this vessel.
(A): great
(B): small
(C): middle
(D): posterior

53. _____ is a procedure in which the occlusion is mechanically widened with a balloon.
(A): Angioplasty
(B): Open Heart Surgery
(C): Coronary Artery Bypass Surgery
(D): Atrial Fibrillation Ablation

54. _____ has the highest inherent rate of depolarization and is known as the pacemaker of the heart.
(A): Sinoatrial (SA) node
(B): Bachmann's bundle
(C): Interatrial band
(D): Bundle of His

55. The normal cardiac rhythm is established by the _____.
(A): sinoatrial (SA) node
(B): atrioventricular node
(C): bachman's bundle
(D): anterior intermodal

56. The atrioventricular (AV) node is a _____ clump of specialized myocardial conductive cells.
(A): first
(B): second
(C): third
(D): fourth

57. Calcium ions play _____ critical roles in the physiology of cardiac muscle.
(A): seven
(B): five
(C): three
(D): two

58. In a normal, healthy heart, which of the following are the **only** two audible heart sounds?
(A): A1 and A2
(B): S1 and S2
(C): H1 and H2
(D): C1 and C2

59. ____ is the condition in which resting heart rate drops below 60 bpm.
(A): Bradycardia
(B): Tachycardia
(C): Cardiac reflexes
(D): Broken Heart Syndrome

THE CARDIOVASCULAR SYSTEM: BLOOD VESSELS AND CIRCULATION

60. In blood vessels _____ is a hollow passageway through which blood flows.
(A): vasa vasorum
(B): tunica intima
(C): lumen
(D): internal elastic membrane

61. Larger arteries and veins contain small blood vessels within their walls known as the _____.
(A): vasa vasorum
(B): internal elastic membrane
(C): tunica intima
(D): tunica media

62. _____ increases blood flow as the smooth muscle relaxes, allowing the lumen to widen and blood pressure to drop.
(A): Vasoconstriction
(B): Tunica externa
(C): Vasodilation
(D): Internal elastic membrane

63. _____ are referred as resistance vessels.
(A): Capillaries
(B): Fenestrated Capillaries
(C): Arterioles
(D): Arteries

64. A capillary is a microscopic channel that supplies blood to the tissues themselves thru a process called _____.
(A): microcirculation
(B): perfusion
(C): vasoconstriction
(D): none of the above

65. _____ is a type of vessel that has structural characteristics of both an arteriole and a capillary.
(A): Precapillary
(B): Venules
(C): Arteriole
(D): Metarteriole

66. _____ is a blood vessel that conducts blood toward the heart.
(A): Vein
(B): Capillary
(C): Artery
(D): Arteriole

67. Many veins have valves to prevent back flow of blood.
(A): True
(B): False

68. Systemic veins contain approximately _____ percent of the blood volume at any given time.
(A): 25
(B): 40
(C): 50
(D): 64

69. Approximately ____ percent of the venous blood is located in venous networks within the liver, bone marrow, and integument.
(A): 12
(B): 18
(C): 21
(D): 33

70. Blood flow refers to the movement of blood through a vessel, tissue, or organ, and is usually expressed in terms of volume of blood per unit of time.
(A): True
(B): False

71. The term blood pressure without any specific descriptors typically refers to _____ blood pressure.
(A): systemic arterial
(B): systemic vein
(C): systemic capillary
(D): systemic arteriole

72. _____ is a normal adult blood pressure.
(A): 120/80
(B): 155/95
(C): 170/99
(D): 188/100

73. The difference between the systolic pressure and the diastolic pressure is the _____.
(A): mean arterial pressure
(B): pulse pressure
(C): differential pressure
(D): clinical pressure

74. A condition called _____ is commonly accompanied by ischemia.
(A): hypoglycemia
(B): hypothermia
(C): hypoxia
(D): hyperoxia

75. Which of the following variables influence blood flow and blood pressure?
(A): Cardiac output and compliance
(B): Volume and viscosity of the blood
(C): Blood vessel length and diameter
(D): all of the above

76. Which of the following factor affects blood flow?
(A): radius
(B): vessel length
(C): viscosity
(D): all of the above

77. Volumes of fluid move from an area of higher pressure in a capillary bed to an area of lower pressure in the tissues via _____.
(A): reabsorption
(B): absorption
(C): pressure pumping
(D): filtration

78. Endocrine control over the cardiovascular system involves the catecholamines, epinephrine and norepinephrine, as well as several hormones that interact with the kidneys in the regulation of blood volume.
(A): True
(B): False

79. Chronically elevated blood pressure is known clinically as _____.
(A): vasoconstriction
(B): hypotension
(C): hypertension
(D): hemorrhage

80. _____ in adults is typically caused by hemorrhage.
(A): Cardiogenic shock
(B): Hypovolemic shock
(C): Vascular shock
(D): Obstructive shock