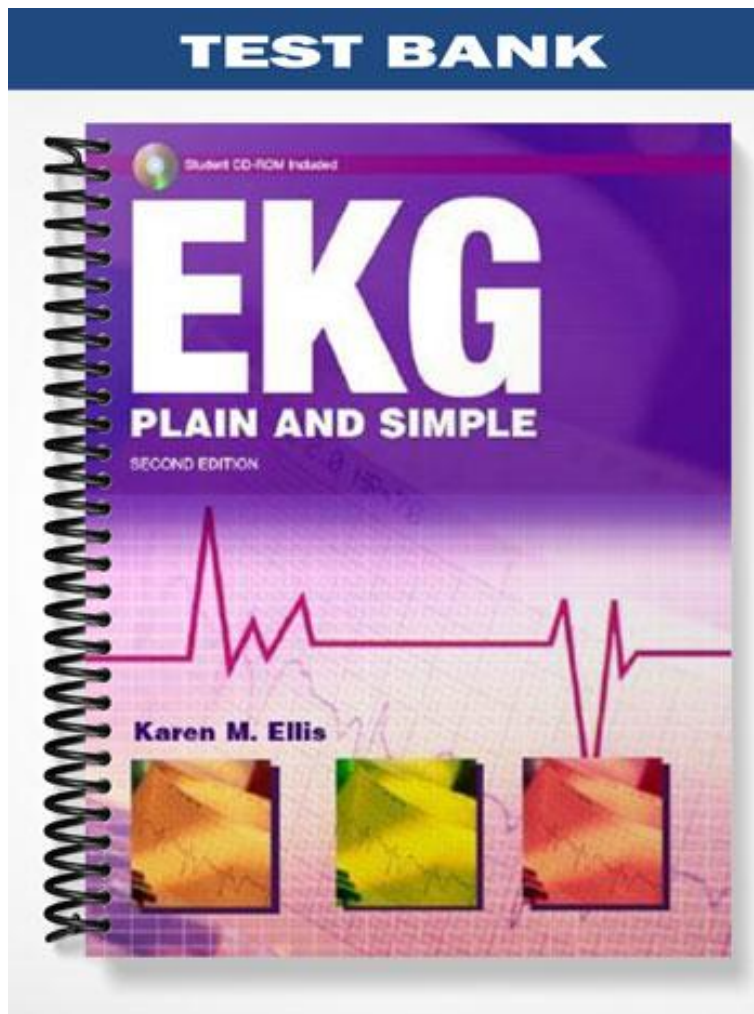


**TEST BANK**



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

- 1) What electrical event must occur for atrial kick to occur? 1) \_\_\_\_\_  
A) Atrial repolarization B) Ventricular repolarization  
C) Atrial depolarization D) Ventricular depolarization
- 2) The cardiac cell at rest has what kind of electrical charge? 2) \_\_\_\_\_  
A) Negative charge B) Positive charge  
C) Neutral charge D) Not charged at all
- 3) The EKG is a recording of the 3) \_\_\_\_\_  
A) Brain's electrical activity.  
B) Heart's mechanical activity.  
C) Heart's electrical activity.  
D) Heart's electrical and mechanical activity.
- 4) Depolarization is a(n) 4) \_\_\_\_\_  
A) Mechanical event that should result in repolarization.  
B) Electrical event that should result in muscle relaxation.  
C) Electrical event that should result in muscle contraction.  
D) Mechanical event that should result in depolarization.
- 5) Which of the following is NOT TRUE? 5) \_\_\_\_\_  
A) Cardiac contraction occurs as a result of phase 0 of the action potential.  
B) Cardiac cells must be depolarized before they can contract.  
C) Cardiac contraction requires the presence of calcium ions.  
D) Cardiac cells can contract without having been depolarized.
- 6) Which of the following ions has a direct effect on the strength of cardiac contraction? 6) \_\_\_\_\_  
A) Magnesium B) Calcium  
C) Potassium D) Sodium
- 7) In the action potential, phase 0 is 7) \_\_\_\_\_  
A) Depolarization. B) Plateau.  
C) Rapid repolarization. D) Rest.
- 8) In the action potential, phase 3 is 8) \_\_\_\_\_  
A) Depolarization. B) Rapid repolarization.  
C) Plateau. D) Rest.
- 9) Phase 0 of the action potential corresponds with what wave or complex on the EKG? 9) \_\_\_\_\_  
A) U wave B) ST segment  
C) T wave D) QRS complex
- 10) +20 mV is the 10) \_\_\_\_\_  
A) Trans-membrane potential at the beginning of cardiac rest.  
B) Trans-membrane potential at the conclusion of phase 0 of the action potential.

- C) Resting trans-membrane potential.  
D) Trans-membrane potential at the conclusion of phase 3 of the action potential.
- 11) Which of the following correctly describes the relative refractory period? 11) \_\_\_\_\_  
A) It is the period in which even a weak impulse can cause another depolarization.  
B) It is the period in which no impulses at all can cause another depolarization.  
C) It is the period in which only a strong impulse can cause another depolarization.  
D) It is the period in which the heart function stops temporarily to allow impulse transmission to occur.
- 12) The relative refractory period extends from the 12) \_\_\_\_\_  
A) Upstroke of the T wave to the end of the T wave.  
B) Beginning of the T wave to the beginning of the next QRS complex.  
C) Beginning of the QRS complex to the upstroke of the T wave.  
D) Beginning of the P wave to the beginning of the QRS complex.
- 13) The P wave represents 13) \_\_\_\_\_  
A) Atrial depolarization.                      B) Atrial repolarization.  
C) Ventricular depolarization.              D) Ventricular repolarization.
- 14) The QRS complex represents 14) \_\_\_\_\_  
A) Atrial depolarization.                      B) Atrial repolarization.  
C) Ventricular depolarization.              D) Ventricular repolarization.
- 15) The T wave represents 15) \_\_\_\_\_  
A) Atrial depolarization.                      B) Atrial repolarization.  
C) Ventricular depolarization.              D) Ventricular repolarization.
- 16) The PR segment is located between the 16) \_\_\_\_\_  
A) T wave and the next P wave.  
B) P wave and the QRS complex.  
C) P wave and the T wave.  
D) QRS complex and the T wave.
- 17) The ST segment is located between the 17) \_\_\_\_\_  
A) QRS complex and the T wave.  
B) P wave and the T wave.  
C) T wave and the next P wave.  
D) P wave and the QRS complex.
- 18) The normal ST segment is 18) \_\_\_\_\_  
A) At the isoelectric line.  
B) Elevated above the isoelectric line.  
C) Both above and below the isoelectric line.  
D) Depressed below the isoelectric line.

- 19) For purposes of determining the presence of ST segment changes, the baseline is considered to be the \_\_\_\_\_  
A) PR segment. B) QT segment.  
C) PT segment. D) TP segment.
- 20) The wave or complex that represents ventricular repolarization is the \_\_\_\_\_  
A) P wave. B) U wave.  
C) T wave. D) QRS complex.
- 21) An upward deflection of the QRS complex is called a(n) \_\_\_\_\_  
A) P wave. B) T wave. C) R wave. D) Q wave.
- 22) Which of these statements about the sinus node is FALSE? \_\_\_\_\_  
A) It is the slowest pacemaker of the heart.  
B) It is the normal pacemaker of the heart.  
C) It has the fastest inherent rate of all the possible pacemaker sites.  
D) It fires at an inherent rate of 60-100.
- 23) The job of the cardiac conduction system is to \_\_\_\_\_  
A) Conduct electrical impulses.  
B) Propagate electrical impulses.  
C) Cause depolarization of myocardial cells.  
D) All of the above
- 24) The normal pacemaker of the heart is the \_\_\_\_\_  
A) AV node. B) Sinus node.  
C) Coronary sinus. D) Purkinje fibers.
- 25) The normal inherent rate of the sinus node as a pacemaker is \_\_\_\_\_  
A) 20-40 beats per minute. B) 40-60 beats per minute.  
C) 60-80 beats per minute. D) 60-100 beats per minute.
- 26) The ventricle's inherent rate is \_\_\_\_\_  
A) 20-40 beats per minute. B) 40-60 beats per minute.  
C) 60-80 beats per minute. D) 60-100 beats per minute.
- 27) After the sinus node initiates an impulse, where does the impulse go next? \_\_\_\_\_  
A) Purkinje fibers B) Bundle branches  
C) Ventricular tissue D) Internodal tracts
- 28) Which of the following characteristics of heart cells is mechanical? \_\_\_\_\_  
A) Excitability B) Contractility  
C) Automaticity D) Conductivity
- 29) Contractility is the ability of a cardiac cell to \_\_\_\_\_  
A) Respond to a stimulus by depolarizing.  
B) Pass an impulse along to neighboring cells.  
C) Contract.  
D) Initiate an impulse without outside stimulus.
- 30) The PR interval measures the time it takes for the impulse to travel from the

30)

- \_\_\_\_\_
- A) Sinus node to the internodal tracts.
  - B) AV node to the bundle branches.
  - C) Bundle of His to the ventricular myocardium.
  - D) Atria to the ventricle.

**TRUE/FALSE. Write 'T' if the statement is true and 'F' if the statement is false.**

- 31) The polarized cardiac cell is electrically negative. 31) \_\_\_\_\_
- 32) The cardiac cell, at rest, has a trans-membrane potential of +20 mV. 32) \_\_\_\_\_
- 33) During the absolute refractory period, only a strong stimulus can result in depolarization. 33) \_\_\_\_\_
- 34) Cardiac cell stimulus during the absolute refractory period often results in very fast, dangerous rhythms. 34) \_\_\_\_\_
- 35) The P wave represents atrial depolarization. 35) \_\_\_\_\_
- 36) The PR segment is a flat line located between the QRS complex and the T wave. 36) \_\_\_\_\_
- 37) The baseline is a flat line from which the waves and complexes take off. 37) \_\_\_\_\_
- 38) The normal pacemaker of the heart is the AV node. 38) \_\_\_\_\_
- 39) The normal rate of the sinus node is 60-100 beats per minute. 39) \_\_\_\_\_
- 40) The PR interval measures the time it takes for the impulse to travel from the atrium down to the ventricle. 40) \_\_\_\_\_

**SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.**

- 41) Atrial depolarization is represented on the EKG as a \_\_\_\_\_. 41) \_\_\_\_\_
- 42) Depolarization is \_\_\_\_\_. 42) \_\_\_\_\_
- 43) Trans-membrane potential is the electrical charge at \_\_\_\_\_. 43) \_\_\_\_\_
- 44) Refractory means \_\_\_\_\_. 44) \_\_\_\_\_
- 45) One small block on the EKG paper measures \_\_\_\_\_ seconds. 45) \_\_\_\_\_
- 46) Normal QRS interval is \_\_\_\_\_ seconds or less than three small blocks. 46) \_\_\_\_\_
- 47) A negative deflection that occurs before a positive one is labeled a \_\_\_\_\_ wave. 47) \_\_\_\_\_
- 48) Normal conduction begins with the pacemaker of the heart, the \_\_\_\_\_. 48) \_\_\_\_\_

49) The pacemaker with the slowest inherent rate is the \_\_\_\_\_. 49) \_\_\_\_\_

50) Dysrhythmias are \_\_\_\_\_. 50) \_\_\_\_\_

- 1) C
- 2) A
- 3) C
- 4) C
- 5) D
- 6) B
- 7) A
- 8) B
- 9) D
- 10) B
- 11) C
- 12) A
- 13) A
- 14) C
- 15) D
- 16) B
- 17) A
- 18) A
- 19) A
- 20) C
- 21) C
- 22) A
- 23) D
- 24) B
- 25) D
- 26) A
- 27) D
- 28) B
- 29) C
- 30) D
- 31) TRUE
- 32) FALSE
- 33) FALSE
- 34) FALSE
- 35) TRUE
- 36) FALSE
- 37) TRUE
- 38) FALSE
- 39) TRUE
- 40) TRUE
- 41) P wave
- 42) the changing of the cardiac cell to an electrically positive charge
- 43) the cell membrane
- 44) resistant to
- 45) 0.04
- 46)  $< 0.12$
- 47) Q
- 48) sinus node
- 49) ventricle
- 50) abnormal heart rhythms