

## ECG Exam Blueprint and Study Guide

Topic	Number of Questions	Percent of Test
Static Rhythm Recognition	60	67
Comprehensive M/C	27	30
Short Answer/Essay	2	3
Total	89	100

### **Study Guide:**

**Static Rhythm Recognition:** Given a strip, identify the underlying rhythm and any other abnormalities (ie SR with PVC)  
Identification should be made based on the pacemaker site and rate.  
You may use calipers.

**ECG Characteristics:** These are based on the primary (most distinctive) characteristics of the dysrhythmias, i.e. the PR interval associated with First Degree AV block is greater than .20 seconds)  
Recognize primary causes for rhythms.

**Cardiac A&P:** Describe the electrical conduction system and its components  
State the intrinsic firing rates of the various pacemaker sites.  
Label the coronary arteries and the areas of the heart that each primarily perfuses (in the majority of the population).  
Given a diagram of the electrical cardiac cycle, label each phase to include the significance of each phase and the ion movement that occurs during.  
Describe the relationship between preload, afterload, stroke volume, heart rate, cardiac output, PVR and blood pressure.  
Predict the clinical manifestations of patients with alterations in sodium, calcium or potassium channels or preload, afterload, stroke volume, heart rate, cardiac output, PVR

## **Study Guide: Cardiology Exam 1**

1. List the names of the four chambers of the heart
2. The AV valves are located between which two chambers of the heart?
3. List the names of the AV valves?
4. The semilunar valves are located between which structures?
5. What are the names of the semilunar valves?
6. What is the name of the condition where the heart is on the opposite side of the chest?
7. By which vessel does blood return to the right atrium from the coronary circulation?
8. Which layer of tissue is on the outer surface of the heart? Which layer of tissue is on the interior? Which layer of tissue is the middle, muscular layer?
9. Through which of these layers do the coronary vessels run? The cardiac conduction system?
10. Which two main coronary arteries supply blood to the left ventricle? To the right ventricle?
11. What are the two main types of cardiac tissue?
12. What is the dominant pacemaker of the heart? What is its intrinsic firing rate?
13. What are the names and intrinsic firing rates of the other main pacemakers in the heart?
14. The atria spend the majority of their time in systole or diastole?
15. The ventricles spend the majority of their time in systole or diastole?
16. Which contract first, the atria or ventricles? The right or left side?
17. What are the two components of cardiac output?
18. What are the two components of blood pressure?
19. What is the chief extracellular cation? Intracellular cation?
20. During phase 0 of the cardiac cycle, \_\_\_\_\_ rushes \_\_\_\_\_ the cell.
21. During phase 1 of the cycle, \_\_\_\_\_ moves \_\_\_\_\_ the cell.
22. During phase 2 (also known as the \_\_\_\_\_), \_\_\_\_\_ moves \_\_\_\_\_ the cell at the same time that \_\_\_\_\_ is moving \_\_\_\_\_ the cell.
23. During phase 3, \_\_\_\_\_ continues to move \_\_\_\_\_ cell, while \_\_\_\_\_ movement stops.
24. What is the anatomical structure that divides the atria from the ventricles? What is its anatomical purpose and its electrophysiological purpose?
25. What is the driving force causing blood to flow? What generates this force?
26. How can reasonably healthy people maintain a normal cardiac output if their atria are not functioning properly?
27. What is the risk of 'restarting' abnormally functioning atria in patients who have had inefficient atrial contraction for a long time?
28. List the names of the three main coronary arteries:
29. Heart rate increases at the expense of which phase of the cardiac cycle?
30. Which chambers are in diastole longer, atria or ventricles?
31. What is the difference between preload and afterload?
32. What does Starling's Law say and why should paramedics care (more importantly, why should a paramedic's patient care?)?
33. List the components of blood pressure and cardiac output.
34. List the effects of SNS stimulation on the four main types of adrenergic receptors.
35. Diagram and label an action potential for a contractile cell.
36. Why do pacing cells pace? Why does the SA node pace faster than the AV node?
37. List the components, in order from fastest to slowest, of the cardiac electrical conduction system.