Biol-131 Exam 2 B

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

1) Which of the following would decrease the velocity of blood flow?
A) Increased viscosity
B) Decreased vasomotion
C) Increased vessel radius
D) Increased blood pressure
E) Increased afterload

2) Which vessels have the thickest tunica media?
A) Small veins
B) Capillaries
C) Small arteries
D) Large veins
E) Large arteries

3) Lymphatic vessels recover about _____ of the fluid filtered by capillaries.
A) 15% B) 5% C) 85% D) 25% E) 50%

4) Where is the greatest volume of blood found in the body?
A) Arteries
B) Pulmonary circuit
C) Heart
D) Capillaries
E) Veins

5) The systemic circuit contains oxygen-rich blood only.
A) True
B) False

6) In a normal ECG, the deflection that is generated by ventricular repolarization is called the _____.
A) R wave B) T wave C) QRS wave D) P wave E) S wave

7) Which of the following carry oxygen-poor blood?
A) Aorta and vena cavae
B) Pulmonary veins and pulmonary arteries
C) Aorta and pulmonary veins
D) Pulmonary veins and vena cavae
E) Venae cavae and pulmonary arteries

8) Lymph is similar to blood plasma, but very low in _____.
A) carbon dioxide
B) metabolic waste
C) electrolytes
D) sodium and potassium
E) protein

9) Special lymphatic vessels, called lacteals, absorb dietary _____ that are not absorbed by the blood capillaries.
A) amino acids
B) lipids
C) vitamins
D) glucose
E) water

10) _____ lacks the capacity to remember a pathogen or react differently to it in the future, whereas _____ utilizes memory cells to adapt to a given pathogen and ward it off more easily in the future.
A) A natural killer cell; a macrophage
B) Innate immunity; adaptive immunity
C) Innate immunity; cytotoxicity
D) Adaptive immunity; innate immunity

11) Immune surveillance is a process in which _____ nonspecifically detect and destroy foreign cells and diseased host cells.
A) dendritic cells
B) macrophages
C) reticular cells
D) natural killer (NK) cells
E) T lymphocytes (T cells)

12) What are the afferent vessels that carry blood back to the heart?
A) Arterioles
B) Capillaries
C) Veins
D) Arteries

13) What is taken up by the capillaries at their venous end?
A) Organic nutrients
B) Glucose
C) Oxygen
D) Waste products
E) Amino acids

14) The chordae tendinae of the AV valves are anchored to the _____ of the ventricles.
A) trabeculae carnae
B) interventricular septum
C) papillary muscles
D) pectinate muscles
E) interatrial septum

15) How is venous return to your heart affected when you go for an easy jog?
A) It is decreased due to decreased skeletal muscular pump activity
B) It is decreased due to increased skeletal muscular pump activity
C) It is increased due to decreased skeletal muscular pump activity
D) It is increased due to increased skeletal muscular pump activity

16) Removal of the _____ would be more harmful to a one-year-old child than an adult.
A) appendix
B) palatine tonsil
C) spleen
D) thymus
E) lymph node

17) Which of the following is the most superficial layer enclosing the heart?
A) Parietal pericardium
B) Epicardium
C) Endocardium
D) Visceral pericardium
E) Myocardium

18) If the sinoatrial (SA) node is damaged, the heart will likely beat at _____ bpm.
A) 0 to 10 B) 20 to 40 C) 10 to 20 D) 70 to 80 E) 40 to 50

19) Which of the following forces does *not* help lymph to flow?
A) Rhythmic contractions of lymphatic vessels
B) Arterial pulsations squeezing lymphatic vessels
C) The lymphatic node pump
D) The thoracic pump
E) The skeletal muscle pump

20) Which of the following would decrease capillary filtration?
A) Dietary protein deficiency
B) Increased permeability of lymphatic capillaries
C) Dehydration
D) Increased capillary permeability
E) Obstructed venous return

21) In people who stand for long periods, blood tends to pool in the lower limbs and this may result in varicose veins. What causes the varicose veins?
A) A ruptured aneurysm in a vein
B) An aneurysm or weak point in a vein
C) Failure of the lymphatic valves
D) An aneurysm or weak point in an artery
E) Failure of the venous valves

22) The _____ valve regulates the flow of blood between the right ventricle and the vessels leading to the lungs.
A) right atrioventricular
B) aortic
C) mitral
D) pulmonary
E) left atrioventricular

23) During exercise, arterioles to the skeletal muscles _____.
A) dilate in response to increased O2 and decreased CO2
B) constrict in response to increased muscle metabolites
C) constrict in response to increased O2 and decreased CO2
D) dilate in response to increased muscle metabolites

24) The _____ are the superior chambers of the heart and the _____ are the inferior chambers of the heart.
A) left ventricles; right ventricles
B) ventricles; atria
C) visceral percardia; parietal pericardia
D) atria; ventricles
E) left atria; right atria

25) What is the most important force driving filtration at the arterial end of a capillary?
A) Tissue fluid colloid osmotic pressure
B) Interstitial hydrostatic pressure
C) Oncotic pressure
D) Blood colloid osmotic pressure
E) Blood hydrostatic pressure

26) Which of the following is a portal system?
A) Heart → artery → artery → arteriole → capillary bed → venule → vein → heart
B) Heart → artery → vein → heart
C) Heart → artery → arteriole → capillary bed → arteriole → capillary bed → venule → vein → heart
D) Heart → artery → arteriole → capillary bed → venule → vein → vein → heart

27) The serum used for emergency treatment of snakebites stimulates _____ immunity.
A) artificial active
B) natural passive
C) natural active
D) artificial passive

28) One characteristic of the immune response is specificity. This means that _____.
A) immunity is directed against a particular pathogen
B) immunity starts in defined organs in the body
C) immunity starts in specialized tissues in the body
D) immunity is carried on by a specific group of tissues of the immune system
E) immunity is carried on by a specific group of cells of the immune system

29) What is the path of blood flow from the heart to the lung tissues and back to the heart?
A) Left ventricle → aorta → brachiocephalic artery → lung tissues → bronchial veins → brachiocephalic vein → superior vena cava → right atrium
B) Left ventricle → aorta → bronchial arteries → lung tissues → bronchial veins → azygos vein → superior vena cava → right atrium
C) Right ventricle → brachiocephalic arteries → lung tissues → brachiocephalic veins → inferior vena cava → left atrium
D) Right ventricle → pulmonary trunk → pulmonary arteries → lung tissues → pulmonary veins → left atrium

30) Which of the following is associated with vasomotion?
A) Elastic tissue in the tunica externa
B) Collagen and elastic tissue in the tunica media
C) Fenestrations in the tunica externa
D) Endothelium in the tunica interna
E) Smooth muscle in the tunica media

31) _____ are antimicrobial proteins.
A) Bradykinins
B) Prostaglandins
C) Interferons
D) Cytokines
E) Kinins

32) The long plateau in the action potential observed in cardiomyocytes is probably related with _____ staying longer in the cytosol.
A) $K^+$
B) $Na^+$
C) $Ca^{2+}$
D) $Cl^-$
E) $Na^+$, $K^+$, and $Ca^{2+}$

33) What is the most important force in venous flow?
A) The pressure generated by the heart
B) Cardiac suction
C) The one way flow due to valves
D) The thoracic (respiratory) pump
E) The skeletal muscle pump

34) Any abnormal cardiac rhythm is called a(n) _____.
A) nodal rhythm
B) ectopic focus
C) arrhythmia
D) sinus rhythm
E) heart block

35) Blood in the heart chambers provides most of the myocardium's oxygen and nutrient needs.
A) True
B) False

36) A bee sting can trigger a massive release of histamine, which causes _____ and a(n) _____ in arterial blood pressure.
A) vasoconstriction; oscillation
B) vasoconstriction; decrease
C) vasoconstriction; increase
D) vasodilation; increase
E) vasodilation; decrease

37) Vaccination stimulates _____ immunity.
A) artificial active
B) innate
C) natural passive
D) artificial passive
E) natural active

38) Pulmonary arteries have _____ blood pressure compared to systemic arteries.
A) considerably higher
B) considerably lower
C) a little lower
D) similar
E) a little higher

39) A pyrogen is a substance that causes _____.
A) fever
B) opsonization
C) complement fixation
D) cytolysis
E) inflammation

40) Which is the correct path of an electrical excitation from the pacemaker to a cardiomyocyte in the left ventricle (LV)?
A) Atrioventricular (AV) node → subendothelial conducting network → atrioventricular (AV) bundle → sinoatrial (SA) node → cardiomyocyte in LV
B) Sinoatrial (SA) node → atrioventricular (AV) node → Subendothelial conducting network → atrioventricular (AV) bundle → cardiomyocyte in LV
C) Sinoatrial (SA) node → atrioventricular (AV) node → atrioventricular (AV) bundle → Subendothelial conducting network → cardiomyocyte in LV
D) Sinoatrial (SA) node → atrioventricular (AV) bundle → atrioventricular (AV) node → Subendothelial conducting network → cardiomyocyte in LV
E) Atrioventricular (AV) node → sinoatrial (SA) node → atrioventricular (AV) bundle → Subendothelial conducting network → cardiomyocyte in LV

41) Pericardial fluid is found between the _____ and the _____.
A) visceral pericardium; myocardium
B) epicardium; myocardium
C) parietal; visceral membranes
D) visceral pericardium; epicardium
E) myocardium; endocardium

42) Which of the following routes of blood flow is correct?
A) Heart → distributing artery → conducting artery → arteriole → capillary → venule → large vein → medium vein → heart
B) Heart → conducting artery → distributing artery → arteriole → capillary → venule → medium vein → large vein → heart
C) Heart → venule → medium vein → large vein → capillary → conducting artery → distributing artery → arteriole → heart
D) Heart → large vein → medium vein → venule→ capillary → arteriole → distributing artery → conducting artery → heart

43) The _____ provides most of the $Ca^{2+}$ needed for myocardial contraction.
A) cytoskeleton
B) Golgi apparatus
C) extracellular fluid
D) mitochondria
E) sarcoplasmic reticulum

44) Hypertension is commonly considered to be a chronic resting blood pressure higher than _____.

A) 140/90 B) 130/60 C) 110/75 D) 180/90 E) 200/90

45) The _____ performs the work of the heart.

A) pericardial cavity
B) myocardium
C) fibrous skeleton
D) epicardium
E) endocardium

46) _____ are the largest of the lymphatic vessels, and they empty into the _____.

A) Lymphatic trunks; subclavian veins
B) Lymphatic trunks; collecting ducts
C) Collecting ducts; subclavian arteries
D) Collecting ducts; subclavian veins
E) Lymphatic trunks; subclavian arteries

47) The area where the major vessels lead to and from the heart's chambers is called the _____ of the heart. The pointy, inferior portion is called the _____.

A) atrium; ventricle
B) apex; base
C) endocardium; epicardium
D) ventricle; atrium
E) base; apex

48) Alternative routes of blood supply are called _____.

A) capillary beds
B) anastomoses
C) metarterioles
D) thoroughfare channels
E) preferred channels

49) Why does our blood pressure generally go up as we age?

A) Our veins get 'hard' and absorb less systolic force
B) Our arteries get 'hard' and absorb less systolic force
C) Our veins get 'hard' and absorb less diastolic force
D) Our arteries get 'hard' and absorb less diastolic force

50) Opening and closing of the heart valves is caused by _____.
A) valves contracting and relaxing
B) osmotic gradients
C) pressure gradients
D) gravity
E) breathing

51) _____ are found especially in the mucous membrane, standing guard against parasites and allergens.
A) Monocytes
B) Lymphocytes
C) Neutrophils
D) Basophils
E) Eosinophils

52) The _____ is the pacemaker that initiates each heart beat.
A) sympathetic division of the nervous system
B) cardiac conduction system
C) atrioventricular (AV) node
D) sinoatrial (SA) node
E) autonomic nervous system

53) When sodium channels are fully open, the membrane of the ventricular cardiomyocyte _____.
A) sharply depolarizes
B) has no response
C) plateaus
D) sharply hyperpolarizes
E) sharply repolarizes

54) T cells undergo positive selection in the thymus, which means they _____.
A) develop surface antigen receptors
B) multiply and form clones of identical T cells
C) remain alive but unresponsive
D) die and macrophages phagocytize them
E) react against self antigens

55) The right atrioventricular valve (tricuspid) regulates the opening between the _____ and the _____.
A) right atrium; left ventricle
B) right atrium; right ventricle
C) right atrium; left atrium
D) left ventricle; right ventricle
E) left atrium; left ventricle

Answer Key
Testname: BIOL-131 EXAM 2 B.

1) A
2) E
3) A
4) E
5) B
6) B
7) E
8) E
9) B
10) B
11) D
12) C
13) D
14) C
15) D
16) D
17) A
18) E
19) C
20) C
21) E
22) D
23) D
24) D
25) E
26) C
27) D
28) A
29) D
30) E
31) C
32) C
33) E
34) C
35) B
36) E
37) A
38) B
39) A
40) C
41) C
42) B

Answer Key
Testname: BIOL-131 EXAM 2 B.

43) E
44) A
45) B
46) D
47) E
48) B
49) B
50) C
51) E
52) D
53) A
54) B
55) B