

# Anatomy & Physiology KEY

by mangothecat

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## Cardiovascular System

1. Interatrial pathway
2. Sinoatrial (SA) node
3. Internodal pathway
4. Atrioventricular (AV) node
5. Atrioventricular bundle OR Bundle of His
6. Bundle branches
7. Purkinje fibers
8. Aorta
9. Superior vena cava
10. Left atrium
11. Right atrium
12. Left ventricle
13. Right ventricle
14. Atrial depolarization (2pts all or nothing)
15. Atrial repolarization, ventricular depolarization (2pts all or nothing)
16. Ventricular repolarization (2pts all or nothing)
17. Torsades de pointes
18. Any 2 of the following: Long QT interval, twisting of the QRS complexes, twisted ribbon like shape.  
(1pt per right answer for maximum of 2pts)
19. Ventricles beat faster than atria
20. E
21. B
22. A
23. C
24. A
25. B
26. D
27. B
28. D
29. A
30. A

31. Depolarization of a cardiac muscle cell opens slow  $\text{Ca}^{2+}$  channels, and this does not occur in skeletal muscle cells. The influx of  $\text{Ca}^{2+}$  increases the period of depolarization, thereby increasing the refractory period. A longer refractory period prevents tetanic contraction. This would not allow for blood to flow into the ventricles, which can only occur if the ventricular muscles are relaxed.  
(2pts for  $\text{Ca}^{2+}$  channels increasing refractory period, 2pts for prevention of tetanic contraction)

### **Lymphatic System**

1. White pulp, contains lymphocytes that initiate immune responses against antigens in the blood  
(1pt for white pulp, 2pts for function)
2. Red pulp, reservoir for erythrocytes and platelets, breaks down old erythrocytes, recycles iron for hemoglobin production  
(1pt for red pulp, 2pts for function)
3. A
4. B
5. C
6. B
7. D
8. A
9. C
10. B
11. D
12. B
13. A
14. D
15. C
16. C
17. E
18. Any 4 of the following:
  - a. Hodgkin's involves Reed-Sternberg cells (non-Hodgkin's doesn't)
  - b. Hodgkin's arise from only B lymphocytes, while non-Hodgkin's can arise from either B or T lymphocytes
  - c. Hodgkin's affects mainly people 15 - 24 and >60 years old while non-Hodgkin's affects mostly older people (median age of diagnosis is 60)

- d. Hodgkin's lymphomas more often arise in upper body (neck, chest, underarms), while non-Hodgkin's arise in lymph nodes all over the body
- e. Hodgkin's more often diagnosed in early stages, non-Hodgkin's more often diagnosed in advanced stages
- f. Hodgkin's is more rare (8,000 cases per year in US vs 70,000 for non-Hodgkin's)

(2pts for each difference for a maximum of 8pts)

### **Excretory System**

- 1. Renal papilla
- 2. Renal artery
- 3. Renal vein
- 4. Renal pelvis
- 5. Ureter
- 6. Cortex
- 7. Medulla
- 8. Capsule
- 9. Minor calyx
- 10. Major calyx
- 11. Renal column
- 12. Renal pyramid
- 13. Cystitis is the inflammation of the bladder. Cystitis is most commonly caused by an urinary tract infection, but can also be caused by a drug reaction, radiation therapy, irritants (ex. catheters). Symptoms include traces of blood in urine, dark cloudy urine, foul smelling urine, pain in abdomen/lower back/above pubic bone, burning sensation while urinating, frequent urination.  
(1pt for definition, 1 pt for mentioning UTI as a cause, 1 pt for mentioning anything else as a cause, 1pt for each symptom)
- 14. Cystitis more commonly affects women because women have shorter urethras.  
(1pt for women, 1pt for explanation)
- 15. C
- 16. B
- 17. A
- 18. D
- 19. B
- 20. D

21. C  
22. C  
23. B  
24. C  
25. B  
26. B  
27. A  
28. C  
29. C  
30. B  
31. C  
32. C