Complete the following.

1. The use of cardiac electrophysiology (EP) procedures includes _____________ testing and _____________ treatment procedures.

2. EP studies are performed to determine an _____________ diagnosis or EP _____________ of a known arrhythmia.

3. __________________ or therapeutic EP studies consist of endocardial catheter ablation of supraventricular and ventricular arrhythmias.

4. The placement of implantable cardioverter defibrillators (ICDs) for the management of ___________________________ and ___________________________ is also an interventional EP procedure.

5. Preparation for an EP study is similar to that for _____________ ________________________.

6. During invasive EP testing, spontaneous and _____________ intracardiac and surface electrical signals are recorded.

7. Programmed electrical _____________ may also be used to induce and analyze paroxysmal arrhythmias that are the same as or similar to a patient’s clinical arrhythmia.

8. The AH interval is a measurement of conduction time form the low ___________ atrium through the atrioventricular (AV) node to the His bundle and is an approximation of ___________ conduction time.

9. The HV interval represents _____________ time from the onset of His bundle depolarization to the onset of ventricular activity. The normal HV interval measurement is ______ to _____ milliseconds.

10. _____________ periods for the atrium, AV node, and ventricle are also recorded.

11. Attempts to induce and document the arrhythmia using the introduction of ___________ ___________ in either the atrium or the ventricle are made during the procedure.

12. Intravenous __________________ or __________________ may be used to help induce arrhythmias or reveal accessory pathway (AP) or slow pathway conduction during an EP study.
13. Special physiologic recording equipment is able to document __________________________ every beat in 12-lead EKG and intracardiac electrogram format.

14. Atrial arrhythmias are usually well tolerated and allow for __________________ mapping.

15. The complications that occurred most frequently after EP studies were ___________ ___________ and major venous thrombosis. Cardiac perforation and ______________ ______________ resolved without treatment in most patients.

16. Major ______________ and arterial injury are uncommon complications of EP studies and are substantially less than those with standard cardiac catheterization.

17. Indications for EP study include; coronary heart disease, syncope, and ______________ ______________.

18. _______ therapy is usually recommended as first-line therapy for patients with inducible VT or survivors of cardiac arrest.

19. Implantation of combination anti-tachycardia pacemakers and ICDs usually requires a ______________ EP test and may require testing after implantation to allow for correct programming of the device.

20. EP studies are necessary to ______________ or establish a diagnosis so that proper safe treatment for wide-complex tachycardias.

21. Sudden onset of ______________ without any warning signs or symptoms suggests a cardiac arrhythmia.

22. EP study outcomes suggest that an ______________ is more likely to be the cause of syncope in patients who have structural heart disease and reduced left ventricular function.

23. Invasive EP studies are indicated when a ______________ evaluation for syncope is negative and the suspicion for a cardiac cause remains high.

24. Catheter ______________ techniques have been used for more than 20 years.

25. __________________ energy is a form of electrical energy that is produced by high-frequency alternating current. When used during endocardial catheter ablation the alternating current is in the 500,000 to 750,000 Hz range.

26. The RF current is typically applied for _____ to _____ seconds at a time.
27. Alternate forms of energy for lesion generation are currently under development, including ____________, ultrasound, laser, and microwave energy sources

28. The ablating catheter can be steered and has _______ to _______ electrodes 2 to 5 cm apart.

29. Recently developed ___________________________ mapping systems have vastly improved the precision and efficiency of mapping.

30. Two of the most common complications associated with catheter ablation are inadvertent ______________ _________ ______________ when ablating in close proximity to the conduction system and cardiac ______________________ with tamponade when ablating within the atria, coronary sinus or other cardiac veins, or right ventricle.

31. Combination EP study and catheter ablation procedures are indicated for patients with ______ caused by APs, AVNRT, intra-atrial tachycardias caused by either automatic or reentrant mechanism, atrial fibrillation and atrial flutter.

32. ______________ is responsible for 60% to 70% of paroxysmal SVTs.

33. The typical form of AVNRT is initiated when a premature beat from the atrium is blocked in the fast pathway. The _______ beat conducts down the slow pathway and then reenters back into the atrium through the _______ pathway. This impulse continues to conduct down the slow pathway and up the fast pathway, thus perpetuating the ___________ ___________ and the tachycardia.

34. Ablation of all forms of AVNRT is generally the same and is accomplished by mapping the ___________ pathway region, which extends form the posterior/inferior Interatrial septum near the coronary sinus ostium up to the anterior/superior Interatrial septum.

35. Both WPW syndrome and concealed AV bypass tracts are responsible for 30% to 40% of ___________ SVTs.

36. With WPW syndrome, the _______ wave on the ECG disappears during RF energy application.

37. Ablation for ___________ _____________ involves a discrete anatomic region in the low right atrium thought to be responsible for the macroreentrant circuit.
Chapter 18: Cardiac Electrophysiology Procedures Worksheet

Electrophysiology

38. Complete AV node ablation is indicated for patients who have ____________ or _______________ AF or flutter with a _______ ____________________ ____________. This is done only if conventional antiarrhythmic drug therapy has ______ or for whom the side effects form effective doses of medication are intolerable.

39. Recent ablation techniques for AF have focused on the ______________ __________ within the left atrium.

40. An alternative to endoscopic catheter ablation for AF is _____________-ablation; the Maze procedure.

41. For _____ focus to be ablated, the tachycardia must be inducible, monomorphic, and tolerated for long enough periods to enable accurate mapping.

42. Bundle-branch _______________ tachycardia conducts antegrade over the right bundle and retrograde over the left bundle. This type of VT occurs in patients who have severe _____________ or idiopathic cardiomyopathy. Ablation of the ________ bundle usually abolishes this VT.

43. VT associated with coronary heart disease is usually caused by ________________ mechanism in an area of patchy fibrosis or scar.

44. Techniques to identify the best ablation ______________ for VT are still under development.

45. Most of the intraprocedure and postprocedure patient care is centered on ______________ the patient for potential complications related to the procedure.