MULTIPLE CHOICE

1. In sinus arrhythmia, a gradual increasing of the heart rate is usually associated with:
   a. Expiration
   b. Inspiration
   c. Excessive caffeine intake
   d. Early signs of congestive heart failure

2. In sinus arrhythmia, a gradual decreasing of the heart rate is usually associated with:
   a. Expiration
   b. Inspiration
   c. Excessive caffeine intake
   d. Early signs of congestive heart failure

3. The rate of sinus tachycardia is:
   a. Less than 60 bpm  
   b. 40–80 bpm  
   c. 60–100 bpm  
   d. Greater than 100 bpm

4. An ECG rhythm strip shows a ventricular rate of 46, a regular rhythm, a PR interval of 0.14 second, a QRS duration of 0.06, and one upright P wave before each QRS. This rhythm is:
   a. Sinus rhythm
   b. Sinus bradycardia
   c. Sinus arrest
   d. Sinoatrial block

5. An ECG rhythm strip shows a ventricular rate of 128, a regular rhythm, a PR interval of 0.16 second, a QRS duration of 0.08, and one upright P wave before each QRS. This rhythm is:
   a. Sinus arrhythmia
   b. Sinus bradycardia
   c. Sinus rhythm
   d. Sinus tachycardia

6. Which of the following are possible causes of sinus tachycardia?
   a. Hypothermia, hypovolemia
   b. Hypoxia, calcium channel blocker overdose
   c. Fever, pain, anxiety
   d. Vomiting, vagal maneuvers

7. Which of the following are possible causes of sinus bradycardia?
   a. Elevated temperature, pain
   b. Increased intracranial pressure, beta-blocker overdose
   c. Hypoxia, fright, caffeine-containing beverages
   d. Hypovolemia, administration of sympathomimetics

8. The rate of a sinus rhythm is:
   a. Less than 60 bpm  
   b. 80–120 bpm  
   c. 60–100 bpm  
   d. More than 100 bpm

9. The rate of a sinus bradycardia is:
   a. Less than 60 bpm  
   b. 80–120 bpm  
   c. 60–100 bpm  
   d. More than 100 bpm
10. Which of the following may cause a sinus bradycardia?
   a. Stress/anxiety   c. Fever
   b. Increased sympathetic tone   d. Hypothermia

11. Which of the following correctly reflects the ECG criteria for a sinus rhythm?
   a. More P waves than QRS complexes
   b. P waves that look alike and upright in lead II, one before each QRS complex
   c. Irregular atrial and ventricular rhythm
   d. PR interval exceeding 0.20 sec

12. Management of a patient with a sinus tachycardia might include:
   a. Identification and treatment of the underlying cause
   b. Administration of atropine
   c. Use of a pacemaker
   d. Vagal maneuvers, such as carotid sinus pressure

SHORT ANSWER

13. Identify the following rhythm:

   Identification: ____________________________________________

14. Identify the following rhythm:

   Identification: ____________________________________________

15. Identify the following rhythm:

   Identification: ____________________________________________
16. Identify the following rhythm:

Identification: ________________________________

17. Identify the following rhythm:

Identification: ________________________________

18. Complete the following ECG criteria for a sinus rhythm.
   Rate ________________________________________
   Rhythm ________________________________________
   P waves ________________________________________
   PR interval ________________________________________
   QRS duration ________________________________________

19. Complete the following ECG criteria for a sinus bradycardia.
   Rate ________________________________________
   Rhythm ________________________________________
   P waves ________________________________________
   PR interval ________________________________________
   QRS duration ________________________________________

20. Complete the following ECG criteria for a sinus tachycardia.
   Rate ________________________________________
   Rhythm ________________________________________
   P waves ________________________________________
   PR interval ________________________________________
   QRS duration ________________________________________

21. Complete the following ECG criteria for a sinus arrhythmia.
   Rate ________________________________________
   Rhythm ________________________________________
   P waves ________________________________________
   PR interval ________________________________________
   QRS duration ________________________________________
22. Complete the following ECG criteria for a sinoatrial (SA) block.
   Rate ________________________________________
   Rhythm ________________________________________
   P waves ________________________________________
   PR interval ________________________________________
   QRS duration ________________________________________

23. Complete the following ECG criteria for a sinus arrest.
   Rate ________________________________________
   Rhythm ________________________________________
   P waves ________________________________________
   PR interval ________________________________________
   QRS duration ________________________________________

24. List three (3) significant signs and/or symptoms that, if observed with a sinus bradycardia, would require management of this dysrhythmia.
   24.
   25.
   26.

27. Identify the following rhythm:

   Identification: _________________________________

28. Identify the following rhythm:

   Identification: _________________________________
29. Identify the following rhythm:

Identification: ____________________________

30. Identify the following rhythm:

Identification: ____________________________

31. Identify the following rhythm:

Identification: ____________________________

32. Identify the following rhythm:

Identification: ____________________________
1. B
2. A
3. D
4. B
5. D
6. C
7. B
8. C
9. A
10. D
11. B
12. A

13. Sinus rhythm at 70 bpm

14. Sinus bradycardia at 48 bpm with ST-segment depression

15. Sinus rhythm at 98 bpm with ST-segment elevation

16. Sinus rhythm at a rate of 36 to 71 bpm with an episode of SA block

17. Sinus rhythm at a rate of 24 to 81 bpm with an episode of sinus arrest

18. Rate 60–100 bpm
    Rhythm P-P interval regular, R-R interval regular
    P waves Positive (upright) in lead II, one precedes each QRS complex, P waves look alike
    PR interval 0.12–0.20 sec and constant from beat to beat
    QRS durat. 0.10 sec or less unless an intraventricular conduction delay exists

19. Rate Less than 60 bpm
    Rhythm P-P interval regular, R-R interval regular
    P waves Positive (upright) in lead II, one precedes each QRS complex, P waves look alike
    PR interval 0.12–0.20 sec and constant from beat to beat
    QRS durat. 0.10 sec or less unless an intraventricular conduction delay exists

20. Rate 101–180 bpm
    Rhythm P-P interval regular, R-R interval regular
P waves Positive (upright) in lead II, one precedes each QRS complex, P waves look alike
At very fast rates it may be hard to tell the difference between a P wave and a T wave
PR interval 0.12–0.20 sec (may shorten with faster rates) and constant from beat to beat
QRS duration 0.10 sec or less unless an intraventricular conduction delay exists

21.
Rate Usually 60–100 bpm, but may be slower or faster
Rhythm Irregular, phasic with respiration; heart rate increases gradually during inspiration (R-R intervals shorten) and decreases with expiration (R-R intervals lengthen)
P waves Positive (upright) in lead II, one precedes each QRS complex, P waves look alike
PR interval 0.12 to 0.20
QRS duration 0.10 sec or less unless an intraventricular conduction delay exists

22.
Rate Usually normal but varies because of the pause
Rhythm Irregular due to the pause(s) caused by the SA block — the pause is the same as (or an exact multiple of) the distance between two other P-P intervals
P waves Positive (upright) in lead II, P waves look alike. When present, one precedes each QRS complex.
PR interval 0.12–0.20 sec and constant from beat to beat
QRS duration 0.10 sec or less unless an intraventricular conduction delay exists

23.
Rate Usually normal but varies because of the pause
Rhythm Irregular — the pause is of undetermined length (more than one PQRST complex is missing) and is not the same distance as other P-P intervals
P waves Positive (upright) in lead II, P waves look alike. When present, one precedes each QRS complex.
PR interval 0.12–0.20 sec and constant from beat to beat
QRS duration 0.10 sec or less unless an intraventricular conduction delay exists

24, 25, 26 Clinical signs and symptoms of hemodynamic compromise may include:
• Changes in mental status (restlessness, confusion, possible loss of consciousness)
• Low blood pressure
• Chest pain
• Shortness of breath
• Signs of shock
• Congestive heart failure
• Pulmonary congestion
• Fall in urine output
• Cold, clammy skin

27. Sinus rhythm at 65 bpm
28. Sinus bradycardia at 40 bpm; ST-segment depression, inverted T waves
29. Sinus rhythm with a wide QRS at 100 bpm; ST-segment depression, inverted T waves
30. Sinus rhythm at 0–75 bpm with an episode of sinus arrest; tall T waves
31. Sinus rhythm at 85 bpm
32. Sinus Tach at ~150 bpm