

EMSP 2544: Exam 3 (12 Lead) Blueprint & Study Guide

Multiple Choice	~20
12 Lead ECG Analysis	~20
Short Answer	2-4
Total	~42

Study Guide

- The multiple choice questions will be drawn from the following concepts:
 - a) Cardiac A&P
 - i) Anatomy
 - (1) Define the intrinsic firing rates for each pacemaker site
 - (2) List each component of the conduction system, including fascicles.
 - (3) List the three main coronary arteries and the parts of the heart they perfuse. Include sections of ventricular wall and parts of the conduction system.
 - (4) Briefly discuss the effects of occlusion of each of the three main coronary arteries.
 - ii) Physiology
 - (1) Describe the flow of ions during each of the 4 phases of the fast potentials.
 - (2) Describe the relationship between diastolic filling time and heart rate.
 - b) Principles of electrocardiography
 - i) List the location for the positive electrode for each of the 12 leads
 - ii) List the location for the negative electrode for leads I, II and III.
 - iii) Briefly describe what each lead “Looks At” (portion of the heart)
 - iv) Describe the position of alternative leads (right sided and posterior)
 - v) Describe the relationship between QRS deflection and the positive electrode position
 - vi) Discuss the differences between limb leads from chest leads.
 - vii) Discuss the differences between bipolar leads from unipolar leads.
 - viii) Describe the point at which ST segment elevation or depression should be measured.
 - ix) Describe the significance of ST segment elevation and depression.
 - x) Describe the significance of a pathologic Q wave.
 - xi) Describe the significance of an inverted T wave.
 - xii) List the causes of an upright QRS in lead aVR.
 - xiii) Justify the use of prehospital 12 lead ECGs.
 - xiv) List 4 conditions which could imitate the ECG characteristics of myocardial injury and describe how to identify these conditions
 - xv) Describe the characteristics of left & right bundle branch block.
 - xvi) Describe the characteristics of anterior and posterior fascicular block.
- For each 12 lead, you will need to provide the following information:
 - 1. Rate & rhythm
 - 2. Axis (by Quadrant is sufficient)
 - 3. Conduction defects (bundle branch block or hemiblock)
 - 4. Ischemia, injury or infarction.
 - 5. Imitators
 - 6. Coronary artery involved

Example 12 Lead Analysis Answer:

Rate & Rhythm: Sinus Bradycardia (~40 - 50 bpm)

Axis: Normal (50-70 degrees)

Conduction Defects: None

Ischemia, Injury, Infarction: Anteroseptal injury

Imitators: None