

Corrected

Name ~~XXXXXXXXXX~~

Please Print

**DENTAL PHARMACOLOGY
FINAL EXAM**

April 18, 2003

1
2 hour
M.C.E.

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 exam booklet and answer sheet at the end of the exam. The exam booklet will be returned to you.

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

Ask about Tablapon #38

Questions 1 – 89: Select the single, most appropriate answer.

1. All of the following are pharmacological effects of aspirin EXCEPT:

- A. Reduction of fever T
- B. Reduction of prostaglandin synthesis in inflamed tissues T
- ☒ C. Reduction of bleeding tendency False
- D. Tinnitus and vertigo T
- E. Gastrointestinal ulceration in chronic use T

2. Selective cyclooxygenase (COX-2) inhibitors

- ☒ A. May have a reduced risk of gastrointestinal bleeding compared to other nonsteroidal antiinflammatory drugs
- B. Have antiinflammatory effects similar to acetaminophen
- C. Like aspirin, are irreversible inhibitors of the COX-2 enzyme
- D. Interfere with the homeostatic, cytoprotective function of prostaglandins
- E. Include ibuprofen and naproxen

3. Pregnancy is the predominant condition requiring an increase in the daily intake of which vitamin, to prevent neural tube defects?

- A. Vitamin B-1 (Thiamine)
- B. Vitamin B-3 (Niacin)
- C. Vitamin A (Retinol)
- ☒ D. Vitamin M (Folic Acid)
- E. Vitamin C (Ascorbic Acid)

4. All of the following statements about antibiotics are true EXCEPT:

- ☒ A. Tetracycline is useful in treating bone infections False
- B. Clindamycin may give rise to pseudomembranous colitis T
- C. Vancomycin can be used to treat pseudomembranous colitis T
- D. Streptomycin can give rise to auditory problems T
- E. Chloramphenicol can cause aplastic anemia T

5. All of the following statements about penicillins are true EXCEPT:

- ☒ A. Autolytic enzymes are involved in the antibiotic effect of penicillins T
- B. Benzathine penicillin G is a repository form of penicillin T
- ☒ C. Penicillins are useful in treatment of Legionnaire's disease - chlo
- ☒ D. Penicillins are excreted unchanged in the urine T
- ☒ E. Penicillins can cause rash and other allergic reactions T

Gram.
inhibits protein
synthesis

6. A second-year dental student is playing basketball when he steps on a nail, which penetrates his foot. He soon develops a painful gram-negative *Pseudomonas aeruginosa* bone infection. With the Pharmacology final just weeks away he asks his physician to prescribe an antibiotic which is orally available, so that he can get to the library to study. Which of the following drugs did he ask for?

A. Cefaclor
 B. Clindamycin
 C. Gentamicin
 D. Ciprofloxacin
 E. Doxycycline

Quinolone
all like streptomycin
Aminogly
Quinolone
 C-
 6-4

7. All of the following antibiotics act through inhibition of bacterial protein synthesis EXCEPT:

A. Streptomycin - *inhibit protein synthesis*
 B. Tetracycline
 C. Polymyxin
 D. Clindamycin *inhibits protein synthesis*
 E. Erythromycin

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

A. Rifampin + Isoniazid - TB
 B. Rifampin + Erythromycin
 C. Penicillin + Aminoglycoside
 D. Penicillin + Tetracycline
 E. Trimethoprim + Sulfamethoxazole - *Tx of *Pneumocystis carinii* pneumonia*

9. Which of the following statements best describes the mechanism of action of warfarin?

inhibits coag. factors
 A. It inhibits the final step in the synthesis of specific coagulation factors
 B. It inhibits platelet aggregation *aspirin*
 C. It inhibits thrombin
 D. It binds the calcium ion-co factor needed in some steps of coagulation
 E. It increases the activity of antithrombin-III

10. The following statements are true of nitrous oxide EXCEPT:

- A. Can cause hypoxia due to wash-out of oxygen T
- B. Can be abused T
- C. Has analgesic properties T
- D. Is a good agent for relaxation of skeletal muscle *False. Doesn't do skeletal muscle*
- E. Can be used in combination with local anesthetics to reduce the patient's anxiety T

11. Which statement best describes halothane?

- A. Is totally excreted unchanged and thus is not hepatotoxic *False. Hepatotoxic*
- B. Is a relatively weak agent, not useful for stage three anesthesia *False*
- C. Is a depressant of respiration *True*
- D. Is administered intravenously *False Inhalation*
- E. Its pharmacokinetics are best explained by redistribution to adipose tissue *False*

12. Which of the following antiarrhythmic drugs best fits the following description: a sodium channel blocker that has moderate antimuscarinic activity, moderately blunts conduction and moderately prolongs the QT interval?

- A. Esmolol *f*
- B. Lidocaine *Na⁺ channel blocker*
- C. Verapamil
- D. Flecainide
- E. Quinidine *prolongs QT interval; moderate antimuscarinic activity*

13. All of the following effects are associated with acute or chronic alcohol ingestion EXCEPT:

- ✓ A. Lesions of the myocardium *F*
- ✓ B. Decrease in high density lipoproteins *F*
- ✓ C. Cutaneous vasodilation *T*
- D. Increased fat production in the liver
- E. Inhibition of testosterone

14. A short-acting benzodiazepine that is most useful in the treatment of insomnia:

- A. Triazolam *insomnia*
- B. Chlordiazepoxide
- C. Oxazepam
- D. Nitrazepam
- E. Diazepam

15. The maximum effect of a drug, indicated by the height of its dose-response curve, is a measure of

A. Potency
B. Efficacy
C. Solubility
D. Half life
E. Degree of protein binding



16. Stimulation of which of the following receptors produces skeletal muscle contraction?

A. Nicotinic ✓
B. Muscarinic - anticholinergic
C. Alpha-1 adrenergic
D. Beta-1 adrenergic
E. Dopaminergic

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

A. Weak bases are mostly absorbed from the small intestine ✓
B. An ionized drug readily crosses the blood brain barrier *Nonionized drug crosses the blood brain barrier*
C. A small percentage of ethanol is excreted unchanged in the exhaled air ✓
D. Increasing the pH of the urine will increase the excretion of a weak acid ✓
E. A drug administered to a woman can cause effects in her nursing infant ✓

18. Which of the following drugs is most likely to produce miosis and stimulation of salivary secretions?

A. Epinephrine
B. Atropine - dry secretions
C. Pilocarpine
D. Phenylephrine
E. Diphenhydramine

19. All of the following are true about diphenhydramine EXCEPT:

A. Is an antagonist at histamine H-1 receptors ✓
B. Causes sedation ✓
C. May cause constipation ✓
D. Blocks muscarinic receptors
E. Is useful in the treatment of peptic ulcers

20. Which of the following drugs is most effective in the treatment of onychomycosis (toenail fungal infection)?

- A. Terbinafine
- B. Amphotericin B
- C. Tolnaftate - antifungal
- D. Nystatin
- E. Acyclovir

21. Which of the following antifungal agents is most associated with production of nephrotoxicity?

- A. Miconazole
- B. Amphotericin B → hepatotoxic hepatotoxic
- C. Tolnaftate
- D. Griseofulvin →
- E. Terbinafine

22. Each of the following drugs is matched to its therapeutic use EXCEPT:

- A. Acyclovir - Varicella zoster T
- B. Lamivudine - HIV T
- C. Ribavirin - Respiratory syncytial virus T
- D. Amantadine - Influenza A T
- E. Zidovudine - Hepatitis B - HIV T

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

- A. Zanamivir
- B. Trifluridine
- C. Ganciclovir
- D. Ribavirin T
- E. Lamivudine

Osetelamivir

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

- A. Is used in the treatment of hyperthyroidism T
- B. Reduces the synthesis of thyroid hormones T
- C. Blocks thyroid hormone receptors False
- D. May produce a maculopapular rash T
- E. Crosses the placenta and gets into breast milk T

25. Which of the following best describes the mechanism of action of levothyroxine?

↑ mRNA & protein synthesis

- A. Increases adenylyl cyclase activity
- B. Reduces adenylyl cyclase activity
- C. Opens sodium channels
- D. Increases mRNA and protein synthesis
- E. Increases tyrosine kinase activity

26. Which of the following drugs, used in the treatment of Paget's disease and osteoporosis, acts by binding to hydroxyapatite to reduce loss of calcium from bone?

- A. Parathyroid hormone
- B. Glyburide
- C. Methimazole
- D. Alendronate
- E. Rosiglitazone

binds HA to reduce loss of Ca from bone

27. Which of the following best describes the mechanism of action of calcitriol (1,25-dihydroxy D₃)?

- A. Increases adenylyl cyclase activity
- B. Increases phospholipase C activity
- C. Increases gene expression and protein synthesis
- D. Blocks calcium channels
- E. Reduces adenylyl cyclase activity

28. Chronic use as an antiinflammatory agent can cause osteoporosis and aseptic necrosis of the hip:

- A. Acetaminophen
- B. Ibuprofen
- C. Estradiol
- D. Calcitriol
- E. Prednisone

Antiinflammatory agent → can cause osteoporosis

29. Orally effective in the treatment of type II diabetes mellitus, by stimulating insulin secretion:

- A. Glipizide
- B. Metformin - needs insulin
- C. Rosiglitazone → @ 1272
- D. Levothyroxine
- E. Acarbose

stimulated insulin secretion

30. A 15-year-old boy is diagnosed with type I diabetes mellitus, and requires a once-daily medication. Which drug is most appropriate? *NPH-insulin*
- A. Glyburide
 - B. Metformin
 - ☒ C. NPH-insulin
 - D. Rosiglitazone
 - E. Regular insulin
31. An estrogen receptor antagonist in breast tissue; is used in the treatment of breast cancer:
- A. Ethinyl estradiol
 - B. Norethindrone
 - C. Fluoxymesterone
 - D. Leuprolide
 - ☒ E. Tamoxifen *antagonist in breast tissue*
32. An inhibitor of the reduction of testosterone to 5α -dihydrotestosterone, used to treat benign prostatic hyperplasia:
- A. Nandrolone
 - B. Levonorgestrel
 - ☒ C. Finasteride
 - D. Mestranol
 - E. Raloxifene
33. All of the following statements about caries activity are true EXCEPT:
- A. There is a direct relationship between consumption of refined carbohydrates and caries activity *T*
 - ☒ B. Cavitation does not exist with adherence to a program of good nutrition *False*
 - C. Watery diets result in negligible caries *T*
 - D. A monosaccharide is less cariogenic than a disaccharide *T*
 - E. In patients chronically fed by intubation, there is evidence of only negligible caries *T*
34. Signs of fluoride poisoning may include all of the following EXCEPT:
- A. Nausea
 - B. Vomiting
 - C. Diarrhea
 - D. Hyperreflexia
 - ☒ E. Cardiovascular stimulation *False*

35. Which one of the following would **LEAST** characterize alcohols?

- A. Rapidly-acting *T*
- B. Bactericidal *T*
- C. Denature proteins *T*
- ☒ D. Very effective against spores, viruses and fungi
- E. Highly volatile *T*

Not effective against spores

36. Basic mechanisms of action of local anti-infectives may include

- A. Osmotic disruption of the cell *T*
- B. Interference with metabolic processes *T*
- C. Denaturation of cellular protein *T*
- ☒ D. All of the above
- ~~E. None of the above~~

37. All of the following antiseptic/disinfectants are correctly paired with one or more characteristics **EXCEPT**:

- A. Hexachlorophene – surgical scrub; may be absorbed *T*
- ☒ B. Guaiacol – analgesic; active ingredient in oil of cloves
- C. Chlorhexidine – surgical scrub; a biguanide *T*
- D. Alcohols – most widely used local anti-infectives *T*
- E. Eugenol – analgesic action *T*

38. Following a dental procedure, a 65-year-old diabetic patient was instructed to use a tablespoonful of liquid medication diluted in a glass of water as an oral rinse twice daily for seven days. The total amount of liquid medication used was

- A. 35 mL
- B. 70 mL
- C. 140 mL
- ☒ D. 210 mL
- E. 280 mL

$$\begin{array}{r} 30 \\ \times 7 \\ \hline 210 \end{array}$$

$$\begin{array}{r} 214 \\ \times 5 \\ \hline 1070 \end{array}$$

$$\begin{array}{r} 14 \\ \times 30 \\ \hline 420 \end{array}$$

39. A centrally-acting, effective antitussive, classified as a non-opioid; no analgesic properties; may cause release of histamine:

- A. Hydromorphone
- ☒ B. Dextromethorphan
- C. Hydrocodone
- D. Benzonatate
- E. Ephedrine

non-opioid - may cause release of histamine; no analgesic

40. All of the following drugs have some bronchodilating action EXCEPT:

- A. Epinephrine
- B. Albuterol - bronchodilator
- ☒ C. Cromolyn
- D. Isoproterenol - bronchodilator
- E. Formoterol - bronchodilator

41. Which of the following has the most effective antidiarrheal action?

- A. Kaolin
- B. Bismuth subcarbonate
- ☒ C. Loperamide - antidiarrheal
- D. Lactulose
- E. Atropine

Loperamide

42. All of the following statements are true EXCEPT:

- ☒ A. Tetracaine is metabolized primarily by liver microsomal enzymes *False*
- B. Epinephrine in lidocaine preparations is used to reduce absorption of lidocaine into the blood stream *T*
- C. Seizures induced by local anesthetics can be treated with diazepam *T*
- D. Lidocaine has to penetrate neuronal membranes to exert its local anesthetic effects *T*
- E. Bupivacaine is more cardiotoxic than lidocaine *T*

Metabolized in blood?

43. Differences between morphine and methadone include which one of the following?

- ☒ A. Methadone is not an effective analgesic *→ opioid receptor agonist*
- B. Methadone causes mydriasis *NO MYDRIASIS*
- C. Methadone can produce physical dependence *T*
- D. Methadone does not produce euphoria
- E. Methadone has a longer half-life with chronic dosing *x*

Heroin dependency txt.

44. All of the following properties are shared by both amphetamine and cocaine EXCEPT:

- A. Are sympathomimetic *T*
- ☒ B. Have local anesthetic actions
- C. Have cardiovascular stimulatory properties *T*
- D. Cause depression upon withdrawal *T*
- E. Are euphoriogenic *T*

-vasoconstrictor

45. The best approach for cancer chemotherapy is

- A. The use of only cell phase non-specific drugs
- ☒ B. The use of combination chemotherapy after surgery or radiation
- C. The use of a single drug to kill tumor cells
- D. Treatment cessation after the disappearance of symptoms
- E. The killing of equal numbers of tumor cells

46. In cancer chemotherapy, a great advantage of combination chemotherapy is

- A. The lack of acute or chronic toxicity *N*
- B. The total elimination of tumor cells by a single dose *N*
- C. The ability to use only cell cycle phase specific drugs *N*
- ☒ D. Minimization of the development of tumor cell resistance
- E. Elimination of surgery or radiation to treat localized tumors

47. A patient with a tumor cell burden of 10^{12} cells is treated with cancer chemotherapeutic agents. According to the Skipper hypothesis, after the first treatment the number of tumor cells remaining is

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

48. The formation of DNA lesions is characteristic of

- ☒ A. Alkylating agents *True*
- B. Antimetabolites
- C. Allopurinol
- D. 6-Mercaptopurine
- E. Asparaginase

49. All of the following are involved in the actions of 5-fluorouracil as a cancer chemotherapeutic agent EXCEPT:

- A. Inhibition of dTMP synthesis *T*
- B. Metabolism by salvage pathways *T*
- ☒ C. Exhibition of acute, but not chronic, toxicity *F-FU*
- D. Binding to thymidylate synthetase *T*
- E. Effect on proliferating cells *T*

Cancer Drug

50. All of the following statements concerning paclitaxel are true EXCEPT:

- A. Is an alkaloid *T*
- B. Is a cell cycle specific drug *T*
- C. Blocks cells during mitosis *T*
- D. Affects spindle formation *T*
- E. Is an antimetabolite *False - antineoplastic*

*Cancer Drugs
Act on spindles
Antimetabolite*
Vincristine
Vinblastine
Paclitaxel

51. Which one of the following drugs will potentiate the cardiac effects of norepinephrine?

- A. Metoprolol
- B. Acetylcholine
- C. Amphetamine
- D. Propranolol
- E. Bromocriptine

52. Which one of the following drugs produces an antihypertensive response that can be reversed by yohimbine, an alpha-adrenergic receptor antagonist?

- A. Clonidine *T*
- B. Nadolol
- C. Dobutamine
- D. Bethanechol
- E. Bromocriptine

53. Which one of the following drugs is most likely to accelerate gastric emptying in a patient with gastroparesis following surgery?

- A. Cimetidine *H₂*
- B. Esomeprazole *- H⁺ pump inh.*
- C. Magnesium hydroxide *- diarrhea*
- D. Metoclopramide
- E. Sucralfate *- bind pep.*

diarrhea

54. Benzodiazepines are known to

- A. Bind to GABA receptors and act as GABA agonists *T*
- B. Bind to a benzodiazepine receptor, thereby increasing the efficacy of GABA
- C. Bind to serotonin receptors and act as serotonin antagonists
- D. Block chloride channels
- E. Enter the lipid portion of the cell membrane and enhance conductance of sodium channels

bind to GABA

antimuscarinic

55. A patient taking thioridazine has dry mouth, tachycardia and urinary hesitancy. These are most likely due to thioridazine acting as

- A. An agonist at muscarinic receptors
- B. An agonist at dopamine receptors
- C. An inverse agonist at GABA receptors
- ☒ D. An antagonist at muscarinic receptors
- E. An antagonist at dopamine receptors

atropine *cholinergic* *antagonist*

56. Selective serotonin reuptake inhibitors (SSRIs) used to treat depression are superior to traditional tricyclic antidepressants in that the SSRIs

- A. Have an immediate onset of antidepressant action
- B. Are more efficacious in relieving depression
- C. Are more potent
- D. Antagonize monoamine oxidase to a greater extent
- ☒ E. Have a side-effect profile which is more acceptable to the patient

SSRIs

57. In the USA, marijuana is placed in which one of the following Federal schedules of controlled substances?

Schedule I

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

58. Drug-drug interactions can be caused by

- A. Competition for the same receptor
- B. Blockage of the receptor
- C. Alteration of the receptor properties
- D. Alteration of the number of receptors
- ☒ E. All of the above

59. You may need to decrease your patient's cortisol dosage if he is taking

- A. Estrogen
- B. Progesterone
- ☒ C. Thyroxine
- D. Cimetidine
- E. Phenytoin

↓ cortisol

17-β immune system

60. Geriatric patients often demonstrate increased sensitivity to pharmacological agents. All of the following physiological changes that occur with aging contribute to this increased sensitivity EXCEPT:

- A. Decreases in renal clearance *T*
- B. Decreases in gastric emptying *T*
- C. Reduced lean body mass (increased % body fat) *T*
- ☒ D. Alteration in drug-receptor binding *False*
- E. Decreased blood flow to the liver *T*

61. Which of the following agents is used for the treatment of anemia resulting from kidney failure?

- A. Folate ~
- ☒ B. Erythropoietin *makes more RBC*
- C. Ferrous sulfate *if Fe²⁺ def.*
- D. Vitamin B₁₂ *→ ± def.*
- E. Deferoxamine *→ Fe overdose*

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

- A. Ampicillin + Streptomycin
- B. Sulfamethoxazole + Trimethoprim
- ☒ C. Ampicillin + Tetracycline
- D. Ampicillin + Clavulanic acid
- E. Isoniazid + Rifampin

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

- A. Is a macrolide antibiotic *true*
- ☒ B. Is bacteriostatic *active against Legionnaire's Disease*
- C. Can be used to treat Mycoplasma infections
- D. Is an alternative for penicillin-sensitive patients *→ 50s*
- E. Is excreted unchanged in the urine *→ bacteriocidal*

64. Which of the following statements best describes the mechanism by which colestipol lowers LDL levels?

- A. Binds bile acids in the gastrointestinal tract, preventing reabsorption *achylocholera*
- B. Inhibits lipolysis in adipose tissue *N*
- ☒ C. Stimulates lipoprotein lipase activity
- D. Inhibits HMG CoA reductase *- statin*
- E. Inhibits lipoprotein lipase activity *N*

65. All of the following are attributes of digoxin EXCEPT:

- ☒ A. Acts directly on the kidney to produce a prominent diuresis *F*
- B. Increases intracellular calcium *T*
- C. Prolongs the P-R interval of the electrocardiogram *T*
- D. Increases cardiac contractility *T*
- E. Increases cardiac excitability *T*

66. Botulinum toxin acts by

- A. Decreasing calcium release from the sarcoplasmic reticulum *F*
- B. Preventing glycine release *F*
- C. Binding irreversibly to the nicotinic receptor *F*
- D. Releasing excessive amounts of acetylcholine *F*
- ☒ E. Preventing acetylcholine release *T*

67. The combination of levodopa plus carbidopa (Sinemet) is used in preference to levodopa alone in treating parkinsonism because

- A. Carbidopa elevates the amount of plasma dopamine
- B. The need to use supplemental acetylcholine agonists is eliminated
- C. The need to use supplemental dopamine antagonists is eliminated
- ☒ D. Carbidopa decreases the breakdown of levodopa in the peripheral circulation
- E. Carbidopa releases GABA

68. All of the following conditions have been attributed to excessive alcohol consumption EXCEPT:

- A. Cirrhosis of the liver *T*
- B. Korsakoff's psychosis *T*
- C. Fetal alcohol syndrome *T*
- ☒ D. Congestive heart failure *False, not associated*
- E. Coronary artery disease *T, not associated*

69. Adverse reactions of atropine include all of the following EXCEPT:

- A. Mydriasis and blurred vision *T*
- B. Constipation *T*
- C. Urinary retention *T*
- ☒ D. Bronchoconstriction *False*
- E. Tachycardia *T*

70. Which of the following drugs reduces ergosterol synthesis in fungal cell membranes by inhibiting the demethylation of lanosterol?
- A. Tolnaftate
 - B. Griseofulvin
 - ☒ C. Itraconazole
 - D. Amphotericin B
 - E. Natamycin
71. A polyene antifungal drug used as a mouthwash for the treatment of an oral fungal infection (e.g., thrush):
- A. Naftifine
 - B. Fluconazole
 - C. Amantadine
 - ☒ D. Nystatin
 - E. Flucytosine
72. A protease inhibitor used in combination with two reverse transcriptase inhibitors in the treatment of patients with HIV:
- A. Acyclovir
 - ☒ B. Nelfinavir
 - C. Amantadine
 - D. Zanamivir
 - E. Foscarnet
73. All of the following are true about acyclovir EXCEPT:
- A. Is effective in the treatment of herpes simplex ✓
 - B. Is converted to its triphosphate metabolite, to inhibit viral DNA polymerase ✓
 - C. Has lower oral bioavailability than valacyclovir ✓
 - D. Intravenous administration may cause thrombophlebitis ✓
 - ☒ E. Causes a high incidence of seizures, hepatotoxicity and anemia *False*
74. Effects of thyroid hormones include all of the following EXCEPT:
- A. Essential for growth and development ✓
 - B. Increase basal metabolic rate ✓
 - C. Essential for maturation of the central nervous system ✓
 - D. Increase plasma glucose ✓
 - ☒ E. Increase plasma cholesterol *False*

hypoglycemia & sedation

75. Which of the following best describes the potential adverse reactions of levothyroxine?
- ☒ A. Hypoglycemia and sedation
 - B. Insomnia and tachycardia
 - C. Hepatotoxicity
 - D. Nephrotoxicity and neuromuscular blockade
 - E. Mydriasis and constipation
76. An endogenous hormone that lowers plasma calcium, inhibits bone resorption and is useful in the treatment of hypercalcemia of neoplasia:
- ☒ A. Calcitonin - *lowers plasma calcium*
 - B. Parathyroid hormone
 - C. Levothyroxine
 - D. Insulin
 - E. Progesterone
77. Which of the following best describes the adverse reaction profile of glyburide?
- A. Renal impairment
 - B. Congestive heart failure
 - C. Pulmonary fibrosis
 - ☒ D. Hypoglycemia and fatigue
 - E. Bone marrow suppression
- ↓
hypoglycemia
fatigue*
78. All of the following are true about ethinyl estradiol EXCEPT:
- ☒ A. Reduces high-density lipoproteins (HDLs)
 - B. Increases coagulation factors II, VII, IX and X *T*
 - C. Increases the risk of migraine headaches *T*
 - D. Reduces bone resorption of calcium *T*
 - E. Combined with a progestin for oral contraception *T*
79. A partial estrogen receptor agonist used to stimulate follicular development and ovulation in certain cases of infertility:
- A. Flutamide
 - B. Danazol
 - C. Megestrol
 - D. Mestranol
 - ☒ E. Clomiphene

80. The antianginal actions of nitroglycerin include all of the following **EXCEPT**:

- A. Coronary vasodilation T
- B. Relaxation of veins T
- ☒ C. Bradycardia False
- D. Reduction in ventricular volume T
- E. Decreased afterload T

81. All of the following statements about fluoride treatment are true **EXCEPT**:

- A. There is a direct relationship between fluoride concentration in drinking water and protection against caries T
- B. Five parts per million fluoride concentration in drinking water gives more anticaries protection than one part per million T
- C. There is a direct relationship between fluoride concentration in drinking water and the occurrence of enamel fluorosis T
- ☒ D. The mechanism of fluoride action deals with the formation of more soluble fluorapatite from the less soluble hydroxyapatite, resulting in an increase in remineralization of the enamel False
- E. There is a direct relationship between fluoride concentration in drinking water and the risk of development of hypocalcemia True

82. Each of the following antiseptics/disinfectants is correctly paired with its characteristic **EXCEPT**:

- A. Sodium hypochlorite – release of chlorine; useful for debridement of root canals T
- B. Iodine compounds – germicidal spectrum: bacteria, viruses, protozoa, fungi T
- ☒ C. Iodophors – release iodine rapidly False
- D. Surface active agents – effective against gram positive organisms; include common soaps T
- E. Oxidizing agents – might alter subgingival environment; problems with sloughing T

83. The drug of choice for the treatment of respiratory depression due to an overdose of morphine is

- A. Pentazocine
- B. Methadone
- C. Buprenorphine
- ☒ D. Naloxone
- E. Propoxyphene

84. All of the following are parameters associated with cancer chemotherapy EXCEPT:

- ☒ A. Normal cells are immune to the effects of cancer drugs *False*
- B. Biochemical pathways needed for drug activity *T*
- C. Alteration of cellular molecules *T*
- D. Disruption of cell function - *T*
- E. Effects on growing cells *T*

85. Methotrexate inhibits the activity of which enzyme?

- A. DNA ligase
- ☒ B. Dihydrofolate reductase *inhibits dihydrofolate reductase*
- C. Ribonucleotide reductase
- D. Hypoxanthine-guanine phosphoribosyltransferase
- E. Thymidine kinase

86. A 10-year-old girl is seen by the neurologist because she is having difficulties at school. During the day, the girl experiences brief losses of consciousness. Her EEG reveals a 3Hz polyspike wave pattern characteristic of absence epilepsy. After a course of treatment with carbamazepine, her symptoms worsen. The best medical management plan is to

- A. Increase the dose of carbamazepine
- B. Supplement the carbamazepine with phenobarbital
- ☒ C. Switch to phenytoin and withdraw carbamazepine
- D. Switch to ethosuximide and withdraw carbamazepine
- E. Determine the blood levels of carbamazepine

7 87. An antihypertensive drug that is most likely to produce syncope with the first dose:

- A. Verapamil *CG*
- ☒ B. Captopril *ACE inh*
- C. Hydrochlorothiazide
- ☒ D. Prazosin *RHT*
- E. Methyldopa *→ No*

orthost. Hyp.

88. Which of the following best describes the mechanism of action of insulin?

- A. Binds to a G-protein-linked receptor to increase adenylyl cyclase
- ☒ B. Binds to a tyrosine kinase-linked receptor
- C. Binds to an intracellular receptor to enhance gene expression
- D. Binds to a chloride ionophore
- E. Binds to a G-protein-linked receptor to increase phospholipase C

binds to a tyrosine Kinase-linked receptor

89. A drug with elimination half-life equal to 6 hours is infused at a constant rate of 10 ug/min. The steady-state level will be attained in approximately

- A. 1 min.
B. 10 mins.
C. 8 hrs.
D. 25 hrs.
E. 40 hrs.

QUESTIONS 90-100: Match Type

Questions 90 and 91: For each of the numbered statements, select the single, most appropriate lettered family of drugs. You may use each letter once or not at all.

- A. A potassium sparer
B. An osmotic diuretic
C. A xanthine diuretic
D. A loop diuretic
E. A thiazide diuretic

E 90. Therapy with this drug class may result in the development of hypokalemia, hyperglycemia, hyperuricemia, hypercalcemia and hypocalciuria; with prolonged therapy, increases in concentration of cholesterol and triglycerides may occur

Thiazide diuretic

D 91. Therapy with this drug class may result in the development of hypokalemia, hyperglycemia, hyperuricemia and ototoxicity

Loop diuretic

Questions 92 thru 95: For each of the numbered statements, select the single, most appropriate lettered agent. You may use each letter once or not at all.

- A. Azathioprine
B. Cyclosporine - inhibits IL-2 production
C. Rhogam - newborns
D. Thymosin - DiGeorge's Syndrome
E. BCG - Bladder Cancer

E 92. Adjuvant used to stimulate the immune system and to treat bladder cancer

BCG

D 93. Substance used to reverse the effects of DiGeorge's syndrome

Thymosin

B 94. Substance that inhibits interleukin-2 production by T cells

Cyclosporine

C 95. Preparation used in preventing hemolytic disease of the newborn

Rhogam

Questions 96 thru 98: For each of the numbered statements, select the single, most appropriate lettered agent. You may use each letter once or not at all.

- bacteriostatic*
- A. Polymyxin
 - B. Trimethoprim - *inhibits dihydrofolate reductase*
 - C. Sulfasalazine
 - D. Vancomycin - *red neck*
 - E. Dapsone - *anti-inflammatory*

96. Generally bacteriostatic when used alone; acts by inhibiting dihydrofolate reductase
B
97. Prodrug used for its anti-inflammatory properties rather than its antibacterial activity
E. Dapsone
98. Cell-wall synthesis inhibitor, may give flushing and redness following intravenous administration
D "red neck" Vancomycin

Questions 99 and 100: For each of the numbered statements, select the single, most appropriate lettered agent. You may use each letter once or not at all.

- A. Cefaclor - *cephalosporin*
- B. Sulfamethoxazole
- C. Clavulanic acid
- D. Erythromycin
- E. Tetracycline

TC = cephalosporin

99. Orally available, bactericidal antibiotic; acts by inhibiting cell-wall synthesis
Cefaclor
100. Bacteriostatic drug, may give red rash after exposure to sunlight (photosensitivity); affects development of teeth

E Tetracycline - may give red rash

END OF EXAM