

## **STUDY GUIDE for Pharmacology II**

1. A 40-year old male presents lethargic with slurred speech. Evaluation reveals bilateral weakness. His son relates the patient is a diabetic and a finger stick reveals a blood glucose level of 20. Several intravenous attempts are unsuccessful due to the patient's uncooperative behavior; what drug would you administer next?
  - A. glucose gel sublingually
  - B. D50 intramuscularly
  - C. Glucagon 0.3 mg intramuscularly
  - D. Glucagon 1.0 mg intramuscularly
  - E. transport guarding the patient's airway and do nothing else
2. Adenosine is administered slow IV push.
  - A. True
  - B. False
3. Atropine is indicated for bradycardia associated with Type II (Mobitz) and Type III AV block.
  - A. True
  - B. False
4. Which is the preferred vasopressor for treating cardiogenic shock?
  - A. Dopamine
  - B. Dobutamine
  - C. Norepinephrine
  - D. Epinephrine
5. Dopamine at doses greater than 20 mcg/kg/min affects which receptors predominately?
  - A. beta-1
  - B. alpha
  - C. dopaminergic
  - D. beta-2

6. The following medications slow AV conduction. Which one is an endogenous nucleoside?
- A. Isoptin
  - B. Adenocard
  - C. Digoxin
  - D. Procainamide
7. Which class of pharmaceuticals is contraindicated in asthma?
- A. beta blockers
  - B. calcium channel blockers
  - C. xanthines
  - D. diuretics
8. Which inhaled medication can cause altered mental status?
- A. Nitronox
  - B. Vaponefrin
  - C. Atrovent
  - D. Ventolin
9. You are called to evaluate a 30-month-old child with a barking cough that has worsened all day. The patient appears in moderate to severe distress. The best medication to remediate this problem is
- A. oxygen
  - B. albuterol nebulizer
  - C. ipatroprium nebulizer
  - D. vaponefrin nebulizer
10. A 40-year-old man is found by the paramedics to be aphasic with his head turned to the left and his eyes stuck in extreme upward and lateral gaze. His wife notes he has used a suppository recently to control his nausea after dental surgery. Which medication would you consider administering?
- A. Narcan
  - B. Benadryl
  - C. Phenergan
  - D. Thiamine

11. All of the following are sympathomimetics except
- A. Adrenaline
  - B. Levophed
  - C. Normodyne
  - D. Intropin
12. Which of the following drugs is an antiarrhythmic?
- A. Haldol
  - B. Labetolol
  - C. SoluMedrol
  - D. Bretylol
13. All of the following are deactivated by higher pH except
- A. Norepinephrine
  - B. Dopamine
  - C. Epinephrine
  - D. Sodium Bicarbonate
14. Which of the following statements regarding Lidocaine is true?
- A. it accelerates depolarization and automaticity in the ventricles
  - B. it effects the Atria more than the ventricles
  - C. it increases the fibrillation threshold
  - D. it slows atrioventricular conduction
  - E. it depresses myocardial contractility
15. All of the following are considered malignant premature ventricular contractions except
- A. multifocal PVCs
  - B. couplets
  - C. R on T phenomena
  - D. three per minute
16. Lidocaine is contraindicated in second degree Type II and third degree atrioventricular block.
- A. True
  - B. False

17. When bradycardia and PVCs occur together, the PVCs should be treated first.
- A. True
  - B. False
18. Caution must be used when using Levophed concomitantly with what class of drugs as it can precipitate a rise in blood pressure?
- A. beta blockers
  - B. calcium channel blockers
  - C. alpha blockers
  - D. anticholinergics
19. The dose of Lidocaine is
- A. 1.0-1.5 gm/kg initially
  - B. 0.1-1.5 mg/kg initially
  - C. 1.0-1.5 mg/kg initially
  - D. repeated every ten minutes at half the initial dose
20. The following drugs can be administered endotracheally except
- A. xylocaine
  - B. naloxone
  - C. adrenaline
  - D. adenocard
21. Which of the following is derived from the belladonna plant?
- A. morphine sulfate
  - B. digoxine
  - C. atropine sulfate
  - D. adenosine
22. All of the following cause potential hypotension except
- A. labetalol
  - B. dobutamine
  - C. procainamide
  - D. bretylium

23. Which of the following calcium channel blockers acts primarily in the peripheral vasculature and does not slow AV conduction?
- A. Procardia
  - B. Calan
  - C. Cardizem
  - D. Verapamil
24. Match the following medication with its action:
- |                |  |
|----------------|--|
| dobutamine     | A. has alpha and beta effects but more so stimulates beta receptors  |
| dopamine       | B. a positive inotrope, a dose-related chronotrope                   |
| norepinephrine | C. has alpha and beta effects but more so stimulates alpha receptors |
| epinephrine    | D. a positive inotrope, little chronotropy.                          |
25. Which of the following medications is used for ventricular arrhythmia and also has obstetrical indications
- A. bretylium tosylate
  - B. morphine sulfate
  - C. oxytocin
  - D. magnesium sulfate
26. All of the following are indications for using sodium bicarbonate except
- A. late in the management of cardiac arrest
  - B. hypokalemia
  - C. phenobarbital overdose
  - D. tricyclic antidepressant overdose
27. The initial dose of sodium bicarbonate is
- A. 1.0 mEq/kg
  - B. 0.1 mEq/kg
  - C. 0.01 mEq/kg
  - D. 0.001 mEq/kg

28. Of the following narcotic medications, which has a dosing regimen that is essentially determined by the patient's self administration
- A. nitronox
  - B. morphine
  - C. nubain
  - D. demerol
29. The route of choice to administer Lasix in an emergency is
- A. orally
  - B. sublingually
  - C. endotracheally
  - D. intravenously
30. A 72-year-old female presents with a history of increasing shortness of breath, dyspnea on exertion. She denies having any chest pain or pressure. She had an MI five years ago and her only medication is Lopressor. Your examination reveals a third heart sound, increased jugular venous distention and peripheal edema. All of the following are indicated in the management of this patient except
- A. morphine
  - B. furosemide
  - C. nitroglycerin
  - D. nifedipine
31. A 60-year-old man was driving on the expressway when he lost control of his car and drove into the median. He struck the steering wheel and complains of moderate chest pain. He appears anxious and describes the pain as similar to his heart attack of last year. History reveals he has stopped smoking since his MI and he takes an aspirin a day. Examination reveals a contusion over his sternum and tenderness on the left side of his chest. All of the following may be administered as needed except
- A. morphine
  - B. nitroglycerin
  - C. nitrous oxide
  - D. oxygen

32. An 18-year-old female presents complaining of chest pain for the last four hours. It is associated with diaphoresis, nausea, and shortness of breath. She appears anxious. She is a smoker and finally revealed the symptoms began while she was smoking crack cocaine. Her vitals are HR 110, BP 120/65, RR 22. What medications would be best suited to administer to this patient?
- A. nitroglycerin
  - B. nifedipine
  - C. oxygen
  - D. morphine
33. All of the following mechanisms pertaining to calcium chloride are true except
- A. increase myocardial contractile force
  - B. increased ventricular automaticity
  - C. used as an antidote for morphine sulfate toxicity
  - D. can minimize side effects of calcium channel blocker usage
34. Choose the incorrect statement as it relates to calcium chloride
- A. it will precipitate with sodium bicarbonate
  - B. it is used in the management of hyperkalemia and hypocalcemia
  - C. it can lower digoxin levels therefore patients on digoxin will require higher doses
  - D. it can cause arrhythmias, syncope, nausea, and cardiac arrest
35. Nitroglycerin should not be administered in the following scenarios:
- A. hypotensive patients
  - B. patients who are allergic to nitrates
  - C. patients with increased intracranial pressure
  - D. patients who are in shock
- A. True
  - B. False
36. Which of the following statements regarding epinephrine is false?
- A. Epi affects both alpha and beta receptors.
  - B. Epi increases myocardial oxygen demand and increases the size of an infarct.
  - C. Epi's alpha effects are stronger than its beta effects.
  - D. Epi is a short-acting drug and requires repeat boluses every 5 minutes to maintain a therapeutic blood level of the drug.
  - E. Epi is ineffective when administered to an acidotic patient.

37. Epinephrine 1:10,000 is indicated in all of the following situations, except
- A. ventricular fibrillation.
  - B. asystole.
  - C. pulmonary edema.
  - D. pulseless electrical activity (PEA).
  - E. anaphylactic shock.
38. Administration of epinephrine 1:10,000 is contraindicated in patients who are
- A. not in need of significant respiratory or cardiopulmonary resuscitation.
  - B. suffering from minor asthma.
  - C. hypovolemic.
  - D. Answers A and C only.
  - E. Answers A, B, and C.
39. Which of the following statements regarding epinephrine 1:10,000 is true?
- A. Epi requires protection from light.
  - B. Epi is deactivated when combined with alkaline solutions.
  - C. Epi is contraindicated in pediatric patients.
  - D. Both answers A and B are true.
  - E. Both answers B and C are true.
40. For administration in adult cardiac arrest, epinephrine 1:10,000 is administered in doses of
- A. 1.0 to 2.0 mg IVP every 5 to 10 minutes.
  - B. 0.5 to 1.0 mg IVP every 3 to 5 minutes.
  - C. 1.0 to 2.5 mg ET every 3 to 5 minutes.
  - D. Both answers A and C.
  - E. Both answers B and C.
41. Doses of epinephrine 1:10,000 may be administered via
- A. IV only.
  - B. SQ only.
  - C. IO or SQ only.
  - D. IV or ET only.
  - E. IV, ET, or IO only.



42. Which of the following statements regarding norepinephrine (Levophed) is false?
- A. Levophed, in therapeutic doses, provides vasodilation of the renal and mesenteric vasculature to preserve their functions.
  - B. Norepinephrine primarily affects alpha receptors, providing extensive peripheral vasoconstriction.
  - C. Levophed is indicated for use in hypotension secondary to cardiogenic or neurogenic shock and is contraindicated in hypovolemic shock.
  - D. Tissue necrosis will result if norepinephrine is infused through an infiltrated IV site.
  - E. Levophed is administered only by IV drip, piggybacked onto a preexisting IV line.
43. The trade name for isoproterenol is
- A. Inderal
  - B. Intropin
  - C. Isuprel
  - D. Isoptin
  - E. Stadol
44. Which of the following statements regarding isoproterenol is false?
- A. Isoproterenol is used to increase peripheral vascular resistance.
  - B. Isoproterenol acts only on beta receptors.
  - C. Isoproterenol increases cardiac output by increasing the heart rate and strength of contractility.
  - D. Isoproterenol increases myocardial oxygen demand and can increase the size of an infarct.
  - E. Isoproterenol is deactivated when combined with alkaline solutions.
45. The most commonly used trade name for dopamine is
- A. Intropine
  - B. Dobutrex
  - C. Intropin
  - D. Inopress
  - E. Dopastat

46. Which of the following statements regarding dopamine is false?
- A. Dopamine in therapeutic doses maintains blood flow through the renal and mesenteric vasculature to preserve their functions.
  - B. Dopamine is a vasopressor and may cause hypertensive crisis in a patient taking monoamine oxidase (MAO) inhibitors for depression.
  - C. At 2-10 : g/kg/minute, dopamine primarily affects beta 1 receptors.
  - D. Dopamine's special chemistry allows for administration of sodium bicarbonate through a dopamine infusion line.
  - E. None of the above is false.
47. Dopamine is indicated for use in cases of
- A. cardiogenic hypotension only.
  - B. cardiogenic and neurogenic hypotension (or hypovolemic hypotension after fluid resuscitation only).
  - C. hypovolemic hypotension only.
  - D. cardiogenic and/or neurogenic hypotension only.
  - E. neurogenic hypotension only.
48. Dopamine is administered by a piggybacked infusion prepared by adding
- A. 800 mg of dopamine to 1000 ml of normal saline.
  - B. 800 mg of dopamine to 500 ml of 5% dextrose in water.
  - C. 400 mg of dopamine to 250 ml of 5% dextrose in water.
  - D. Both answers A and B.
  - E. Both answers B and C.
49. The desired vasopressor effect of dopamine is best achieved when administered in the dose range of
- A. 2 to 5 : g/kg/min.
  - B. 10 to 20 : g/kg/min.
  - C. over 20 : g/kg/min.
  - D. All of the above.
  - E. None of the above.
50. Which of the following statements regarding dobutamine is false?
- A. Dobutamine is administered in IV boluses of 0.5 to 1.0 mg, and repeated every 10 minutes.
  - B. Dobutamine is used for congestive heart failure patients who are hypotensive.
  - C. Dobutamine has a positive inotropic effect with little chronotropic activity.
  - D. Dobutamine produces less increase in heart rate than isoproterenol or dopamine.
  - E. Dobutamine should be administered at a flow rate based on the patient's response.

51. Which of the following statements regarding lidocaine is false?
- A. Lidocaine lowers the threshold of ventricular fibrillation.
  - B. Lidocaine decreases the incidence of PVC's by suppressing ventricular ectopy.
  - C. Lidocaine may depress the central nervous system.
  - D. Ectopy suppression occurs only when adequate blood levels of lidocaine are maintained by repeated boluses or a maintenance infusion.
  - E. Successful defibrillation should be followed by administration of lidocaine.
52. Lidocaine is indicated in all of the following situations, except
- A. atrial fibrillation with a ventricular rate above 100.
  - B. malignant PVCs
  - C. ventricular tachycardia with pulses.
  - D. ventricular fibrillation.
  - E. wide complex PSVT.
53. Lidocaine is contraindicated in all of the following situations, except
- A. second-degree AV block with more than six PVCs per minute.
  - B. third-degree AV block with R-on-T PVCs.
  - C. bradycardia with couplet PVCs
  - D. bradycardia refractory to atropine and isuprel, with R-on-T PVCs.
  - E. sinus rhythm without ectopy, after defibrillation.
54. Untoward effects of lidocaine administration include all of the following, except
- A. agitation or irritability.
  - B. euphoria or elation.
  - C. drowsiness or altered level of consciousness.
  - D. muscle twitching or seizures.
  - E. unresponsiveness and death.
55. The standard IV bolus dosage of lidocaine is
- A. 1 mg/kg IV bolus, repeated every 8 to 10 minutes only if ectopy continues
  - B. 1 mg/kg IV bolus, repeated every 5 minutes until a lidocaine infusion is prepared and administered.
  - C. 0.5-0.75 mg/kg IV bolus followed by 1.0-1.5 mg/kg repeat boluses every 5-10 minutes until a lidocaine infusion is prepared and administered, or maximum bolus dose of 3 mg/kg is reached.
  - D. 1.0-1.5 mg/kg IV bolus, repeated every 8 to 10 minutes until a lidocaine infusion is prepared and administered.
  - E. 1.0-1.5 mg/kg IV bolus followed by 0.5-0.75 mg/kg IV bolus followed by 0.5-0.75 mg/kg repeat boluses every 5 to 10 minutes until a lidocaine infusion is prepared and administered, or maximum bolus dose of 3 mg/kg is reached.

56. The initial bolus of lidocaine should be
- A. administered by infusion, at a TKO rate, if the patient is complaining of chest pain and has malignant PVCs.
  - B. reduced by half if the patient is 70 years old or older.
  - C. doubled if the patient is in cardiopulmonary arrest.
  - D. answers a and b only
  - E. answers a, b and c
57. Administration routes for lidocaine include
- A. IV only.
  - B. ET only.
  - C. IO only.
  - D. IV or ET.
  - E. IV, ET, or IO.
58. Which of the following statements regarding bretylium tosylate (Bretylol) is false?
- A. Bretylium's effects are seen within one minute of administration.
  - B. Bretylium increases the threshold of ventricular fibrillation.
  - C. When used for indicated situations, there are no contraindications for bretylium.
  - D. Bretylium is only used when lidocaine has proved unsuccessful (or when a patient is hypersensitive to lidocaine).
  - E. Postural hypotension will occur in at least 50 percent of all conscious patients receiving bretylium.
59. Bretylium is indicated for
- A. malignant PVCs or ventricular dysrhythmias that are refractory to lidocaine
  - B. atrial fibrillation that is refractory to lidocaine.
  - C. malignant PVCs, ventricular dysrhythmias, or atrial fibrillation in patients allergic to lidocaine.
  - D. Answers a and c only.
  - E. answers a, b, and c
60. Bretylium is administered in which of the following manners?
- A. 1.0 to 1.5 mg/kg IV bolus every 5 minutes, until dysrhythmia is discontinued.
  - B. 1.0 to 1.5 mg/kg IV bolus. If dysrhythmia persists, 0.5 to 0.75 mg/kg boluses may be given q 5 minutes not to exceed a total dose of 30mg/kg.
  - C. 5mg/kg initial IV bolus. If dysrhythmia persists, 10 mg/kg boluses may be given every 5 minutes, not to exceed a total of 30 mg/kg.
  - D. 10 mg/kg initial IV bolus. If dysrhythmia persist, 5 mg/kg boluses may be given every 5 minutes, not to exceed a total dose of 30 mg/kg.
  - E. IV infusion only; prepared by adding 500 mg of bretylium to 100 ml 5% dextrose in water, infused over 5 to 50 minutes.

61. Administration routes for bretylium include
- A. IV only.
  - B. ET only.
  - C. IO only.
  - D. IV or ET.
  - E. IV or IO.
62. Which of the following statements regarding procainamide (Pronestyl) is false?
- A. Procainamide is indicated for ventricular dysrhythmias only.
  - B. 3 mg/kg of lidocaine must be found unsuccessful prior to initiation of procainamide therapy.
  - C. Procainamide is particularly effective for treatment of PVCs in the presence of bradycardias or heart blocks.
  - D. The presence of heart blocks contraindicates procainamide administration.
  - E. The effect-duration of procainamide is shorter than that of lidocaine.
63. Which of the following statements regarding procainamide administration is false?
- A. Discontinue procainamide if the patient becomes hypotensive.
  - B. Discontinue administration when 20 mg/kg of procainamide have been delivered.
  - C. Procainamide is never administered via the ET tube.
  - D. Discontinue procainamide administration if the original QRS width has widened by 50 percent or more.
  - E. Discontinue procainamide administration when the dysrhythmia is suppressed.
64. Verapamil is available in capsules form under the trade name Verelan. In tablet form, Verapamil is available under the trade names of
- A. Ioptin and Cardene.
  - B. Cardene and Calan.
  - C. Ioptin and Calan.
  - D. Isoxsuprine and Ioptin.
  - E. Calan and Cardizem.
65. Verapamil
- A. is used to treat narrow-complex PSVTs.
  - B. is used to treat symptomatic atrial flutter or fibrillation with too rapid a ventricular response.
  - C. causes coronary vasodilation and reduces myocardial oxygen demand.
  - D. answers a and b only.
  - E. answers a, b, and c

66. Verapamil
- A. causes peripheral vasodilation and is contraindicated in hypotensive patients.
  - B. is contraindicated for patients on beta-blocking medications or patients with a history of WPW syndrome.
  - C. may be administered IV, ET, or IO.
  - D. answers a and b only
  - E. answers a, b and c
67. Which of the following statements regarding verapamil administration is true?
- A. The initial dose is 5 to 10 mg slow IVP, followed by a repeat bolus (if the dysrhythmia persists) of 2.5 to 5 mg after 15 to 30 minutes, not to exceed a total dose of 30 mg in 30 minutes.
  - B. The initial dose is 2.5 to 5 mg slow IVP, followed by a repeat bolus (if the dysrhythmia persists) of 5 to 10 mg after 15 to 30 minutes, not to exceed a total dose of 30mg in 30 minutes.
  - C. The initial dose is 5 to 10 mg slow IVP, followed by a repeat bolus (if the dysrhythmia persists) of 20 to 30 mg after 15 to 30 minutes, not to exceed a total dose of 60 mg in 30 minutes
  - D. Any of the above is true
  - E. None of the above is true.
68. Which of the following statements is false?
- A. Adenosine is a natural substance present in all body cells.
  - B. Another name for adenosine is Tonocard.
  - C. Adenosine decreases AV conduction.
  - D. The half-life of adenosine is less than 5 seconds.
  - E. None of the above is false.
69. Indications for adenosine administration include
- A. narrow complex PSVT refractory to vagal maneuvers.
  - B. Wolff-Parkinson-White (WPW) tachycardias, refractory to vagal maneuvers
  - C. wide complex tachycardias, refractory to vagal maneuvers
  - D. answers a and b only
  - E. answers a and c only

70. Contraindications for adenosine administration include
- A. second- or third degree heart blocks
  - B. hypersensitivity to adenosine
  - C. sick sinus syndrome
  - D. answers a and b only
  - E. answers a, b, and c
71. Following cardioversion, adenosine may cause all of the following, except
- A. PVCs or PACs
  - B. prolonged(greater than 10 minutes) nausea
  - C. sinus bradycardia or AV blocks
  - D. sinus tachycardia
  - E. transient asystole
72. Which of the following statements is true?
- A. Adenosine administration may precipitate bronchospasm in patients with asthma
  - B. Chest pain, shortness of breath, dizziness, and nausea are common side effects of adenosine
  - C. Adenosine side effects are usually self-limited because of its short half-life
  - D. answers b and c are true.
  - E. All of the above are true
73. The initial dose of adenosine is
- A. 6 mg rapid IVP (within 1 to 2 seconds).
  - B. 6 mg slow IVP (other 30 seconds to 1 minute).
  - C. 3 mg rapid IVP (within 1 to 2 seconds).
  - D. 3 mg slow IVP (over 30 seconds to 1 minute).
  - E. 15 mg rapid IVP (over 15 to 30 seconds).
74. If conversion of the tachycardia is not achieved within 1 to 2 minutes, the repeat dosage of adenosine is
- A. 12 mg rapid IVP (within 1 to 2 seconds).
  - B. 12 mg slow IVP (over 30 seconds to 1 minute).
  - C. 6 mg rapid IVP (within 1 to 2 seconds).
  - D. 6 mg slow IVP (over 30 seconds to 1 minute).
  - E. 30 mg rapid IVP (over 15 to 30 seconds).

75. Which of the following statements regarding adenosine administration is false?
- A. Adenosine may be administered IV or ET.
  - B. Adenosine should be administered only by rapid IVP directly into the vein or into the medication administration port closest to the patient.
  - C. The second dose of adenosine may be repeated once, at the same dose.
  - D. Single bolus doses greater than 12 mg of adenosine are contraindicated.
  - E. Each bolus of adenosine should be followed by a rapid saline flush.
76. Which of the following statements regarding atropine is false?
- A. Atropine is a parasympathetic blocker.
  - B. Atropine blocks organophosphate insecticide effects.
  - C. Atropine has positive inotropic effects with little to no chronotropic effects.
  - D. Five or more mg of atropine may be required to reverse organophosphate poisoning.
  - E. In the presence of atropine's indications, there are no contraindications for its use.
77. Atropine is indicated for all of the following situations, except.
- A. symptomatic bradycardias with or without ectopy.
  - B. symptomatic second degree type I AV blocks.
  - C. symptomatic PSVT.
  - D. asystole.
  - E. bradycardic PEA (EMD).
78. In a cardiac arrest situation, atropine is administered in doses of
- A. 0.5 mg every 3 to 5 minutes, not to exceed 0.04 mg/kg or 3 mg.
  - B. 1.0 mg every 3 to 5 minutes, not to exceed 0.4 mg/kg or 3 mg.
  - C. 1.0 mg every 3 to 5 minutes, not to exceed 0.5 mg/kg or 4 mg.
  - D. 1.0 mg every 3 to 5 minutes, not to exceed 0.04 mg/kg or 3 mg.
  - E. 0.1 mg/kg every 3 to 5 minutes, not to exceed 0.05 mg/kg or 4 mg.
79. In a symptomatic patient with a pulse (unrelated to organophosphate exposure situations), atropine is administered in doses of
- A. 0.5 mg every 3 to 5 minutes, not to exceed 0.04 mg/kg or 3 mg.
  - B. 1.0 mg every 3 to 5 minutes, not to exceed 0.4 mg/kg or 3 mg.
  - C. 1.0 mg every 3 to 5 minutes, not to exceed 0.5 mg/kg or 4 mg.
  - D. 1.0 mg every 3 to 5 minutes, not to exceed 0.04 mg/kg or 3 mg.
  - E. 0.1 mg/kg every 3 to 5 minutes, not to exceed 0.05 mg/kg or 4 mg.



80. Administration routes for atropine include
- A. IV only.
  - B. ET only.
  - C. IO only.
  - D. IV or ET.
  - E. IV, ET, or IO.
81. Which of the following statements regarding sodium bicarbonate is false?
- A. Sodium bicarb is administered immediately after intubation during a cardiac arrest with a known down time of more than 10 minutes.
  - B. Sodium bicarb can cause metabolic acidosis if administered in large doses.
  - C. The administration of sodium bicarb has not been proven effective in the early treatment of cardiac arrest.
  - D. Both answers A and B are false.
  - E. None of the above is false.
82. Sodium bicarbonate is used in the treatment of
- A. tricyclic antidepressant overdose.
  - B. cardiac arrest refractory to intubation, hyperventilation, and first-line ACLS medications.
  - C. cardiac arrest prior to administration of lidocaine.
  - D. Answers A and B only.
  - E. Answers A, B and C.
83. The correct administration of sodium bicarbonate is
- A. a 0.5 mEq/kg bolus, repeated (if needed) after 10 minutes with a 1.0 mEq/kg bolus.
  - B. a 1.0 mEq/kg bolus, repeated (if needed) after 10 minutes with a 0.5 mEq/kg bolus.
  - C. a 0.5 mEq/kg bolus, repeated (if needed) after 10 minutes.
  - D. a 1.0 mEq/kg bolus, repeated (if needed) after 10 minutes.
  - E. None of the above.
84. Administration routes for sodium bicarbonate include
- A. IV only.
  - B. ET only.
  - C. IO only.
  - D. IV or ET
  - E. IV, ET, or IO.

85. Which of the following statements regarding morphine sulfate is false?
- A. Morphine is classified as a schedule V drug.
  - B. Morphine is a narcotic analgesic derived from opium.
  - C. Morphine reduces systemic vascular resistance and increases venous capacitance, thus relieving pulmonary edema.
  - D. Morphine decreases venous return and diminishes myocardial oxygen demand.
  - E. Morphine alleviates anxiety that might otherwise result in increased infarct size.
86. Morphine sulfate is indicated for the treatment of all of the following, except
- A. chest pain in the setting of an AMI.
  - B. symptomatic pulmonary edema with associated chest pain.
  - C. symptomatic pulmonary edema without chest pain.
  - D. chest pain in the setting of blunt trauma to the chest.
  - E. severe pain from isolated extremity trauma or kidney stones.
87. Morphine sulfate is contraindicated for administration to patients who are
- A. hypotensive or hypovolemic.
  - B. head injured or complaining of abdominal pain.
  - C. allergic to barbiturates.
  - D. Answers A and B only.
  - E. Answers A, B, and C.
88. Administration of morphine sulfate may cause
- A. life-threatening allergic reactions.
  - B. respiratory depression or arrest.
  - C. hypotension in a normotensive patient.
  - D. Answers A and B only.
  - E. Answers A, B, and C.
89. Morphine sulfate is administered in
- A. 10 mg boluses every few minutes until total pain relief is achieved.
  - B. an initial dose of 5 mg, followed by 4 mg every few minutes until pain relief is achieved or respiratory depression occurs.
  - C. an initial dose of 2 to 10 mg, followed by 2 mg every few minutes until pain tolerance is achieved or respiratory depression occurs.
  - D. 2 mg injections only, repeated only as necessary to achieve total pain relief.
  - E. None of the above.

90. Which of the following statements regarding Nitronox is false?
- A. Nitronox is an inhaled analgesic, administered instead of oxygen to achieve pain relief without the dangerous side effects of morphine.
  - B. Nitronox is administered via a standard nonrebreathing mask.
  - C. Nitronox may be administered to patients with altered levels of consciousness when pain is clearly a complaint
  - D. All of the above are false.
  - E. None of the above is false.
91. Nitronox is indicated in all of the following situations, except
- A. burns.
  - B. severe anxiety reactions secondary to alcohol or drug abuse,
  - C. musculoskeletal pain.
  - D. cardiac chest pain.
  - E. musculockeletal trauma.
92. Nitronox is particularly useful in cases of
- A. severe head injury with altered level of consciousness.
  - B. chest trauma with suspected pneumothorax.
  - C. bowel obstruction.
  - D. injured COPD patients who should not receive high concentrations of oxygen.
  - E. none of the above.
93. Which of the following statements regarding furosemide (Lasix) is false?
- A. Lasix is prescribed to patients who suffer from hypertension.
  - B. Lasix inhibits reabsorption of sodium in the kidneys.
  - C. Lasix is a potent diuretic, but its diuresis effects are not observed until 20 or more minutes after administration.
  - D. Lasix promotes reabsorption of potassium in the kidneys.
  - E. Lasix is a vasodilator and must be protected from light to maintain potency.
94. Furosemide is indicated for the treatment of
- A. congestive heart failure with pulmonay edema.
  - B. congestive heart failure with hypotension.
  - C. anaphylaxis with pulmonary edema.
  - D. answers a and b only
  - E. answers a, b, and c

95. Furosemide may cause
- A. fetal abnormalities if administered to a pregnant woman.
  - B. dehydration from fluid loss.
  - C. electrolyte depletion from fluid loss.
  - D. answers b and c only
  - E. answers a, b, and c
96. Furosemide may be administered in a dose of
- A. 20 mg when the patient is already on diuretic therapy.
  - B. 40 mg when the patient is not on diuretic therapy.
  - C. as high as 80 mg when severe threat is indicated.
  - D. all of the above.
  - E. none of the above.
97. Which of the following statements regarding nitroglycerin (NTG) is false?
- A. NTG is a vascular smooth-muscle relaxant.
  - B. NTG will dilate cerebral arteries and decrease intracranial pressure.
  - C. NTG will dilate coronary arteries and improve myocardial perfusion.
  - D. NTG commonly causes headaches and may cause hypotension.
  - E. NTG deteriorates when exposed to air and light.
98. Nitroglycerin is indicated for all of the following situations except
- A. angina.
  - B. chest pain associated with AMI.
  - C. pulmonary edema.
  - D. cerebral edema.
  - E. chest pain associated with congestive heart failure.
99. Administration of 0.4 mg nitroglycerin tablets or sprays is done sublingually, in a frequency of
- A. one tablet/spray every 5 to 10 minutes, until pain relief is achieved or headaches ensues.
  - B. one tablet/spray every every 3 to 5 minutes, until pain relief is achieved, hypotension ensues, or a total of 3 doses has been taken.
  - C. one to three tablets/sprays every 5 to 10 minutes as needed to achieve pain relief.
  - D. any of the above.
  - E. none of the above.

100. Which of the following statements regarding calcium chloride is false?
- A. calcium is used in treatment of asystole and PEA (EMD).
  - B. calcium may cause digitalis toxicity in patients on digitalis medications.
  - C. Calcium is indicated in the treatment of hypocalcemia
  - D. Calcium may be used in the treatment of hyperkalemia