1. Regularity_______________________________________________________
Rate____________________________________________________________
P waves_________________________________________________________
PRI_______________________________________________________________
QRS_______________________________________________________________
Interpretation_____________________________________________________

2. Regularity_______________________________________________________
Rate____________________________________________________________
P waves_________________________________________________________
PRI_______________________________________________________________
QRS_______________________________________________________________
Interpretation_____________________________________________________

1/1/2020
3.

Regularity_______________________________________________________
Rate____________________________________________________________
P waves_________________________________________________________
PRI___________________________________________________________
QRS____________________________________________________________
Interpretation____________________________________________________

4.

Regularity_______________________________________________________
Rate____________________________________________________________
P waves_________________________________________________________
PRI___________________________________________________________
QRS____________________________________________________________
Interpretation____________________________________________________
5.

Regularity_______________________________________________________
Rate________________________________________________________
P waves________________________________________________________
PRI____________________________________________________________
QRS____________________________________________________________
QT_______________________________________________________________
Interpretation_____________________________________________________

6.

Regularity_______________________________________________________
Rate________________________________________________________
P waves________________________________________________________
PRI____________________________________________________________
QRS____________________________________________________________
QT_______________________________________________________________
Interpretation_____________________________________________________

1/1/2020
Regularity_______________________________________________________
Rate____________________________________________________________
P waves_________________________________________________________
PRI__________________________________________________________
QRS____________________________________________________________
QT_____________________________________________________________
Interpretation_____________________________________________________

1/1/2020
11.

Regularity_______________________________
Rate_______________________________
P waves_____________________________
PRI_______________________________
QRS_______________________________
Interpretation______________________________

12.

Regularity_______________________________
Rate_______________________________
P waves_____________________________
PRI_______________________________
QRS_______________________________
Interpretation______________________________
13.

Regularity_______________________________________________________
Rate____________________________________________________________
P waves_________________________________________________________
PRI_______________________________________________________________
QRS_______________________________________________________________
Interpretation_____________________________________________________

14.

Regularity_______________________________________________________
Rate____________________________________________________________
P waves_________________________________________________________
PRI_______________________________________________________________
QRS_______________________________________________________________
Interpretation_____________________________________________________

1/1/2020
19.

Regularity_______________________________________________________
Rate____________________________________________________________
P waves_____________________________________
PRI_____________________________________________________________
QRS____________________________________________________________
Interpretation_____________________________________________________

20.

Regularity_______________________________________________________
Rate____________________________________________________________
P waves_________________________________________________________
PRI_____________________________________________________________
QRS____________________________________________________________
QT_____________________________________________________________
Interpretation_____________________________________________________

1/1/2020
23. Where are pacemaker spikes? Before the P wave or before the QRS complex? Did the heart capture the impulse (do you see an appropriate complex)? Is there any underlying rhythm we can see? If so, go through the rules of regularity, rate, P waves, PRI, QRS, QT Interpretation?

24. Where are pacemaker spikes? Before the P wave or before the QRS complex? Did the heart capture the impulse (do you see an appropriate complex)? Is there any underlying rhythm we can see? If so, go through the rules of regularity, rate, P waves, PRI, QRS, QT Interpretation?
Where are pacer spikes? Before the P wave or before the QRS complex? Did the heart capture the impulse (do you see an appropriate complex)? Is there any underlying rhythm we can see? If so, go through the rules of regularity, rate, P waves, PRI, QRS, QT Interpretation?

1/1/2020
Basic Dysrhythmias Review Answers

1. **Regular**
   Rate: 120
   P waves: upright and uniform, 1 P wave for each QRS
   PRI: 0.12 (0.10, 0.12, 0.14 acceptable)
   QRS: 0.12 (0.10, 0.12, 0.14 acceptable)
   Sinus Tachycardia (wide QRS if your measurement was 0.14)

2. **Regular**
   Rate: 240
   P waves: none
   PRI: none
   QRS: do not worry about measuring a QRS—do quick look to determine it is wide and bizarre
   Ventricular Tachycardia

3. **Irregular**
   Rate: 60
   P waves: different morphologies
   PRI: varies between 0.12 to 0.20
   QRS: 0.12 (0.10, 0.12, 0.14 acceptable)
   Wandering Pacemaker (wide QRS if your measurement was 0.14)

4. **Regular**
   Rate: 50
   P waves: upright, uniform, 1 P wave for each QRS
   PRI: 0.16 (0.14, 0.16, 0.18 acceptable)
   QRS: 0.08 (0.06, 0.08, 0.10 acceptable)
   Sinus Bradycardia

5. **Regular**
   Rate: 80
   P waves: inverted before QRS
   PRI: 0.08 (0.06, 0.08, 0.10 acceptable)
   QRS: 0.08 (0.06, 0.08, 0.10 acceptable)
   QT: 0.38 (0.36, 0.38, 0.40 acceptable) (for rate of 80 should be 0.32 to 0.39 so OK)
   Accelerated Junctional Rhythm

6. **Irregular**
   Rate: 100 with ectopics (do not include last QRS because not a full complex) or 50 without ectopics
   P waves: upright, uniform and 1 P wave for each QRS in underlying rhythm. No P waves on ectopics
   PRI: 0.18 (0.16, 0.18, 0.20 acceptable)
   QRS: 0.14 (0.12, 0.14, 0.16 acceptable) in underlying rhythm and ectopics but notice different
   morphology of QRS on ectopics compared to underlying rhythm QRS
   Sinus Rhythm with wide QRS and Bigeminy, Unifocal Premature Ventricular Contractions (PVCs)
   if stated rate is 100 or Sinus Bradycardia with wide QRS and Bigeminy, Unifocal PVC’s if stated rate is 50 (would not have wide QRS if 0.12)
7. Regular
   Rate: 80
   P waves: sawtooth/flutter
   PRI: none
   QRS: 0.10 (0.08, 0.10, 0.12 acceptable)
   Controlled Atrial Flutter, 4:1 conduction

8. Irregular
   Rate: 60
   P waves: fibrillatory or no P waves
   PRI: none
   QRS: 0.08 (0.06, 0.08, 0.10 acceptable)
   Controlled Atrial Fibrillation

9. Irregular
   Rate: 110 with ectopics or 90 without ectopics
   P waves: upright, uniform and 1 P wave for each QRS in underlying rhythm. P waves are hidden in T waves on ectopics
   PRI: 0.16 (0.14, 0.16, 0.18 acceptable)
   QRS: 0.10 (0.08, 0.10, 0.12 acceptable)
   Sinus Tachycardia with 2 Premature Atrial Contractions (PAC’s) if stated rate is 110 or Sinus Rhythm with 2 PAC’s if stated rate is 90

10. Regular
    Rate: 90
    P waves: upright, uniform, 1 P wave for each QRS
    PRI: 0.28 (0.26, 0.28, 0.30 acceptable)
    QRS: 0.08 (0.06, 0.08, 0.10 acceptable)
    QT: 0.40 (0.38, 0.40, 0.42 acceptable) (for rate of 90 should be 0.30 to 0.36 so this is a little prolonged for this rate)
    Sinus Rhythm with First Degree Heart Block, Prolonged QT and ST segment depression

11. Irregular
    Rate: 100 with ectopics or 80 without ectopics
    P waves: upright, uniform and 1 P wave for each QRS in underlying rhythm. No P waves on ectopics
    PRI: 0.20 (0.18, 0.20, 0.22 acceptable)
    QRS: 0.12 (0.10, 0.12, 0.14 acceptable) in underlying and ectopics but notice different morphology of QRS on ectopics compared to underlying rhythm QRS
    Sinus Rhythm with 2 Unifocal Premature Ventricular Contractions (PVC’s) (add First Degree Heart Block if your PRI was 0.22) (add wide QRS if your underlying QRS was 0.14)

12. Irregular
    Rate: 70
    P waves: upright, uniform, 1 P wave for each QRS
    PRI: 0.12 (0.10, 0.12, 0.14 acceptable)
    QRS: 0.08 (0.06, 0.08, 0.10 acceptable)
    Sinus Arrhythmia
13. Regular
   Rate: 200
   P waves: none
   PRI: none
   QRS: 0.06 (0.04, 0.06, 0.08 acceptable)
Supraventricular Tachycardia with ST segment depression

14. Slightly Irregular (Not R-R is off by 2 boxes, but does not change final interpretation)
   Rate: 30
   P waves: upright, more than 1 P wave for each QRS
   PRI: very different
   QRS: 0.12 (0.10, 0.12, 0.14 acceptable)
Third Degree/Complete Heart Block

15. None
   None
   None
   None
   None
   Ventricular Fibrillation

16. Irregular
   Rate: 80 with ectopies or 60 without ectopies
   P waves: upright, uniform and 1 P wave for each QRS in underlying rhythm – No P waves on ectopies
   PRI: 0.18 (0.16, 0.18, 0.20 acceptable)
   QRS: 0.04 (0.02, 0.04, 0.06 acceptable) in underlying rhythm and 0.16 (0.14, 0.16, 0.18 acceptable) for ectopies
Sinus Rhythm with Multifocal Premature Ventricular Contractions (PVCs)

17. Irregular
   Rate: 80 with ectopic or 70 without ectopic
   P waves: upright, uniform and 1 P wave for each QRS in underlying rhythm. Have upright P wave on ectopic beat
   PRI: 0.14 (0.12, 0.14, 0.16 acceptable) in underlying and 0.16 (0.14, 0.16, 0.18 acceptable) on ectopic
   QRS: 0.10 (0.08, 0.10, 0.12 acceptable) in underlying rhythm and ectopic
   QT: 0.38 (0.36, 0.38, 0.40 acceptable) (for rate of 70 should be 0.33 to 0.41 and for rate of 80 should be 0.32 to 0.39, so overall QT not a big concern)
Sinus Rhythm with Premature Atrial Contraction (PAC)

18. Regular
   Rate: 40
   P waves: upright and two P waves for each QRS
   PRI: 0.28 (0.26, 0.28, 0.30 acceptable)
   QRS: 0.10 (0.08, 0.10, 0.12 acceptable)
Second Degree Type II Classical Heart Block and ST segment depression
19. Regular
   Rate: 50
   P waves: none
   PRI: none
   QRS: 0.10 (0.08, 0.10, 0.12 acceptable)
   Junctional Escape

20. Irregular
   Rate: 60 with ectopic or 50 without ectopic
   P waves: upright and 1 P wave for each QRS – no P wave on ectopic beat
   PRI: 0.16 (0.14, 0.16, 0.18 acceptable)
   QRS: 0.06 (0.04, 0.06, 0.08 acceptable)
   QT: 0.40 (0.38, 0.40, 0.42 acceptable) (for rate of 50 should be 0.38 to 0.46 and for rate of 60 should be 0.35 to 0.43, so OK)
   Sinus Rhythm with Premature Junctional Contraction (PJC) if rate 60. Sinus Bradycardia with PJC if rate 50

21. Slightly Irregular
   Rate: 60
   P waves: P wave morphology changes
   PRI: First 3 P waves are 0.16 (0.14, 0.16, 0.18 acceptable) and last 3 P waves are 0.12 (0.10, 0.12, 0.14 acceptable)
   QRS: 0.12 (0.10, 0.12, 0.14 acceptable)
   QT: 0.52 (0.50, 0.52, 0.54 acceptable) (for rate of 60 should be 0.35 to 0.43, so prolonged)
   Wandering Atrial Pacemaker with prolonged QT (add wide QRS if your QRS was 0.14)

22. Irregular
   Rate: 90
   P waves: upright and more P waves than QRS complexes (some P waves hiding in T waves)
   PRI: varies, gets longer and drops a QRS and then pattern starts back over
   QRS: 0.08 (0.06, 0.08, 0.10 acceptable)
   Second Degree Type I Wenckebach Heart Block

23. Slightly Irregular
   Rate: 30
   P waves: none
   PRI: none
   QRS: wide and bizarre
   Idioventricular

24. Pacer spikes are before the QRS, so trying to pace the ventricles
   For each pacer spike, you see a QRS, so it captured
   No underlying rhythm visible
   Interpretation: Ventricular Pacing with 100% Capture

1/1/2020
25. Pacer spikes are before the P wave and before the QRS, so trying to pace the atria and the ventricles
   For each pacer spike, you see an appropriate complex (with pacers, you do not get a normal looking
   P wave and QRS complexes are usually wide and bizarre. You can also see normal QRS
   complexes as well with certain types of pacemakers)
   Interpretation: Dual Chamber Pacing with 100% Capture

26. Pacer spikes are before the QRS, so trying to pace the ventricles
   For each pacer spike, you see a QRS, so it captured
   You can see P waves that the heart generated on its own, so the SA node of the patient works fine.
   There is a problem. If you look at the PRIs on the strip, they are very different, which means
   the pacemaker is not sensing the P waves from the patient. So the P waves and QRS
   complexes are not related
   Interpretation: 100% Ventricular Pacing with Capture with an Underlying Third Degree Heart
   Block

Regarding pacemakers, loss of capture is when the heart does not respond to an electrical stimulus from the
pacemaker, so there will not be a complex after the pacer spike.

Please note, you will not need to do any QT calculations (QTc) for the test. You also do not need to
memorize any QT ranges for your test. If a strip has a prolonged QT interval, every multiple choice answer
for that strip will have prolonged QT on it.

Reference: