

Name _____

Matching

Choices may be used more than once or not at all.

1-5. Trace the flow of blood through the heart starting at the vena cava.

- | | | |
|--------------------|--------|----------|
| A) Left atrium | first | 1) _____ |
| B) Aortic valve | second | 2) _____ |
| C) Right atrium | third | 3) _____ |
| D) Left ventricle | fourth | 4) _____ |
| E) Right ventricle | fifth | 5) _____ |

6-10. Trace the flow of blood through the heart starting at the vena cava

- | | | |
|--------------------|--------|-----------|
| A) Left AV valve | first | 6) _____ |
| B) Aortic valve | second | 7) _____ |
| C) Right AV valve | third | 8) _____ |
| D) Right ventricle | fourth | 9) _____ |
| E) Pulmonary valve | fifth | 10) _____ |

11-15. Matching

- | | | |
|----------------------------|---|-----------|
| A) Ventricular relaxation | AV valves close and semilunar valves open | 11) _____ |
| B) Ventricular contraction | Semilunar valves close and AV valves open | 12) _____ |
| | Blood is drawn out of the atria and veins | 13) _____ |
| | Blood is pushed out of the ventricles | 14) _____ |
| | Blood is drawn into the ventricles | 15) _____ |

16-20. Trace the cardiac conduction signals through the heart.

- | | | |
|----------------------------------|--------|-----------|
| A) AV node | first | 16) _____ |
| B) SA node | second | 17) _____ |
| C) Atrial conduction fibers | third | 18) _____ |
| D) AV bundle and branches | fourth | 19) _____ |
| E) Ventricular conduction fibers | fifth | 20) _____ |

21-25. Matching

- | | | |
|-----------------|--|-----------|
| A) Lead I EKG | Typically shows prominent descending "S" waves | 21) _____ |
| B) Lead II EKG | Measured between left arm and right arm | 22) _____ |
| C) Lead III EKG | Measured between left leg and right arm | 23) _____ |
| | Measured between left leg and left arm | 24) _____ |
| | Typically shows the biggest "R" waves | 25) _____ |

26-30. Matching (assume a heart rate of 70 beats/ minute)

- | | | |
|-----------------------------|----------|-----------|
| A) Typical PQ (PR) interval | 80 msec | 26) _____ |
| B) Typical QS interval | 170 msec | 27) _____ |
| C) Typical QT interval | 350 msec | 28) _____ |
| D) Typical TQ interval | 500 msec | 29) _____ |
| E) Typical RR interval | 857 msec | 30) _____ |

31-35. Matching (in this question, ST is more accurate than QT)

- | | | |
|---------------------|---|-----------|
| A) PQ (PR) interval | Is inversely related to the heart rate | 31) _____ |
| B) QRS interval | Corresponds to the time of atrial contraction | 32) _____ |
| C) ST interval | Corresponds to the time of ventricular relaxation | 33) _____ |
| D) TQ interval | Corresponds to the time of ventricular contraction | 34) _____ |
| E) RR interval | Corresponds to the time of ventricular depolarization | 35) _____ |

36-40. Place the following in the order that they occur in cardiac pacemakers cells. Start at "D."

- | | | |
|---|--------|-----------|
| A) K ⁺ channels close | first | 36) _____ |
| B) Na ⁺ depolarization (+) opens Ca ²⁺ T-channels | second | 37) _____ |
| C) Ca ²⁺ depolarization (+) opens Ca ²⁺ L-channels | third | 38) _____ |
| D) Repolarization (-) opens "F" type Na ⁺ channels | fourth | 39) _____ |
| E) Ca ²⁺ depolarization (+) opens K ⁺ channels causing repolarization (-) | fifth | 40) _____ |

41-45. Matching

- | | | |
|----------------------|---|-----------|
| A) SA node | Has an intrinsic rate of about 40-60 impulses per minute | 41) _____ |
| B) AV node | Has an intrinsic rate of about 80-100 impulses per minute | 42) _____ |
| C) None of the above | Sends rhythmic signals into the atrial conduction fibers | 43) _____ |
| | Sends rhythmic signals into the atrioventricular node | 44) _____ |
| | Sends rhythmic signals into the AV bundle | 45) _____ |

46-50. Matching

- | | | |
|------------------------------|--|-----------|
| A) Ventricles relax | Semilunar valves and AV valves are closed during | 46) _____ |
| B) Ventricles contract | AV valves close and Semilunar valves open when | 47) _____ |
| C) Isovolumetric contraction | Semilunar valves close and AV valves open when | 48) _____ |
| | Blood is pushed out of the ventricles when | 49) _____ |
| | Blood is drawn into the ventricles when | 50) _____ |

51-55. Matching (HR = number of ventricular contractions each minute)

- | | | |
|-------------------------------|---|-----------|
| A) Stroke Volume (SV) | Blood flow out of left ventricle each contraction | 51) _____ |
| B) Cardiac Output (CO) | Volume in left ventricular at end of contraction | 52) _____ |
| C) End Systolic Volume (ESV) | Volume in left ventricular at end of relaxation | 53) _____ |
| D) End Diastolic Volume (EDV) | Blood flow out of left ventricle each minute | 54) _____ |
| | = (EDV - ESV) x HR | 55) _____ |

56-60. Matching

- | | | |
|---------------------------------|--|-----------|
| A) Epinephrine / norepinephrine | Increase(s) heart rate | 56) _____ |
| B) Acetylcholine | Decrease(s) heart rate | 57) _____ |
| C) None of these | Bind(s) to Muscarinic-2 | 58) _____ |
| | Bind(s) to Beta-1 receptors | 59) _____ |
| | Increase(s) force of cardiac contraction | 60) _____ |

61-65. Matching

- | | | |
|------------------|--|-----------|
| A) Decreases EDV | Elevated arterial pressure | 61) _____ |
| B) Decreases ESV | Elevated venous pressure | 62) _____ |
| C) Increases EDV | Epinephrine / norepinephrine | 63) _____ |
| D) Increases ESV | Increased time for ventricular filling | 64) _____ |
| | Increased force of ventricular contraction | 65) _____ |

66-70. Matching

- | | | |
|---|----------------|-----------|
| A) Cardiac Output (CO) (aortic blood flow) | CO / VR | 66) _____ |
| B) Blood pressure gradient (ΔP or MAP-CVP) | (CO x VR) | 67) _____ |
| C) Vascular resistance (VR) | (MAP-CVP) / VR | 68) _____ |
| D) None of the above | (MAP-CVP) / CO | 69) _____ |
| | (MAP-CVP) x VR | 70) _____ |

71-75. Matching

- | | | |
|--|----------------------------------|-----------|
| A) Cardiac Output (CO) (aortic blood flow) | Typically about 4.9L/min | 71) _____ |
| B) Mean ventricular pressure (MVP) | Typically about 5 mmHg | 72) _____ |
| C) Central venous pressure (CVP) | Typically about 40 mmHg | 73) _____ |
| D) Mean arterial pressure (MAP) | Typically about 85-95 mmHg | 74) _____ |
| E) Vascular resistance (VR) | Typically about 18-20 mmHg/L/min | 75) _____ |

76-80.

- | | | |
|----------------------------|---|-----------|
| A) Causes vasoconstriction | Vasopressin binding to V1a vascular receptors | 76) _____ |
| B) Causes vasodilation | Epinephrine binding to beta-2 vascular receptors | 77) _____ |
| C) None of the above | Angiotensin II binding to AT-1 vascular receptors | 78) _____ |
| | Norepinephrine binding to alpha-1 vascular receptors | 79) _____ |
| | Adenosine and/or nitric oxide acting on coronary and other arteries | 80) _____ |

81-85. Matching

- | | | |
|---------------------------------------|---------------------------------|-----------|
| A) Decreases blood flow in that organ | Vasodilation in skeletal muscle | 81) _____ |
| B) Increases blood flow in that organ | Vasoconstriction in GI tract | 82) _____ |
| | Vasoconstriction in kidney | 83) _____ |
| | Vasodilation in heart | 84) _____ |
| | Vasodilation in skin | 85) _____ |

86-90. Matching

- | | | |
|------------------------|---|-----------|
| A) Standing up quickly | Causes a <u>reflex</u> increase of heart rate | 86) _____ |
| B) Lying down | Causes a <u>reflex</u> decrease of heart rate | 87) _____ |
| | At first briefly raises pressure in carotid artery | 88) _____ |
| | At first briefly lowers pressure in carotid artery | 89) _____ |
| | Causes a <u>reflex</u> constriction of blood vessels in trunk and lower limbs | 90) _____ |

91-95. Matching (solute = electrolytes, glucose, and/or protein)

- | | | |
|--|--|-----------|
| A) Helps movement of fluid <u>out of</u> capillaries | Increased capillary blood pressure | 91) _____ |
| B) Helps movement of fluid <u>into</u> capillaries | Decreased capillary blood pressure | 92) _____ |
| | Increased concentration of solutes in blood | 93) _____ |
| | Decreased concentration of solutes in blood | 94) _____ |
| | Increased concentration of solutes in interstitial fluid | 95) _____ |

96-100. Matching (capillary blood pressure = capillary hydrostatic pressure)

- | | | |
|---|---------------------------------------|------------|
| A) Favors movement of fluid <u>out of</u> capillaries | Increased interstitial fluid pressure | 96) _____ |
| B) Favors movement of fluid <u>into</u> capillaries | Increased capillary blood pressure | 97) _____ |
| | Decreased capillary blood pressure | 98) _____ |
| | Increased capillary osmotic pressure | 99) _____ |
| | Decreased capillary osmotic pressure | 100) _____ |

101-105. Matching

- | | | |
|----------------------|---|------------|
| A) White blood cells | Contain(s) hemoglobin | 101) _____ |
| B) Red blood cells | Contain(s) about 5 mM potassium | 102) _____ |
| C) Blood plasma | Contain(s) albumin, globulins and fibrinogen | 103) _____ |
| | Make(s) up about 60% of blood and contain(s) about 90% water | 104) _____ |
| | Make(s) up less than 1% of blood and is(are) essential for immune responses | 105) _____ |

106-110. Place the following in the order they occur causing a blood clot.

- | | | |
|---|--------|------------|
| A) Platelet and tissue factors (chemical messengers) are secreted | first | 106) _____ |
| B) Prothrombin is converted to thrombin | second | 107) _____ |
| C) Clotting factor X (# 10) is activated | third | 108) _____ |
| D) Fibrinogen is converted to fibrin | fourth | 109) _____ |
| E) Tissues are damaged | fifth | 110) _____ |

111-115. Matching (blood)

- | | | |
|-------------|--------------------------------------|------------|
| A) 2 to 6 | Typical clotting time; min | 111) _____ |
| B) 12 to 16 | Typical hematocrit, male; % | 112) _____ |
| C) 14 to 18 | Typical hematocrit, female; % | 113) _____ |
| D) 37 to 47 | Typical hemoglobin, male; gm/100mL | 114) _____ |
| E) 40 to 54 | Typical hemoglobin, female; gm/100mL | 115) _____ |

Fill in

1. Lancets and needles must be placed in a _____ before disposal.
2. Lancets and needles must NOT be placed into a _____ or into a trash can.
3. The aortic valve closes when the left _____ (chamber) _____ (action).
4. The right AV valve opens when the right _____ (chamber) _____ (action).
5. _____ binds to adrenergic Beta-1 receptors in the heart and causes heart rate to _____.
6. _____ binds to cholinergic muscarinic-2 receptors in the heart and causes heart rate to _____.
7. Given an RR interval in the EKG of 0.80 sec, the heart rate would be _____ beats/min.
8. Given an RR interval in the EKG of 0.667sec, the heart rate would be _____ beats/min.
9. Stroke volume (SV) equals _____ - _____
20. An increase in EDV will usually _____ stroke volume.
21. A decrease in ESV will usually _____ stroke volume.
22. A longer _____ interval suggests a partial AV heart block caused by damage to the AV node.
23. Given an arterial pressure of 100/85 the mean arterial pressure would be _____ mmHg.
24. Given an arterial pressure of 130/70 the mean arterial pressure would be _____ mmHg
25. Cardiac output (CO) = SV x _____.
26. Given a HR of 80/min and a SV of 80 mL, the CO would be _____ L/min.
27. Cardiac output (CO) = (_____ - _____) / VR.
28. Given (MAP-CVP) of 90 mmHg and a VR of 20 mmHg/L/min, the CO would be _____ L/min.
29. Given a CO of 5 L/min and a VR of 25 mmHg/L/min, the MAP would be _____ mmHg
30. Low arterial pressure will stimulate a reflex _____ (change) in heart rate.
31. High arterial pressure will stimulate a reflex _____ (change) in heart rate
32. When the size of our arteries increases, the vascular resistance will _____.
33. When the size of our arteries decreases, the vascular resistance will _____.
34. Drugs that prevent the action of norepinephrine on the heart will usually _____ cardiac output.
35. Angiotensin I is produced from the cleavage of angiotensinogen by _____.
36. Drugs that prevent the action of angiotensin II on blood vessels will usually _____ arterial pressure.
37. The plasma protein _____ plays a major role in control of blood osmolarity and volume.
38. _____ capillary blood pressure enhances fluid movement into the capillaries.

39. Blood with a hematocrit of 42 will have a hemoglobin concentration of about _____ g/dl.
40. Blood with a hematocrit of 48 will have a hemoglobin concentration of about _____ g/100 mL.
41. Blood type B + most commonly contains antibodies to the _____ protein(s).
42. Blood type A - is most commonly contains antibodies to the _____ protein(s).
43. Tissue plasminogen activator (TPA) converts plasminogen to _____ to dissolve blood clots.

Name _____

Choices may be used more than once or not at all.

Matching

1-5. Trace the flow of blood through the heart starting at the vena cava.

- | | | |
|--------------------|--------|-----------------|
| A) Left atrium | first | 1) <u> C </u> |
| B) Aortic valve | second | 2) <u> E </u> |
| C) Right atrium | third | 3) <u> A </u> |
| D) Left ventricle | fourth | 4) <u> D </u> |
| E) Right ventricle | fifth | 5) <u> B </u> |

6-10. Trace the flow of blood through the heart starting at the vena cava.

- | | | |
|--------------------|--------|------------------|
| A) Left AV valve | first | 6) <u> C </u> |
| B) Aortic valve | second | 7) <u> D </u> |
| C) Right AV valve | third | 8) <u> E </u> |
| D) Right ventricle | fourth | 9) <u> A </u> |
| E) Pulmonary valve | fifth | 10) <u> B </u> |

11-15. Matching

- | | | |
|----------------------------|---|------------------|
| A) Ventricular relaxation | AV valves close and semilunar valves open | 11) <u> B </u> |
| B) Ventricular contraction | Semilunar valves close and AV valves open | 12) <u> A </u> |
| | Blood is drawn out of the atria and veins | 13) <u> A </u> |
| | Blood is pushed out of the ventricles | 14) <u> B </u> |
| | Blood is drawn into the ventricles | 15) <u> A </u> |

16-20. Trace the cardiac conduction signals through the heart.

- | | | |
|----------------------------------|--------|------------------|
| A) AV node | first | 16) <u> B </u> |
| B) SA node | second | 17) <u> C </u> |
| C) Atrial conduction fibers | third | 18) <u> A </u> |
| D) AV bundle and branches | fourth | 19) <u> D </u> |
| E) Ventricular conduction fibers | fifth | 20) <u> E </u> |

21-25. Matching

- | | | |
|-----------------|--|------------------|
| A) Lead I EKG | Typically shows prominent descending "S" waves | 21) <u> A </u> |
| B) Lead II EKG | Measured between left arm and right arm | 22) <u> A </u> |
| C) Lead III EKG | Measured between left leg and right arm | 23) <u> B </u> |
| | Measured between left leg and left arm | 24) <u> C </u> |
| | Typically shows the biggest "R" waves | 25) <u> B </u> |

26-30. Matching (assume a heart rate of 70 beats/ minute)

- | | | |
|-----------------------------|----------|------------------|
| A) Typical PQ (PR) interval | 80 msec | 26) <u> B </u> |
| B) Typical QS interval | 170 msec | 27) <u> A </u> |
| C) Typical QT interval | 350 msec | 28) <u> C </u> |
| D) Typical TQ interval | 500 msec | 29) <u> D </u> |
| E) Typical RR interval | 857 msec | 30) <u> E </u> |

31-35. Matching (in this question, ST is more accurate than QT)

- | | | |
|---------------------|---|------------------|
| A) PQ (PR) interval | Is inversely related to the heart rate | 31) <u> E </u> |
| B) QRS interval | Corresponds to the time of atrial contraction | 32) <u> A </u> |
| C) ST interval | Corresponds to the time of ventricular relaxation | 33) <u> D </u> |
| D) TQ interval | Corresponds to the time of ventricular contraction | 34) <u> C </u> |
| E) RR interval | Corresponds to the time of ventricular depolarization | 35) <u> B </u> |

36-40. Place the following in the order that they occur in cardiac pacemakers cells. Start at "D."

- | | | |
|---|--------|--------------|
| A) K ⁺ channels close | first | 36) <u>D</u> |
| B) Na ⁺ depolarization (+) opens Ca ²⁺ T-channels | second | 37) <u>B</u> |
| C) Ca ²⁺ depolarization (+) opens Ca ²⁺ L-channels | third | 38) <u>C</u> |
| D) Repolarization (-) opens "F" type Na ⁺ channels | fourth | 39) <u>E</u> |
| E) Ca ²⁺ depolarization (+) opens K ⁺ channels causing repolarization (-) | fifth | 40) <u>A</u> |

41-45. Matching

- | | | |
|----------------------|---|--------------|
| A) SA node | Has an intrinsic rate of about 40-60 impulses per minute | 41) <u>B</u> |
| B) AV node | Has an intrinsic rate of about 80-100 impulses per minute | 42) <u>A</u> |
| C) None of the above | Sends rhythmic signals into the atrial conduction fibers | 43) <u>A</u> |
| | Sends rhythmic signals into the atrioventricular node | 44) <u>A</u> |
| | Sends rhythmic signals into the AV bundle | 45) <u>B</u> |

46-50. Matching

- | | | |
|------------------------------|--|--------------|
| A) Ventricles relax | Semilunar valves and AV valves are closed during | 46) <u>C</u> |
| B) Ventricles contract | AV valves close and Semilunar valves open when | 47) <u>B</u> |
| C) Isovolumetric contraction | Semilunar valves close and AV valves open when | 48) <u>A</u> |
| | Blood is pushed out of the ventricles when | 49) <u>B</u> |
| | Blood is drawn into the ventricles when | 50) <u>A</u> |

51-55. Matching (HR = number of ventricular contractions each minute)

- | | | |
|-------------------------------|---|--------------|
| A) Stroke Volume (SV) | Blood flow out of left ventricle each contraction | 51) <u>A</u> |
| B) Cardiac Output (CO) | Volume in left ventricular at end of contraction | 52) <u>C</u> |
| C) End Systolic Volume (ESV) | Volume in left ventricular at end of relaxation | 53) <u>D</u> |
| D) End Diastolic Volume (EDV) | Blood flow out of left ventricle each minute | 54) <u>B</u> |
| | = (EDV - ESV) x HR | 55) <u>B</u> |

56-60. Matching

- | | | |
|---------------------------------|--|--------------|
| A) Epinephrine / norepinephrine | Increase(s) heart rate | 56) <u>A</u> |
| B) Acetylcholine | Decrease(s) heart rate | 57) <u>B</u> |
| C) None of these | Bind(s) to Muscarinic-2 | 58) <u>B</u> |
| | Bind(s) to Beta-1 receptors | 59) <u>A</u> |
| | Increase(s) force of cardiac contraction | 60) <u>A</u> |

61-65. Matching

- | | | |
|------------------|--|--------------|
| A) Decreases EDV | Elevated arterial pressure | 61) <u>D</u> |
| B) Decreases ESV | Elevated venous pressure | 62) <u>C</u> |
| C) Increases EDV | Epinephrine / norepinephrine | 63) <u>B</u> |
| D) Increases ESV | Increased time for ventricular filling | 64) <u>C</u> |
| | Increased force of ventricular contraction | 65) <u>B</u> |

66-70. Matching

- | | | |
|---|----------------|--------------|
| A) Cardiac Output (CO) (aortic blood flow) | CO / VR | 66) <u>D</u> |
| B) Blood pressure gradient (ΔP or MAP-CVP) | (CO x VR) | 67) <u>B</u> |
| C) Vascular resistance (VR) | (MAP-CVP) / VR | 68) <u>A</u> |
| D) None of the above | (MAP-CVP) / CO | 69) <u>C</u> |
| | (MAP-CVP) x VR | 70) <u>D</u> |

71-75. Matching

- | | | |
|--|----------------------------------|--------------|
| A) Cardiac Output (CO) (aortic blood flow) | Typically about 4.9L/min | 71) <u>A</u> |
| B) Mean ventricular pressure (MVP) | Typically about 5 mmHg | 72) <u>C</u> |
| C) Central venous pressure (CVP) | Typically about 40 mmHg | 73) <u>B</u> |
| D) Mean arterial pressure (MAP) | Typically about 85-95 mmHg | 74) <u>D</u> |
| E) Vascular resistance (VR) | Typically about 18-20 mmHg/L/min | 75) <u>E</u> |

76-80.

- | | | |
|----------------------------|---|------------------|
| A) Causes vasoconstriction | Vasopressin binding to V1a vascular receptors | 76) <u> A </u> |
| B) Causes vasodilation | Epinephrine binding to beta-2 vascular receptors | 77) <u> B </u> |
| C) None of the above | Angiotensin II binding to AT-1 vascular receptors | 78) <u> A </u> |
| | Norepinephrine binding to alpha-1 vascular receptors | 79) <u> A </u> |
| | Adenosine and/or nitric oxide acting on coronary and other arteries | 80) <u> B </u> |

81-85. Matching

- | | | |
|---------------------------------------|---------------------------------|------------------|
| A) Decreases blood flow in that organ | Vasodilation in skeletal muscle | 81) <u> B </u> |
| B) Increases blood flow in that organ | Vasoconstriction in GI tract | 82) <u> A </u> |
| | Vasoconstriction in kidney | 83) <u> A </u> |
| | Vasodilation in heart | 84) <u> B </u> |
| | Vasodilation in skin | 85) <u> B </u> |

86-90. Matching

- | | | |
|------------------------|---|------------------|
| A) Standing up quickly | Causes a <u>reflex</u> increase of heart rate | 86) <u> A </u> |
| B) Lying down | Causes a <u>reflex</u> decrease of heart rate | 87) <u> B </u> |
| | At first briefly raises pressure in carotid artery | 88) <u> B </u> |
| | At first briefly lowers pressure in carotid artery | 89) <u> A </u> |
| | Causes a <u>reflex</u> constriction of blood vessels in trunk and lower limbs | 90) <u> A </u> |

91-95. Matching (solutes = electrolytes, glucose, and/or protein)

- | | | |
|--|--|------------------|
| A) Helps movement of fluid <u>out of</u> capillaries | Increased capillary blood pressure | 91) <u> A </u> |
| B) Helps movement of fluid <u>into</u> capillaries | Decreased capillary blood pressure | 92) <u> B </u> |
| | Increased concentration of solutes in blood | 93) <u> B </u> |
| | Decreased concentration of solutes in blood | 94) <u> A </u> |
| | Increased concentration of solutes in interstitial fluid | 95) <u> A </u> |

96-100. Matching (capillary blood pressure = capillary hydrostatic pressure)

- | | | |
|---|---------------------------------------|-------------------|
| A) Favors movement of fluid <u>out of</u> capillaries | Increased interstitial fluid pressure | 96) <u> B </u> |
| B) Favors movement of fluid <u>into</u> capillaries | Increased capillary blood pressure | 97) <u> A </u> |
| | Decreased capillary blood pressure | 98) <u> B </u> |
| | Increased capillary osmotic pressure | 99) <u> B </u> |
| | Decreased capillary osmotic pressure | 100) <u> A </u> |

101-105. Matching

- | | | |
|----------------------|---|-------------------|
| A) White blood cells | Contain(s) hemoglobin | 101) <u> B </u> |
| B) Red blood cells | Contain(s) about 5 mM potassium | 102) <u> C </u> |
| C) Blood plasma | Contain(s) albumin, globulins and fibrinogen | 103) <u> C </u> |
| | Make(s) up about 60% of blood and contain(s) about 90% water | 104) <u> C </u> |
| | Make(s) up less than 1% of blood and is(are) essential for immune responses | 105) <u> A </u> |

106-110. Place the following in the order they occur causing a blood clot.

- | | | |
|---|--------|-------------------|
| A) Platelet and tissue factors (chemical messengers) are secreted | first | 106) <u> E </u> |
| B) Prothrombin is converted to thrombin | second | 107) <u> A </u> |
| C) Clotting factor X (# 10) is activated | third | 108) <u> C </u> |
| D) Fibrinogen is converted to fibrin | fourth | 109) <u> B </u> |
| E) Tissues are damaged | fifth | 110) <u> D </u> |

111-115. Matching (blood)

- | | | |
|-------------|--------------------------------------|-------------------|
| A) 2 to 6 | Typical clotting time; min | 111) <u> A </u> |
| B) 12 to 16 | Typical hematocrit, male; % | 112) <u> E </u> |
| C) 14 to 18 | Typical hematocrit, female; % | 113) <u> D </u> |
| D) 37 to 47 | Typical hemoglobin, male; gm/100mL | 114) <u> C </u> |
| E) 40 to 54 | Typical hemoglobin, female; gm/100mL | 115) <u> B </u> |

Fill in

1. Lancets and needles must be placed in a sharps container before disposal.
2. Lancets and needles must NOT be placed into a biohazard bag or into a trash can.
3. The aortic valve closes when the left ventricle (chamber) relaxes (action).
4. The right AV valve opens when the right ventricle (chamber) relaxes (action).
5. Epinephrine binds to adrenergic Beta-1 receptors in the heart and causes heart rate to increase.
6. Acetylcholine binds to cholinergic muscarinic-2 receptors in the heart and causes heart rate to decrease.
7. Given an RR interval in the EKG of 0.80 sec, the heart rate would be 75 beats/min.
8. Given an RR interval in the EKG of 0.667sec, the heart rate would be 90 beats/min.
9. Stroke volume (SV) equals EDV - ESV
20. An increase in EDV will usually increase stroke volume.
21. A decrease in ESV will usually increase stroke volume.
22. A longer PR interval suggests a partial AV heart block caused by damage to the AV node.
23. Given an arterial pressure of 100/85 the mean arterial pressure would be 90 mmHg.
24. Given an arterial pressure of 130/70 the mean arterial pressure would be 90 mmHg
25. Cardiac output (CO) = SV x HR.
26. Given a HR of 80/min and a SV of 80 mL, the CO would be 6.4 L/min.
27. Cardiac output (CO) = (MAP - CVP) / VR.
28. Given (MAP-CVP) of 90 mmHg and a VR of 20 mmHg/L/min, the CO would be 4.5 L/min.
29. Given a CO of 5 L/min and a VR of 25 mmHg/L/min, the MAP would be 130 mmHg
30. Low arterial pressure will stimulate a reflex increase (change) in heart rate.
31. High arterial pressure will stimulate a reflex decrease (change) in heart rate
32. When the size of our arteries increases, the vascular resistance will decrease.
33. When the size of our arteries decreases, the vascular resistance will increase.
34. Drugs that prevent the action of norepinephrine on the heart will usually decrease cardiac output.
35. Angiotensin I is produced from the cleavage of angiotensinogen by renin.
36. Drugs that prevent the action of angiotensin II on blood vessels will usually decrease arterial pressure.
37. The plasma protein albumin plays a major role in control of blood osmolarity and volume.
38. Low capillary blood pressure enhances fluid movement into the capillaries.

39. Blood with a hematocrit of 42 will have a hemoglobin concentration of about 14 g/dl.
40. Blood with a hematocrit of 48 will have a hemoglobin concentration of about 16 g/100 mL.
41. Blood type B + most commonly contains antibodies to the A protein(s).
42. Blood type A - is most commonly contains antibodies to the B protein(s).
43. Tissue plasminogen activator (TPA) converts plasminogen to plasmin to dissolve blood clots.