

Answer Sheet

Dental Pharmacology

Mid Term

March 15, 2004

1. E/B	11. E	21. D	31. D	41. D
2. A	12. C	22. C	32. A	42. C
3. D	13. E	23. C	33. B	43. E
4. E	14. A	24. D	34. C	44. B
5. A	15. D	25. B	35. C	45. C
6. A	16. D	26. E	36. E	46. B
7. B	17. B	27. C	37. B	47. C
8. C	18. D	28. B	38. B	48. E
9. D	19. B	29. B	39. A	49. C
10. D	20. C	30. C	40. C	50. B

Questions 1 - 48: Select the single, most appropriate answer.

1. Which of the following drugs causes gingival hyperplasia as a side effect?

- E
- A. Lidocaine
 - B. Verapamil
 - C. Quinidine
 - D. Amiodarone
 - ☒ E. Phenytoin

2. Which of the following drugs is only used intravenously, and is not available orally due to high first pass liver metabolism?

- A
- ☒ A. Lidocaine
 - ~~B. Verapamil~~
 - ~~C. Quinidine~~ *is not*
 - D. Amiodarone
 - ~~E. Phenytoin~~

3. Which of the following best describes the mechanism of action for the antihyperlipidemic drug pravastatin?

- D
- A. Inhibition of cholesterol endocytosis
 - B. Activation of cholesterol endocytosis
 - C. Inhibition of lipoprotein lipase
 - ☒ D. Inhibition of HMG-CoA reductase
 - ~~E. Binding to bile acids, thus preventing reuptake of cholesterol~~

4. The most frequent clinical problem of all thrombolytics is

- E
- A. Interaction with other drugs
 - B. Hepatic necrosis
 - C. Renal damage
 - D. Hypertension
 - ☒ E. Excessive bleeding

5. Which of the following drugs is an orally effective anticoagulant?

- A
- ☒ A. Warfarin
 - ~~B. Clopidogrel~~
 - ~~C. Enoxaparin~~
 - ~~D. Streptokinase~~
 - E. Heparin *parenteral*

6. Before beginning folate therapy for megaloblastic anemia, the physician should consider which of the following to prevent neurological disease?

- A
- ☒ A. Vitamin B₁₂ deficiency
 - B. Zinc deficiency
 - C. Iron deficiency
 - D. Vitamin B₆ deficiency
 - E. Vitamin C deficiency

7. Which of the following drugs is most likely to increase cardiac contractility and decrease intracellular potassium?

- B
- A. ~~Propranolol~~ ^{B blocker}
 - ☒ B. Digitoxin
 - C. ~~Hydrochlorothiazide~~ ^{diuretic}
 - D. Atenolol
 - E. Clonidine ^{B blocker}

8. The antianginal action of nitroglycerin is due to

- C
- ~~A. Decreased cGMP~~
 - ~~B. Beta-adrenergic receptor blockade~~
 - ☒ C. Decreased cardiac wall tension and vasodilation
 - ~~D. Pronounced diuresis - adverse effect~~
 - E. Increased oxygen utilization
- ↓ venous

9. Which of the following drugs is used chronically in the treatment of angina?

- D
- A. Epinephrine
 - B. Clonidine
 - C. Isoproterenol
 - ☒ D. Verapamil ^{1*}
 - E. Morphine

10. An antihypertensive drug that inhibits angiotensin converting enzyme (ACE):

- D
- A. Methyldopa
 - B. Reserpine
 - C. Guanethidine
 - ☒ D. Captopril
 - E. Chlorothiazide

11. Which of the following analgesics has a metabolite that can produce CNS excitation including seizures?

- E*
- A. Morphine
 - B. Fentanyl
 - C. Oxycodone
 - D. Methadone
 - ☒ E. Meperidine

12. Which of the following is the most likely potential side effect of morphine?

- 100%*
am d
DDSC
- ~~A. Mydriasis~~
 - ~~B. Diarrhea~~
 - ☒ C. Nausea
 - D. Photosensitivity
 - ~~E. Increased heart rate~~

13. Which of the following statements is true with regard to cocaine?

- E*
- A. Overdose can be effectively treated with naloxone
 - ~~B. Does not produce physical dependence~~
 - C. Is a dopamine receptor antagonist
 - D. Cocaine's onset of action is the same following intranasal and intravenous administration
 - ☒ E. Overdose can result in fatal cardiac arrhythmias

14. Marijuana is listed in which Federal schedule of controlled substances?

- A*
- ☒ A. Schedule I
 - B. Schedule II
 - C. Schedule III
 - D. Schedule IV
 - E. Schedule V

15. Withdrawal from heroin is associated with autonomic hyperactivity. A non-opioid drug that is effective in diminishing these withdrawal symptoms is

- D*
- ~~A. Thebaine~~
 - ~~B. Ibuprofen~~
 - C. Bromocriptine
 - D. Clonidine
 - ☒ E. Buprenorphine
- Methadone*

16. Which of the following drugs reacts with hydrochloric acid to form a gas that might distend and damage the stomach? The drug often alters serum electrolytes and pH because it is absorbed.

- D*
- A. Loperamide *anti-diarr*
 - B. Magnesium hydroxide *L.A.M.L.*
 - C. Calcium carbonate *constipation*
 - ☒ D. Sodium bicarbonate
 - E. Aluminum hydroxide *constipation*

17. Which of the following is a cytoprotective drug coating the surface of a peptic ulcer?

- B*
- A. Cimetidine
 - ☒ B. Sucralfate
 - C. Omeprazole
 - D. Aspirin
 - E. Dextropropoxyphene

18. Which of the following is an aldosterone antagonist with natriuretic and potassium-sparing properties?

- D*
- A. Amiloride
 - B. Chlorothiazide
 - C. Mannitol
 - ☒ D. Spironolactone
 - E. Triamterene

19. Which of the following drugs is an adenosine receptor antagonist and a phosphodiesterase inhibitor?

- B*
- A. ~~Nicotine~~
 - ☒ B. Theophylline *Xanthine*
 - C. ~~Ethanol~~
 - D. Methylphenidate
 - E. Albuterol

20. Which of the following drugs has the greatest beta-2 adrenergic receptor selectivity, is an effective bronchodilator, has reduced cardiac stimulation, and causes tremor with oral use?

- C*
- A. Epinephrine
 - B. Beclomethasone
 - ☒ C. Albuterol
 - D. Zafirlukast
 - E. Theophylline

21. Which of the following drugs is a leukotriene receptor antagonist?

- D
- A. Aminophylline
 - B. Beclomethasone
 - C. Salmeterol
 - ☒ D. Zafirlukast
 - E. Zileuton

22. The therapeutic effect of cromolyn in your patient with bronchial asthma is due to the drug's action on

- C
- A. Beta₁ adrenergic receptors
 - B. Beta₂ adrenergic receptors
 - ☒ C. Mast cell membranes
 - D. Muscarinic receptors
 - E. Histamine H₁ receptors

23. Which of the following agents has a rapid onset of laxative action; and is inactive prior to its hydrolysis in the intestine?

- C
- A. Magnesium citrate
 - B. Psyllium hydrophilic muciloid
 - ☒ C. Castor oil
 - D. Bran
 - E. Mineral oil

24. Which of the following drugs can be used as an antidote for acetaminophen overdose?

- D
- A. Infliximab
 - B. Methyl salicylate
 - C. Sodium bicarbonate
 - ☒ D. N-Acetylcysteine
 - E. Indomethacin

25. Ringing in the ears is most likely associated with high doses of

- B
- A. Acetaminophen
 - ☒ B. Aspirin
 - C. Piroxicam
 - D. Infliximab
 - E. Etanercept

26. Aspirin is contraindicated in patients with bleeding disorders (e.g. hemophilia) because it

- E
- A. Is a weak acid
 - B. Is metabolized by pseudocholinesterases in blood
 - ~~C. Increases stomach pH~~ ↓
 - D. Is a competitive (reversible) inhibitor of COX in platelets
 - E. Is a noncompetitive (irreversible) inhibitor of COX in platelets

27. Which of the following drugs causes cinchonism (blurred vision, tinnitus, etc.) as a side effect?

- C
- A. Lidocaine
 - B. Verapamil
 - ☒ C. Quinidine
 - D. Amiodarone
 - E. Phenytoin
- CO₂
N C
Q d p

28. A 70 year-old woman takes diphenhydramine for an allergic reaction. Which of the following best describes the adverse reaction profile of this drug?

- B
- A. Miosis and diarrhea
 - ☒ B. Sedation, blurred vision and constipation
 - C. Hepatotoxicity
 - D. Congestive heart failure
 - E. Renal impairment

29. Which of the following drugs protects against cardiovascular disease by irreversible antagonism of the platelet ADP receptor?

- B
- A. Abciximab
 - ☒ B. Clopidogrel
 - C. Amicar
 - D. Streptokinase
 - E. Aspirin

30. Anemia due to iron deficiency is typically

- C
- A. Megaloblastic
 - B. Hemolytic
 - ☒ C. Hypochromic
 - D. Aplastic
 - E. Characterized by sickle-shaped erythrocytes

31. Digoxin

AV block

- ☒ A. Decreases AV nodal refractory period
☒ B. Shortens the PR interval
☒ C. Increases conduction velocity through the AV node
☒ D. Increases automaticity of latent pacemaker cells
☒ E. Dilates most arteries

32. A common adverse reaction of nitroglycerin is

- ☒ A. Headache
☒ B. Diuresis
☒ C. Increase in arterial pressure
☒ D. Constipation
☒ E. Dry mouth

33. Which of the following opioid analgesics has the longest half-life when administered chronically?

- ☒ A. Hydromorphone
☒ B. Methadone
☒ C. Oxycodone
☒ D. Fentanyl
☒ E. Butorphanol

34. Which of the following agents has been shown to cause neuronal serotonin depletion and neurotoxicity?

- ☒ A. Lysergic acid diethylamide
☒ B. Cocaine
☒ C. Methylene-dioxy-methamphetamine (MDMA)
☒ D. Ketamine
☒ E. Nitrous oxide

35. Anandamide is an endogenous ligand at which of the following receptors?

- ☒ A. Delta opioid
☒ B. Mu opioid
☒ C. Cannabinoid
☒ D. GABA
☒ E. Kappa opioid

36. Which of the following is a proton pump inhibitor that is combined with antimicrobial agents in the treatment of peptic ulcer disease?

- A. Simethicone
- ☒ B. Famotidine
- C. Diphenhydramine
- D. Bismuth subsalicylate
- E. Lansoprazole

37. You complete a dental procedure on a six-year-old boy, and give instructions to rinse his mouth with one teaspoonful of a medication mixed in a glass of water three times a day for seven days. What is the total amount of medication used over this period?

- A. 52.5 mL
- ☒ B. 105 mL
- C. 210 mL
- D. 315 mL
- E. 630 mL

$$\begin{array}{r} 5 \text{ mL} \\ 3 \\ \hline 315 \text{ mL/day} \\ \times 7 \\ \hline 105 \end{array}$$

38. While still in the dental chair subsequent to a stressful procedure, your patient has a cardiovascular emergency. You reach for a bottle which is labeled: Epinephrine, 1:1000 and administer 0.3 mL to your patient. How much epinephrine did you administer?

- A. 0.03 mg
- ☒ B. 0.3 mg
- C. 3 mg
- D. 0.03 g
- E. 0.3 g

39. Which of the following would LEAST likely result from acetazolamide therapy?

- A. Development of hyperkalemia
- ☒ B. Formation of alkaline urine
- C. Usefulness in treatment of glaucoma
- D. Inhibition of carbonic anhydrase
- E. Development of metabolic acidosis

decreases
CA activity

A

loop diuretic

40. In attempting to choose the most appropriate drug for a hypertensive patient, the prescriber selected a drug that caused hypokalemia, hyperglycemia, hyperuricemia and hypercalcemia. Chronic therapy caused an increase in plasma triglycerides. The patient was most likely taking

A. Triamterene

B. Theophylline

C. Hydrochlorothiazide

D. Furosemide

E. Mannitol

$\uparrow \text{Na}^+ \text{Cl}^- \text{K}^+ \text{HCO}_3^-$

hyp
hypocalcemia

41. Which of the following would LEAST characterize xanthine actions in humans?

A. Myocardial stimulation

B. Bronchodilation

C. Central nervous system stimulation

D. Decrease of cerebral vascular resistance

E. Inhibition of proximal tubular reabsorption of sodium

42. Which of the following drugs is most likely to reduce gastric acid secretion in a patient with heartburn?

A. Diphenhydramine

B. Loratadine

C. Cimetidine

D. Fexofenadine

E. Theophylline

43. Which of the following drugs exerts its antidiarrheal action by blocking muscarinic receptors?

A. Codeine

B. Loperamide

C. Morphine

D. Diphenoxylate

E. Atropine

44. Which of the following agents has the most effective antidiarrheal action?

A. Lactulose

B. Loperamide

C. Cascara sagrada

D. Kaolin

E. Bismuth subcarbonate

45. Acetaminophen has been used as a safe and effective analgesic/antipyretic agent for over 80 years. However, the number of self-poisonings associated with acetaminophen has grown alarmingly in recent years because it may be purchased without a prescription. The primary toxicity leading to death from an acetaminophen overdose is

- A. Interstitial nephritis
- B. Pancytopenia
- C. Hepatocellular necrosis
- D. Myocarditis
- E. Hemolytic anemia

46. Acetaminophen differs from aspirin in that

- A. It does not produce analgesia
- B. It does not have a significant anti-inflammatory effect
- C. It does not produce antipyresis
- D. It does not get absorbed from the GI tract
- E. It does not cross the blood brain barrier

47. Which of the following agents has the LEAST effect on gastric mucosal prostaglandins?

- A. Aspirin - *decreases pH*
- B. Indomethacin
- C. Celecoxib *COX 2 inhibitor*
- D. Ketorolac
- E. Ibuprofen

48. Which of the following is a cardio-selective beta adrenergic receptor blocker with antihypertensive action?

- A. Clonidine
- B. Methyldopa
- C. Verapamil
- D. Propranolol β_1, β_2
- E. Atenolol

Atenolol

Questions 49 and 50:

For each of the numbered statements, select the single most appropriate lettered drug.
You may use each letter once or not at all.

- A. Enalapril
- B. Sodium ~~nitroprusside~~
- C. Terazosin
- D. Hydro~~chlor~~thiazide
- E. Verapamil *class I A*

C 49. Alpha - adrenergic receptor blockade *C*

B 50. Powerful vasodilator for emergency use *B*

END OF EXAM