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**DENTAL PHARMACOLOGY
FINAL EXAM**

April 15, 2005

You have TWO (2) hours and 30 minutes to complete this examination. The examination contains 100 questions, each worth 1 point.

Answer all questions on the computer sheet provided; use a soft lead pencil. Be sure that you have correctly identified your answer sheet by PRINTING your name and social security number and correctly filling in the grid spaces. Please turn in your answer sheet at the end of the exam. An answer key and grades will be posted on Blackboard.

This examination is being administered under the Honor Code of Temple University Dental School.

Questions 1 - 92: Select the single, most appropriate answer.

1. A drug when injected intravenously causes vasodilation, ^{↓HR contraction} bradycardia, miosis, salivation, and increased gastrointestinal tract motility. The drug is most likely to be

- A. A ganglionic blocking agent
- ☒ B. A muscarinic receptor agonist
- C. A muscarinic receptor antagonist
- D. An alpha-adrenergic receptor agonist
- E. An alpha-adrenergic receptor antagonist

2. Which of the following molecules directly releases calcium from intracellular stores into the cytoplasm when activated?

- ☒ A. Muscarinic receptor
- B. ~~Gαq~~ receptor
- ☒ C. Inositol-1,4,5-P₃ (IP₃) receptor
- D. Nitric oxide receptor
- E. Nicotinic receptor

3. In addition to blocking sodium channels, which antiarrhythmic drug acts on potassium channels to prolong the action potential?

- A. Flecainide
- ☒ B. Lidocaine
- ☒ C. Procainamide
- D. Verapamil
- E. Propranolol

4. A drug that is used to inhibit cholesterol synthesis:

- ☒ A. Pravastatin
- B. Colestipol
- C. Gemfibrozil
- D. Warfarin
- E. Niacin

5. Which of the following is the drug of choice for treating an acute anginal attack?

- A. Atenolol
- ☒ B. Nitroglycerin
- C. Nifedipine
- D. Diltiazem
- E. Propranolol

6. You are treating a kidney transplant patient and learn that he is currently receiving potent immunosuppressive drug therapy to prevent organ rejection. One of the drugs that your patient is receiving is azathioprine. This drug exhibits which of the following actions?

- A. Is well absorbed from the gastrointestinal tract and is a non-cytotoxic agent
- ☒ B. Selectively blocks IL-2 receptor function by T cells
- C. Is most effective when used in combination with levamisole
- ☒ D. Is frequently used in combination with prednisone for kidney transplant patients
- E. Selectively blocks IL-2 production by antigen-presenting cells

7. Parkinsonism is best treated by

- A. Increasing acetylcholine levels in the central nervous system
- B. Increasing acetylcholine levels in the plasma
- ☒ C. Increasing dopamine levels in the central nervous system
- D. Increasing dopamine decarboxylase activity in the plasma
- E. Both decreasing dopamine and increasing acetylcholine levels in the central nervous system

8. Ethanol, in acute or chronic use, can affect the cardiovascular system in different ways. Ethanol causes all of the following EXCEPT:

- A. Cutaneous vasodilatation
- B. Intracellular lesions of the myocardium
- ☒ C. Increased levels of high density lipoproteins (HDLs)
- D. Inhibition of platelet aggregation
- ☒ E. Increased risk of cerebral stroke

9. Both the benzodiazepines and the barbiturates are most correctly prescribed as

- A. Skeletal muscle relaxants
- B. Antipsychotics
- ☒ C. Antiepileptic agents
- D. Antidepressant agents
- E. Antianxiety agents

10. Which one of the following statements about cocaine is true?

- A. Cocaine is an antagonist at dopamine autoreceptors
- B. Cocaine HCl is more addictive than crack cocaine because higher doses can be taken intranasally
- ☒ C. Crack cocaine is more addictive than cocaine HCl because it is absorbed faster
- D. Chronic use of cocaine does not lead to psychological dependence
- E. There is tolerance to the anxiogenic effects of cocaine

11. Which one of the following drugs has both opioid receptor agonist and antagonist properties?

- Morphine*
- A. ~~Tramadol~~
 - ☒ B. Nalbuphine
 - C. ~~Naltrexone~~
 - D. ~~Meperidine~~
 - E. ~~Dihydrocodeine~~

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

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

13. Penicillin V is used orally in dentistry in preference to penicillin G because:

- Stable*
- A. It is less toxic
 - ☒ B. It is more stable to stomach acid
 - C. It is intrinsically more effective
 - D. ~~It tastes better~~
 - E. ~~It is bacteriostatic~~

14. Which of the following antibiotic combinations is indicated for treatment of Pneumocystis carinii pneumonia?

- E*
- A. Rifampin + isoniazid
 - B. Rifampin + erythromycin
 - C. Penicillin + aminoglycoside
 - D. Penicillin + tetracycline
 - ☒ E. Trimethoprim + sulfamethoxazole

15. Which one of the following antibiotics is most likely to interact with theophylline to cause seizures?

- B*
- A. Amoxicillin
 - ☒ B. Ciprofloxacin
 - C. ~~Vancomycin~~
 - D. ~~Clindamycin~~
 - E. ~~Tetracycline~~

16. Which of the following drugs is most useful to cure enterocolitis (bloody diarrhea) caused by *Clostridium difficile*?

- A. Erythromycin
B. Clindamycin
C. Gentamicin
D. Tetracycline
E. Vancomycin

17. All of the following statements about erythromycin are true EXCEPT:

- A. It is a macrolide antibiotic
B. It is bacteriostatic
C. It can be used to treat Mycoplasma infections
D. It is excreted unchanged in the urine
E. It is useful in penicillin-sensitive patients

18. Isoniazid acts to kill *Mycobacterium tuberculosis* by which one of the following mechanisms?

- A. Interfering with pyridoxine-dependent reactions
B. Interfering with bacterial cell-wall synthesis
C. Inhibiting DNA-dependent RNA polymerase
D. Altering membrane permeability
E. Inhibiting 30S ribosome function

19. Estrogen replacement therapy produces an increased risk of all of the following EXCEPT:

- A. Breast cancer
B. Osteoporosis
C. Thromboemboli
D. Migraine headaches
E. Hyperglycemia

20. Treatment of prostate cancer is most likely to include

- A. Raloxifene
B. Mifepristone
C. Mestranol + levonorgestrel
D. Tamoxifen + exesmestane
E. Leuprolide + flutamide

21. Acetylcholine produces all of the following effects **EXCEPT**:

- B
- A. Reduction in heart rate *↓ HR ACh*
 - ☒ B. Bronchodilation
 - C. Increase in gastrointestinal motility
 - D. Miosis
 - E. Skeletal muscle contraction

22. Which of the following drugs, used in the treatment of congestive heart failure, increases cardiac contractility by inhibiting sodium-potassium ATPase?

- C
- A. Hydrochlorothiazide
 - B. Dobutamine
 - ☒ C. Digoxin
 - D. Carvedilol
 - E. Spironolactone

23. All of the following statements about pharmacokinetic properties of drugs are true **EXCEPT**:

- E
- A. A drug administered by oral administration is most susceptible to first-pass liver metabolism
 - B. Binding to plasma proteins reduces the rate of distribution of a drug
 - C. Nitrous oxide is excreted unchanged by the lungs
 - D. Free drug in the plasma, but not protein-bound drug, is susceptible to glomerular filtration
 - ☒ E. Acidifying the urine increases the renal excretion of a weak acid

24. All of the following are true about aspirin **EXCEPT**:

- D
- A. Is an irreversible inhibitor of cyclooxygenase 1 and 2
 - B. Is analgesic and antipyretic
 - C. Is anti-inflammatory
 - ☒ D. Increases the risk of heart attack and stroke
 - E. Overdose is treated with sodium bicarbonate

25. A patient is prescribed terbinafine by his podiatrist. The doctor requires lab work during therapy. He is concerned about

- C
- A. Metabolic acidosis
 - B. Anemia
 - ☒ C. Hepatotoxicity
 - D. Hyperglycemia
 - E. Hypokalemia
- fungal*

26. Most useful topically as a mouthwash for treatment of a fungal infection of the mouth and gums:

- A. Amantadine
- B. Acyclovir
- C. Griseofulvin
- ☒ D. Nystatin
- E. Flucytosine

27. Which of the following antimicrobial agents is most likely to inhibit cytochrome P450, and reduce testosterone synthesis?

- ☒ A. Ketoconazole
- B. Zidovudine
- C. Tetracycline
- ~~D. Amphotericin B~~
- E. Rifampin

28. A patient is prescribed ganciclovir for a cytomegaloviral infection. The most likely adverse reaction profile includes

- A. Metabolic acidosis
- ☒ B. Anemia and renal impairment
- C. Hypertension and tachycardia
- D. CNS depression
- E. Cirrhosis of the liver

29. All of the following statements about zidovudine are true EXCEPT:

- A. Effective in the treatment of HIV
- ☒ B. Effective in the treatment of Hepatitis B
- C. Lamivudine enhances its effectiveness
- D. Is a reverse transcriptase inhibitor
- E. Produces anemia

30. An overdose of levothyroxine is most likely to produce

- A. Hypoglycemia
- B. Hyperlipidemia
- C. Memory loss
- ☒ D. Tachycardia
- E. Weight gain

31. Which of the following best describes the mechanism of triiodothyronine?

- Thyroid*
T3
- A. ~~Stimulates adenylyl cyclase~~
 - B. ~~Inhibits adenylyl cyclase~~
 - C. Binds to an intracellular receptor to enhance protein synthesis
 - D. ~~Stimulates a tyrosine kinase-linked receptor~~
 - E. ~~Stimulates phospholipase C~~

32. All of the following are true about propylthiouracil EXCEPT:

- hyperthyroid*
- A. Reduces the synthesis of thyroid hormones
 - B. Reduces the deiodination of thyroxine
 - C. Rapidly reverses hyperthyroidism (within 2 days)
 - D. Causes gastrointestinal upset and rash
 - E. May rarely cause agranulocytosis

33. Which of the following drugs binds to hydroxyapatite to reduce bone turnover in a patient with Paget's disease?

- B*
- A. Methimazole
 - B. Etidronate
 - C. ~~Tolbutamide~~
 - D. ~~Metformin~~
 - E. Parathyroid hormone

34. Which of the following best describes the mechanism of insulin?

- D*
- A. ~~Stimulates adenylyl cyclase~~
 - B. ~~Inhibits adenylyl cyclase~~
 - C. Increases calcium influx
 - D. Stimulates a tyrosine kinase-linked receptor
 - E. ~~Binds to intracellular receptors to enhance protein synthesis~~

35. A partial estrogen receptor agonist in the pituitary; used to induce ovulation:

- D*
- A. Ethinyl estradiol
 - B. Mestranol
 - C. Levonorgestrel
 - D. Clomiphene
 - E. Flutamide
- Plasma*

36. A 20-year-old female is being treated with insulin for type-1 diabetes mellitus. All of the following conditions will require an increase in the dosage of insulin EXCEPT:

- A. Hyperthyroidism
- B. Treatment with an oral contraceptive
- C. A reduction in physical exercise
- D. Stress
- E. Treatment with metformin

37. Which of the following drugs has the most effective antidiarrheal action?

- A. Atropine
- B. Kaolin
- C. Loperamide
- D. Bismuth subcarbonate
- E. Activated charcoal

38. The mu opioid receptors in the gastrointestinal tract are at least partly responsible for the antidiarrheal action of all of the following EXCEPT:

- A. Atropine
 - B. Codeine
 - C. Diphenoxylate
 - D. Loperamide
 - E. Morphine
- NO CONTRACTION*
CONTRACTING

39. All of the following are correctly paired EXCEPT:

- A. Morphine – decreases propulsive movement of intestinal smooth muscle
- B. Enterotoxigenic E. coli – common cause of traveler's diarrhea
- C. Mineral oil – laxative effect depends on its hydrolysis subsequent to absorption
- D. Lactulose – osmotic laxative; may reduce levels of blood ammonia
- E. Magnesium citrate – saline laxative as well as a non-systemic antacid

40. Which of the following is the most important pharmacokinetic parameter that determines how a drug can affect the fetus of a pregnant woman?

- A. Lipid solubility
 - B. Binding affinity
 - C. Binding capacity
 - D. G protein coupling
 - E. Renal excretion
- BTS*

41. An elderly man (80-yrs-old) is taking aspirin daily for arthritis. He has developed symptoms associated with NSAID-induced gastrointestinal bleeding. The side effects associated with NSAIDs are most likely to occur in geriatric patients because of:

- A. Reduced lean body weight in the elderly
- B. Reduced plasma volume
- C. Decreased total body water
- D. Decreased serum albumin concentration
- ☒ E. Decreased renal function

42. Which of the following would LEAST characterize alcohols?

- ☒ A. Are rapidly-acting
- ☒ B. Are bactericidal
- ☒ C. Denature protein
- ☒ D. Are effective antivirals
- ☒ E. Are highly volatile

43. Mechanisms of action of local anti-infectives may include:

- ☒ A. Denaturation of cellular protein
- ☒ B. Osmotic disruption of the cell
- ☒ C. Interference with a metabolic process
- ☒ D. All of the above
- ☒ E. None of the above

44. Each of the following antiseptics/disinfectants is correctly matched with its accompanying characteristic EXCEPT:

- ☒ A. Alcohols – Most widely-used local anti-infectives
- ☒ B. Eugenol – Analgesic action
- ☒ C. Hexachlorophene – Surgical scrub
- ☒ D. Lysol – A 50% solution of cresol
- ☒ E. Guaiacol – analgesic action; active ingredient in oil of cloves

45. Proposed mechanisms of xanthine action would LEAST likely include

- A. Translocation of intracellular calcium
- B. Blockade of adenosine receptors
- ☒ C. Increasing the conversion of cyclic AMP to 5' AMP
- D. Phosphodiesterase inhibition
- ☒ E. Increasing accumulation of cyclic AMP

46. Which of the following drugs has the greatest β_2 -adrenergic receptor selectivity?

- A. Albuterol
B. Ephedrine
C. Epinephrine
D. Isoproterenol
E. Norepinephrine

47. Problems which develop as a result of therapy with loop diuretics would LEAST likely include:

- A. Hyperglycemia
B. Hyperkalemia
C. Hyperuricemia
D. Hypocalcemia
E. Hyponatremia

48. All of the following statements are true for the actions of prazosin EXCEPT:

- A. Blocks the pressor response to norepinephrine
B. Acts as a sympathomimetic
C. Selective for α_1 adrenergic receptors
D. Produces only a modest reflex tachycardia
E. Lowers systemic blood pressure

49. Dietary control is advisable to avoid hypertensive crises when taking which one of the following centrally-acting drugs?

- A. Desipramine
B. Flumazenil
C. Chlorpromazine
D. Amitriptyline
E. Isocarboxazid

50. Tolerance to the anticonvulsant effect of which drug is most likely to occur?

- A. Phenytoin
B. Carbamazepine
C. Diazepam
D. Clonazepam
E. Valproic acid

51. Diazepam is suitable for all of the following indications **EXCEPT**:

- ☒ A. Acute alcohol withdrawal *Disulfiram*
- ☐ B. Oral sedation in dentistry
- ☐ C. Generalized anxiety disorder
- ☒ D. Obsessive-compulsive disorder
- ☐ E. Musculo-skeletal disorders

52. Many antacids are marketed as combinations of magnesium and aluminum hydroxides because:

- ☐ A. Magnesium minimizes the absorption of aluminum
- ☒ B. The laxative effect of magnesium is counteracted by the constipating effect of aluminum
- ☐ C. The "acid rebound" induced by aluminum hydroxide can be minimized
- ☐ D. Aluminum hydroxide alone tastes very bad
- ☐ E. Magnesium hydroxide alone neutralizes gastric acid too slowly

53. Which of the following drugs aids ulcer healing by stimulating secretion of mucus by the gastric mucosa?

- ☐ A. Sucralfate
- ☐ B. Ranitidine
- ☐ C. Esomeprazole
- ☒ D. Misoprostol
- ☐ E. Bismuth subsalicylate

54. A selective serotonin reuptake inhibitor, used as an antidepressant:

- ☐ A. ~~Lithium carbonate~~
- ☐ B. ~~Oxazepam~~
- ☐ C. ~~Dantrolene~~ *SORT*
- ☐ D. ~~Dronabinol~~
- ☒ E. Paroxetine

55. Choose the correct statement about histamine and antihistaminics.

- ☒ A. Histamine-induced vasodilatation is primarily due to a rapid vascular smooth muscle relaxation via H_2 receptor-mediated increased cellular cAMP
- ☒ B. Diphenhydramine has ~~anti~~-androgenic activity
- ☒ C. Famotidine cures the primary cause of most gastric ulcer disease
- ☐ D. Cellular signal transduction of H_1 receptor activation is mediated by increased cAMP
- ☒ E. Second generation H_1 receptor antagonists such as loratadine are less sedating than first generation agents such as diphenhydramine

56. Deficiency of which vitamin results in scurvy?

- A. Vitamin A
- B. Vitamin B
- ☒ C. Vitamin C
- D. Vitamin D
- E. Vitamin E

57. Which of the following vitamins bind to a cytosolic receptor to increase protein synthesis?

- A →
- ☒ A. Vitamin A and D
 - ☒ B. Vitamin B₆ and B₁₂
 - C. Vitamin C and K
 - D. Vitamin E and M
 - E. Vitamin F and G
- ADCK Fat

58. An excess of which vitamin causes imbalances in calcium metabolism, particularly dangerous for patients receiving digoxin?

- D
- A. Vitamin A
 - B. Vitamin B
 - C. Vitamin C
 - ☒ D. Vitamin D
 - E. Vitamin E

59. Which of the following drugs induces DNA damage during cancer chemotherapy?

- E
- A. 5-Fluorouracil
 - B. Methotrexate
 - C. Vincristine
 - ☒ D. 6-Thioguanine
 - ☒ E. Cyclophosphamide

60. A patient with a tumor cell burden of 10^{10} cells is treated by cancer chemotherapy. After the initial treatment, the number of tumor cells remaining is

- E
- A. 0
 - B. 10^2
 - C. 10^4
 - D. 10^6
 - ☒ E. 10^8
- 10^8

61. Which of the following is most likely to occur during treatment with 5-fluorouracil?

- ☒ A. Inhibition of dihydrofolate reductase *antimetabolite*
☐ B. Use of allopurinol as supportive therapy
☐ C. Inhibition of dTMP synthesis
☐ D. Exhibition of acute toxicity
☐ E. Administration as a deoxynucleotide

62. Which of the following toxic side effects is most associated with the use of doxorubicin?

- ☐ A. Endometriosis
☒ B. Cardiotoxicity
☐ C. Hepatotoxicity
☐ D. Bone marrow suppression
☐ E. Hyperglycemia

63. Orthostatic hypotension is most associated with which class of antihypertensive drugs?

- ☒ A. Alpha-1-adrenergic receptor blockers
☐ B. Angiotensin receptor antagonists
☐ C. Angiotensin-converting enzyme inhibitors
☐ D. Thiazide diuretics
☐ E. Beta-adrenergic receptor blockers

64. Which of the following best describes the mechanism of parathyroid hormone?

- ☐ A. Stimulates a tyrosine kinase-linked receptor
☐ B. Binds to intracellular receptors to enhance protein synthesis
☒ C. Increases cyclic AMP *PTH 1-34*
☐ D. Inhibits adenyl cyclase
☐ E. Stimulates phospholipase C *PLC - IP3*

65. Which of the following drugs requires biotransformation to make it a platelet ADP receptor antagonist?

- ☐ A. Heparin
☒ B. Clopidogrel *antiaggregant*
☐ C. Aspirin
☐ D. Warfarin
☐ E. ε-Aminocaproic acid (Amicar)

66. You are involved in a clinical trial to assess the utility of a novel agent to prevent dental plaque. You discover that this compound, AFF445, is a potent activator of calcineurin. AFF445 is most likely to interfere with the action of which of the following immunosuppressive drugs?

- B
- A. Alpha interferon
 - ☒ B. Cyclosporine
 - C. Levamisole
 - D. Prednisone
 - E. Azathioprine

67. A number of immunosuppressive drugs function as cytotoxic agents. Which of the following statements correctly describes the immunosuppressive capacity of these drugs?

- C
- A. Cyclophosphamide is metabolized to mercaptopurine and destroys proliferating lymphocytes
 - B. Azathioprine interferes with folic acid metabolism and blocks the growth of plasma cells
 - ☒ C. Cyclophosphamide is an alkylating agent which destroys expanding B and T cells
 - D. Rapamycin blocks nucleic acid synthesis and is cytotoxic for B cells
 - E. Tacrolimus blocks folic acid synthesis and is selectively cytotoxic for T cells

68. Extra care should be used when administering morphine to patients with all of the following medical conditions EXCEPT:

- D
- A. Head injury
 - B. Severe liver disease
 - C. Kidney dysfunction
 - ☒ D. Heart disease
 - E. Compromised respiratory function

69. All of the following statements about antimicrobial drugs are true EXCEPT:

- A
- ☒ A. Penicillins are only active against bacteria that are no longer dividing
 - B. Isoniazid is active against intracellular bacteria
 - C. Tetracyclines are bacteriostatic
 - D. Aminoglycosides are mainly active against gram-negative bacteria
 - E. Erythromycin is mainly active against gram-positive bacteria
- 201-111-1111
111-111-1111

70. Which of the following antibiotic combinations is most likely to be antagonistic?

- ☒ A. Ampicillin + streptomycin
- ☐ B. Sulfamethoxazole + trimethoprim
- ☐ C. Ampicillin + tetracycline
- ☐ D. Ampicillin + clavulanic acid
- ☐ E. Isoniazid + rifampin

71. All of the following are indications for the listed antibiotic EXCEPT:

- ☒ A. First generation cephalosporins are useful in treating gram negative meningitis
- ☐ B. Chloramphenicol is indicated for Salmonella infections
- ☐ C. Ampicillin is a useful drug in treating dental infections
- ☐ D. Tetracyclines can be used to treat Rickettsial infections
- ☐ E. Ciprofloxacin is useful in treating bone infections

72. Which of the following aminoglycosides is most resistant to inactivation by aminoglycoside-inactivating enzymes?

- ☐ A. Streptomycin
- ☐ B. Neomycin
- ☐ C. Gentamicin
- ☒ D. Amikacin
- ☐ E. Tobramycin

73. Which of the following drugs is an estrogen receptor antagonist in breast tissue, and is most useful in therapy of estrogen-dependent breast cancer?

- ☐ A. Finasteride
- ☐ B. Mestranol
- ☐ C. Diethylstilbestrol
- ☒ D. Tamoxifen
- ☐ E. Danazol

74. A 5-year-old boy accidentally ingests a plant containing atropine. His symptoms are LEAST likely to include

- ☒ A. Dry mouth
- ☒ B. Dilated pupils and blurred vision
- ☒ C. Constipation
- ☐ D. Fever and confusion
- ☐ E. Hypertension and bradycardia

MAD
blind

Atropine

75. An overdose of acetaminophen is most likely to produce

- A. Hypertension and tachycardia
- ☒ B. Delayed hepatotoxicity
- C. CNS depression leading to coma and death
- D. Metabolic acidosis
- E. Renal failure

76. Which of the following drugs acts by inhibiting ergosterol synthesis in sensitive fungi?

- ☒ A. Amphotericin B
- B. Griseofulvin
- ☒ C. Itraconazole
- D. Valacyclovir
- E. Flucytosine

77. A neuraminidase inhibitor, useful in the treatment of influenza A and B:

- A. Zidovudine
 - B. Foscarnet
 - C. Ganciclovir
 - ☒ D. Oseltamir
 - E. Acyclovir
- Handwritten notes: Virus, A & B, 77*

78. Most effective for chronic treatment of hepatitis C:

- A. Lamivudine
- B. Nelfinavir
- ☒ C. Amantadine
- D. Ganciclovir + zidovudine
- ☒ E. Interferon + ribavirin

79. A 25-year-old woman is diagnosed with hypothyroidism. Treatment should include

- A. Methimazole
- B. Parathyroid hormone
- C. Radioactive iodine (I-131)
- D. Potassium
- ☒ E. Levothyroxine

80. A 50-year-old female with hyperglycemia is diagnosed with type-2 diabetes mellitus. Which of the following drugs is most effective by oral administration?

- B
- A. NPH insulin
 - ☒ B. Glyburide
 - C. Propylthiouracil
 - D. Levothyroxine
 - E. Mestranol

81. Which of the following best describes the mechanism of tolbutamide?

- C
- ☒ A. Inhibits the synthesis of thyroid hormones
 - B. Blocks estrogen receptors
 - ☒ C. Blocks potassium channels to stimulate insulin release
 - D. Inhibits alpha-glucosidase
 - E. Directly inhibits gluconeogenesis

82. Laxative action; rapid onset of effect; inactive prior to its hydrolysis in the intestine:

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

83. Adverse effects of fluoride, in its role as an anticaries agent, would LEAST likely include:

- C
- A. Hyperreflexia
 - B. Nausea, vomiting, diarrhea
 - ☒ C. Cardiovascular stimulation
 - D. Hypocalcemia
 - E. Enamel fluorosis

84. Long term therapy of which drug is most likely to cause osteoporosis?

- A
- ☒ A. Prednisone
 - ☒ B. Estradiol
 - ☒ C. Alendronate
 - D. Calcitonin
 - E. Fluoride

85. Each of the following is correctly matched with its accompanying characteristic EXCEPT:

- A. Common soaps – weak surface-active agents
- B. Chlorhexidine – effective surgical scrub
- C. Iodophors – promote rapid release of iodine
- D. Hydrogen peroxide – weak antiseptic
- E. Parachlorophenol (1%) – root canal antiseptic

86. The major reason for adding triamterene to a hypertensive patient's daily hydrochlorothiazide therapy is to reduce the excretion of:

- A. Bicarbonate
- B. Calcium
- C. Chloride
- D. Potassium
- E. Sodium

87. Symptoms of the typical withdrawal syndrome in an individual physically dependent on heroin is LEAST likely to include

- A. Runny nose
- B. Mydriasis
- C. Constipation
- D. Gooseflesh
- E. Vomiting

88. Which of the following agents is most likely to cause systemic alkalosis when used orally as an antacid?

- A. Basic-aluminum-carbonate
- B. Magnesium hydroxide
- C. Calcium carbonate
- D. Aluminum hydroxide
- E. Sodium bicarbonate

89. Which of the following antiepileptic drugs is used against absence seizures when ethosuximide is not satisfactory?

- A. Fosphenytoin
- B. Valproic acid
- C. Phenobarbital
- D. Carbamazepine
- E. Gabapentin

90. All of the following statements regarding local anesthetics are true EXCEPT:

- B
- A. Bupivacaine acts on sodium channels to produce its pharmacological effects
 - ☒ B. Lidocaine is contraindicated in pregnant women
 - C. Procaine is metabolized to p-aminobenzoic acid which elicits allergic reactions in some patients
 - ☒ D. Local anesthetics are used for infiltration block of sympathetic fibers for evaluation of the role of these fibers in peripheral vasospasm
 - E. Benzocaine is a topical anesthetic

91. A diet consisting of primarily polished rice, resulting in a deficiency in Vitamin B₁ (thiamine), is most associated with

- D
- A. Scurvy
 - B. Pellagra
 - C. Pernicious anemia
 - ☒ D. Beriberi
 - E. Nodular cystic acne vulgaris

92. Which of the following drugs would inhibit DNA replication during cancer chemotherapy?

- A
- ☒ A. Cytarabine
 - B. Vincristine
 - ☒ C. Vinblastine
 - D. Tamoxifen
 - E. Allopurinol

Match Type Questions (93 – 100)

For Questions 93 – 95:

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

- A. Iron
- B. Naloxone
- C. Glucagon
- D. Atropine + pralidoxime
- E. N-Acetylcysteine

☒ E 93. The antidote used to prevent or limit the toxicity of acetaminophen overdose

☒ D 94. Reverses accidental poisonings with organophosphate cholinesterase inhibitors

☒ B 95. The drug of choice to reverse the effects of an opioid overdose, e.g. heroin

For Questions 96 – 98:

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

- A. Doxycycline
- B. Clarithromycin
- C. Ticarcillin
- D. Fluconazole
- E. Valacyclovir

E 96. Genital herpes E

D 97. Oropharyngeal candidiasis in an immunocompromised patient D

C 98. Pseudomonas B

For Questions 99 and 100:

For each of the numbered adverse reactions, select the lettered drug that is most likely to cause that reaction. You may use each letter once or not at all.

- A. ~~Tetracycline~~
- B. Amphotericin B
- C. Amoxicillin
- D. Terbinafine
- E. ~~Isoniazid~~

A 99. Permanent staining of teeth, when given to a child A

B 100. Renal impairment D