

*Corrected*

**DENTAL PHARMACOLOGY  
FINAL EXAM**

*April 16, 2004*

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.

Questions 1 – 90: Select the single, most appropriate answer.

1. Which of the following drugs is most likely to produce constipation, urinary retention, mydriasis, tachycardia, dry mouth and dry eyes?

A. Atropine  
B. Bethanechol  
C. Physostigmine  
D. Propranolol  
E. Morphine

2. Which of the following drugs is most associated with production of nephrotoxicity?

A. Ketoconazole  
B. Flucytosine  
C. Amphotericin B  
D. Griseofulvin  
E. Terbinafine

3. Which of the following drugs is useful in the treatment of onychomycosis, but may produce hepatotoxicity?

A. Miconazole  
B. Amphotericin B  
C. Zidovudine  
D. Natamycin  
E. Terbinafine

4. Which of the following drugs is useful as a mouthwash in the treatment of oral candidiasis?

A. Nystatin  
B. Griseofulvin  
C. Tolnaftate  
D. Amantadine  
E. Penicillin G

5. Which of the following statements best describes lamivudine?

A. Is most useful in the treatment of Influenza A  
B. Its metabolite inhibits herpes DNA polymerase  
C. Is a neuraminidase inhibitor, effective in treating influenza A  
D. Is an inhibitor of reverse transcriptase, used in treating HIV  
E. Is an inhibitor of ergosterol synthesis, used in treating candidiasis

6. A prodrug, metabolized to its triphosphate which inhibits herpes DNA polymerase:

B

- A. Nelfinavir
- ☒ B. Valacyclovir
- C. Amantadine
- D. Amphotericin B
- E. Ceftriaxone

7. Excessive doses of thyroid hormones are **LEAST** likely to produce

A

- ☒ A. Hypoglycemia
- B. Insomnia
- C. Weight loss
- D. Tachycardia
- E. Intolerance to heat

8. Which of the following best describes the mechanism of propylthiouracil?

D

- A. Blocks thyroid hormone receptors
- B. Stimulates insulin secretion
- C. Is an inhibitor of estrogen synthesis
- ☒ D. Reduces the synthesis of thyroid hormones
- E. Increases the deiodination of thyroxine

9. Preferred drug for the treatment of hypothyroidism:

E

- A. Methimazole
- B. Glyburide
- C. Propylthiouracil
- D. Metformin
- ☒ E. Levothyroxine

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

E

- A. A drug administered orally is susceptible to first pass metabolism
- B. Binding of a drug to plasma proteins reduces its rate of distribution
- C. The non-ionized portion of a drug is more likely to cross the blood brain barrier
- D. Gaseous drugs, such as nitrous oxide, can be excreted unchanged via the lungs
- E. Increasing urinary pH causes an increase in excretion of weak bases

11. A 24-year-old man has been treated for the past 12 years for type 2 mellitus. Which of the following drugs is most appropriate for oral treatment?

- B
- A. Glyburide
  - ☒ B. NPH insulin
  - C. Metformin
  - D. Regular (cystalline zinc) insulin
  - E. Lispro insulin

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

- E
- A. Binds to an intracellular receptor to increase protein synthesis
  - B. Increases adenylyl cyclase
  - C. Increases guanylyl cyclase
  - D. Enhances chloride influx
  - ☒ E. Binds to a tyrosine kinase-linked receptor

13. Chronic dosing of which drug for treatment of inflammation can cause osteoporosis?

- A
- ☒ A. Prednisone
  - B. Ibuprofen
  - C. Aspirin
  - D. Calcitriol
  - E. Metformin

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

- C
- A. Binds to intracellular receptors to increase protein synthesis
  - B. Causes opening of sodium channels
  - ☒ C. Increases levels of cAMP
  - D. Causes chloride influx
  - E. Binds to a tyrosine kinase-linked receptor

15. Use of estrogens is LEAST likely to produce

- E
- A. Increased risk of venous thromboembolism
  - ☒ B. Increased risk of endometrial cancer
  - C. Gallbladder disease
  - ☒ D. Headaches
  - ☒ E. Osteoporosis

16. Which of the following drugs is most useful in the treatment of estrogen-dependent breast cancer in postmenopausal women?

- A. Mestranol
- B. Flutamide
- ☒ C. Tamoxifen
- D. Ethinyl estradiol
- E. Mifepristone

17. Which of the following agents has both opioid receptor agonist and antagonist properties?

- E X
- A. Propoxyphene
  - ☒ B. Naltrexone
  - C. Fentanyl
  - D. Meperidine
  - ☒ E. Pentazocine

18. Which of the following drugs has the greatest analgesic efficacy?

- B X
- A. Pentazocine
  - ☒ B. Meperidine
  - C. Naloxone
  - D. Propoxyphene
  - ☒ E. Codeine

19. Which of the following statements best describes the steroid receptor?

- D X
- A. It is a calcium dependent enzyme modifier
  - B. It is a noncovalent enzyme modifier
  - C. It is a covalent enzyme modifier
  - ☒ D. It binds to DNA and modifies mRNA synthesis
  - ☒ E. It is regulated by inositol 1,4,5, trisphosphate

20. The chief disadvantage of nitrous oxide as a general anesthetic is

- A
- ☒ A. Low potency (high MAC)
  - B. Prolonged recovery time due to retention in fat
  - C. Poor analgesia
  - ~~D. Slow induction~~
  - ~~E. Excessive relaxation of skeletal muscles~~

21. Which of the following drugs is commonly given along with nitroglycerin in drug regimens for angina pectoris in the normotensive patient?

- A X ☒ A. Propranolol  
☒ B. Hydrochlorothiazide  
C. Guanethidine  
D. Digoxin  
~~E. Epinephrine~~

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

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

23. Parkinsonism is best treated by

- C ☐ 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

24. Alcohol is metabolized at a rate that is

- C X ☐ A. Linearly related to blood alcohol concentration  
☒ B. Logarithmically related to blood alcohol concentration  
☒ C. Independent of the blood alcohol concentration  
D. Inversely related to blood alcohol concentration  
E. Exponentially related to blood alcohol concentration

25. A 23-year-old pregnant woman is found to be anemic. Laboratory analysis shows that she has typical microcytic hypochromic anemia of pregnancy. Which of the following agents would be most useful to relieve the anemia?

- D ☐ A. Cobalamin  
B. Folic acid  
☒ C. Erythropoietin  
☒ D. Ferrous sulfate  
E. Intrinsic factor

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

- A. Broad spectrum antibiotics are more likely than narrow spectrum antibiotics to give rise to superinfections
- B. Bacterial conjugation leads to multiple antibiotic resistance
- ☒ C. Combinations of antibiotics are always more effective than one antibiotic used alone
- D. Bactericidal antibiotics are generally preferable to bacteriostatic antibiotics
- E. Prophylactic use of antibiotics may be indicated in immunosuppressed patients undergoing minor surgery

27. An elderly woman in a nursing home is being treated with antibiotics for community acquired pneumonia. She develops a painful and bloody diarrhea. Which of the following drugs is she most likely taking?

- A. Penicillin G
- B. Clavulanic acid
- C. Imepinem
- ☒ D. Clindamycin
- E. Cefaclor

28. The diarrhea (in question 27), caused by *Clostridium difficile* is treated with another drug. Which of the following drugs would be most useful?

- A. Intravenous gentamicin
- ☒ B. Oral vancomycin
- ☒ C. Tetracycline
- D. A combination of an aminoglycoside and a penicillin
- E. A quinolone

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

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



30. A cardiac patient taking warfarin contracts tuberculosis. Her physician increases the warfarin dose in response to the TB treatment regimen, which alters the metabolism of warfarin. Which of the following drugs most likely necessitates the change in warfarin dose?

A X ☒ A Rifampin  
☒ B Streptomycin  
C Isoniazid  
D Pyridoxine  
E Ethambutol

31. All of the following statements about sulfonamides are true EXCEPT:

A ☒ A Act by inhibiting dihydrofolate reductase  
B Are bacteriostatic antibiotics  
C Sulfonamides and trimethoprim form a synergistic combination  
D Can be used to treat urinary tract infections  
E Can cause kidney damage

32. All of the following statements about ciprofloxacin are true EXCEPT:

D X ☒ A Is a semisynthetic derivative of nalidixic acid  
B Acts by inhibiting DNA synthesis  
C Is orally available  
☒ D Is excreted unchanged in the feces  
E Is useful in treating diarrhea

33. You have a 20-year-old female patient, who suffers from lupus erythematosus, and you are about to perform an extraction of two teeth. Your treatment will need to be given special consideration because the patient is most likely receiving which of the following therapies for her lupus condition?

D ☒ A Alpha interferon  
B BCG (Bacille Calmette-Guerin)  
C Levamisole  
☒ D Prednisone  
E Rho(D) immune globulin



34. Several of the drugs commonly used to prevent organ graft rejection most likely work by which of the following mechanisms?

- ☒ A. Promote the activity of the cyclophilins
- ☐ B. Promote antibody switching by activated B cells
- ☐ C. Inhibit antigen processing by activated B cells
- ☐ D. Promote the induction of anti-lymphocyte antibodies
- ☐ E. Inhibit IL-2 expression, and/or inhibit IL-2 receptor function, by activated T cells

35. A hypertensive patient was put on diuretic therapy and was asked to schedule a follow-up visit in one month, at which time laboratory studies revealed hypokalemia, hyperglycemia, hyperuricemia and hypocalciuria. Which of the following diuretics was she probably taking?

- ☐ A. Theophylline
- ☐ B. Furosemide
- ☐ C. Spironolactone
- ☒ D. Hydrochlorothiazide
- ☐ E. Acetazolamide

36. Which of the following has the greatest degree of beta-2 adrenergic receptor selectivity, is an effective bronchodilator, may cause tremor with oral use, and has little cardiac stimulation compared to epinephrine?

- ☒ A. Albuterol
- ☐ B. Aminophylline
- ☐ C. Beclomethasone
- ☐ D. Norepinephrine
- ☐ E. Zafirlukast

37. The most effective antidiarrheal action would be attributed to which of the following drugs?

- ☐ A. Bismuth subcarbonate
- ☐ B. Kaopectate
- ☒ C. Loperamide
- ☐ D. Lactulose
- ☐ E. Cascara sagrada

38. All of the following antiseptics/disinfectants are correctly paired with their action **EXCEPT**:

- D
- A. Surface active agents –include common soaps; effective against gram-positive organisms
  - B. Oxidizing agents – might alter subgingival environment
  - C. Sodium hypochlorite – release of chlorine; useful for debridement of root canals
  - ☒ D. Iodophors – release iodine more rapidly
  - E. Iodine compounds – antibacterial, antifungal, antiprotozoal and antiviral

39. All of the following are characteristic of alcohols **EXCEPT**:

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

40. Signs of fluoride poisoning would **LEAST** likely include

- B
- ~~A. Nausea~~
  - ☒ B. Cardiovascular stimulation
  - ~~C. Diarrhea~~
  - ~~D. Hyperreflexia~~
  - ~~E. Vomiting~~

41. All of the following statements about caries activity are true **EXCEPT**:

- 7
- AD
- A. Watery diets manifest negligible caries
  - B. There is a direct relationship between intake of refined carbohydrates and caries activity
  - C. In patients chronically fed by intubation, there is evidence of only negligible caries
  - ☒ D. Cavitation does not exist if a program of good nutrition is strictly adhered to F
  - E. A monosaccharide is less cariogenic than a disaccharide

42. Oxycodone is listed in which Federal schedule of controlled substances?

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

48. Which of the following statements best characterizes cimetidine?

A

- ☒ A. Reduces symptoms of gastro-esophageal reflux
- B. Reduces symptoms of seasonal allergies
- C. Induces cytochrome P450
- D. Stimulates testosterone production
- E. Is a potent antiemetic

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

E X

- A. Mepivacaine is metabolized by liver microsomal enzymes
- B. Benzocaine is used only for topical application
- C. Effects of local anesthetics are more pronounced in rapidly firing neurons than in slowly firing neurons
- ☒ D. Among all sensations, pain is lost first after the injection of a local anesthetic
- ☒ E. Procaine produces vasoconstriction

50. Which of the following drugs potentiates the cardiac effects of norepinephrine?

B

- ☒ A. Clonidine
- ☒ B. Amphetamine
- C. Metoprolol
- D. Propranolol
- E. Bethanechol

51. Which of the following cancer chemotherapeutic drugs is LEAST likely to induce acute toxicity?

C

- A. Vinblastine
- B. Paclitaxel
- ☒ C. 6-Thioguanine
- D. Vincristine
- E. Cyclophosphamide

43. Which of the following statements is true in regard to age-related physiological changes in the elderly?

- A. Greater plasma protein binding of drugs
- B. An age-related decrease in total body fat
- ☒ C. An age-related decline in kidney function can cause a marked prolongation of the half-life of many drugs
- D. An increase in volume of distribution for water soluble drugs
- E. Increased absorption due to increased motility of the gastrointestinal tract

44. Esomeprazole is an example from which class of drugs acting on the gastrointestinal tract?

- B1 X
- A. Cytoprotective agent
  - ☒ B. Proton pump inhibitor
  - ~~C. Antacid~~
  - D. Antihistamine
  - E. Antibiotic

45. Which of the following antiepileptic drugs may be used in the treatment of absence seizures when ethosuximide is not satisfactory?

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

46. All of the following statements apply to chlorpromazine EXCEPT:

- A
- ☒ A. Stimulates histamine receptors
  - B. Causes orthostatic hypotension
  - C. Is a member of the phenothiazine class of antipsychotic agents
  - D. Blocks muscarinic receptors
  - E. Increases the rate of secretion of prolactin

47. Which of the following drugs is an antihistamine (H<sub>1</sub>-blocker) with the greatest antimuscarinic and sedative side effects?

- B
- A. Cimetidine
  - ☒ B. Diphenhydramine
  - C. Fexofenadine
  - D. Ranitidine
  - E. Propoxyphene

**For Questions 52 and 53:**

A young woman is brought to the emergency room having taken 50 maximum strength acetaminophen tablets 4 hours earlier. She has no immediate symptoms.

52. The most serious concern would be development of

- D X
- A. Hemolytic anemia
  - ~~B. Renal failure~~
  - C. Metabolic acidosis
  - ☒ D. Delayed hepatic necrosis
  - E. Methemoglobinemia

53. This drug overdose is best managed by continued administration of

- A
- ☒ A. Acetylcysteine
  - B. Sodium bicarbonate
  - C. Methylene blue
  - D. Vitamin C
  - E. Castor oil

54. A teratogenic vitamin A analog used orally in the treatment of severe acne:

- a ?
- A. Menadione
  - B. Isoniazid
  - ☒ C. Isotretinoin
  - D. Calcitriol
  - E. Infliximab

55. All of the following statements regarding the administration of drugs to pregnant or lactating women are true **EXCEPT**:

- D
- A. Most drugs are detectable in breast milk; however, the concentrations achieved are usually low
  - B. A single intrauterine exposure to a drug can affect the fetal structures undergoing rapid development at the time of exposure
  - C. Fetal therapeutics is an emerging area in perinatal pharmacology which involves drug administration to the pregnant woman with the fetus as the target of the drug
  - ☒ D. Maternal drugs will not cross the placenta to reach the fetus
  - E. The molecular weight of a drug influences the rate of transfer and the amount of drug transferred across the placenta

56. Which of the following compounds most effectively inhibits the synthesis of prostaglandins?

- A. Acetylsalicylic acid  
B. Acetylcysteine  
C. Colchicine  
D. Acetaminophen  
E. Morphine

57. Iatrogenic exposure during pregnancy to which of the following drugs has been shown to produce tumors in the female offspring of patients?

- A. Methotrexate  
B. Diethylstilbestrol  
C. Naproxen  
D. Verapamil  
E. Diazepam

58. Which of the following drugs is most likely to stimulate salivary secretions, and is useful in the treatment of xerostomia?

- A. Glycopyrrolate  
B. Pilocarpine  
C. Clonidine  
D. Hydrochlorothiazide  
E. Scopolamine

59. Which of the following drugs inhibits ergosterol synthesis in fungal cells?

- A. Nystatin  
B. Tolnaftate  
C. Griseofulvin  
D. Itraconazole  
E. Acyclovir

60. Which of the following drugs is effective in the treatment of cytomegaloviral infections, but produces the highest incidence of anemia and renal toxicity?

- A. Amantadine  
B. Oseltamir  
C. Interferon  
D. Nelfinavir  
E. Ganciclovir



61. Zidovudine is most likely to produce which of the following adverse reactions?

- A. Hypertension
- B. An overgrowth of clostridium in the gastrointestinal tract
- ☒ C. Anemia
- D. Nephrolithiasis (kidney stones)
- ☒ E. Bronchospasm

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

- A. Increases the activity of adenylyl cyclase
- B. Causes opening of sodium channels
- ☒ C. Binds to nuclear receptors to increase protein synthesis
- D. Increases activity of protein kinase C
- E. Binds to the GABA ionophore

63. Which of the following drugs binds to hydroxyapatite to reduce bone resorption of calcium? It is used in the treatment of osteoporosis.

- A. Rosiglitazone
- B. Prednisone
- C. Methimazole
- ☒ D. Alendronate
- E. Norgestrel

64. The most likely adverse reaction of glyburide is

- ☒ A. Hypoglycemia
- B. Psychotic reactions
- C. Renal impairment
- D. Hypertension
- E. Bradycardia

65. Which of the following drugs is useful in the treatment of type-2 diabetes mellitus, and acts by stimulating insulin secretion?

- A. Acarbose
- ☒ B. Glipizide
- C. Rosiglitazone
- D. Metformin
- E. Propylthiouracil

3 X 66. Which of the following drugs is most useful in the prevention and treatment of rickets and osteomalacia?

- ☒ A. Parathyroid hormone
- ☐ B. Calcitriol
- ☐ C. Glyburide
- ☐ D. Fluoride
- ☐ E. Prednisone

C X 67. Which of the following drugs is a competitive androgen receptor antagonist used in the treatment of metastatic prostate cancer?

- ☐ A. Fluoxymesterone
- ☐ B. Tamoxifen
- ☒ C. Flutamide
- ☐ D. Megestrol
- ☒ E. Levonorgestrel

68. A partial estrogen receptor agonist, used to stimulate follicular development and ovulation:

- D
- ☐ A. Ethinyl estradiol
  - ☐ B. Finasteride
  - ☐ C. Nandrolone
  - ☒ D. Clomiphene
  - ☐ E. Megestrol

C 69. Acute intoxication with which of the following drugs is characterized by pupillary dilation, anorexia, and increased talkativeness?

- ☐ A. Lysergic acid diethylamide
- ☐ B. Heroin
- ☒ C. Amphetamine
- ☐ D. Gamma hydroxybutyrate
- ☐ E. Nitrous oxide

E 70. The clinical problem most commonly associated with all anticoagulant and antiplatelet therapies is

- ☐ A. CNS depression
- ☐ B. Hepatic necrosis
- ☐ C. Renal damage
- ☐ D. Hypertension
- ☒ E. Excessive bleeding

71. Cinchonism is a syndrome associated with which of the following drugs?

- A. Quinidine  
B. Digitoxin  
C. Sotalol  
D. Procainamide  
E. Propranolol

72. Which of the following is an antihypertensive drug that most likely produces syncope with the first dose?

- A. Verapamil  
B. Captopril  
C. Hydrochlorothiazide  
D. Prazosin  
E. Methyldopa

73. 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 hours  
D. 26 hours  
E. 40 hours

74. Which of the following drugs is a depolarizing neuromuscular blocker with a short duration of action, and is broken down by pseudocholinesterase?

- A. d-Tubocurare  
B. Pancuronium  
C. Hexafluorenum  
D. Benzoquinonium  
E. Succinylcholine

75. Which barbiturate has the shortest duration of action?

- A. Pentobarbital  
B. Secobarbital  
C. Phenobarbital  
D. Mephobarbital  
E. Thiopental

76. Which of the following classes of antibiotics can be used orally to treat a gram-negative bone infection?

- B**
- A. A macrolide antibiotic, such as erythromycin
  - ☒ B. A fluoroquinolone, such as ciprofloxacin
  - C. A sulfonamide, such as sulfamethoxazole
  - D. A tetracycline, such as chlortetracycline
  - E. An aminoglycoside, such as streptomycin

77. Which of the following antibiotics is given in combination with a peptidase inhibitor to prevent its metabolism in the kidney?

- E X**
- A. Ethambutol
  - B. Isoniazid
  - ☒ C. Rifampin
  - D. Aztreonam
  - ☒ E. Imipenem

78. Tetracyclines would be most likely used in dentistry for which of the following indications?

- B**
- A. Orodontal infections
  - ☒ B. Peridontal infections
  - C. Bone infections
  - D. Prophylaxis
  - E. Abscesses

79. All of the following indications for antibiotic use are true **EXCEPT**:

- A X**
- ☒ A. First generation cephalosporins are useful in treating meningitis
  - B. Chloramphenicol is indicated for treatment of Salmonella infections
  - ☒ C. Clindamycin is a useful drug in treating urinary tract infections
  - D. Tetracyclines can be used to treat Rickettsial infections
  - E. Quinolones are useful in treating bone infections

80. Which of the following classes of antibiotics may require a supplement of vitamin K to avoid blood clotting problems caused by the antibiotic?

- D**
- A. Fluoroquinolones
  - B. Penicillins
  - C. Aminoglycosides
  - ☒ D. Cephalosporins
  - E. Tetracyclines

81. One of your patients has recently received a kidney transplant, and is receiving potent immunosuppressive drug therapy to prevent organ rejection. Which of the following drugs is **LEAST** likely used for this patient to control the rejection of the renal transplant?

- A. Cyclosporin
- ☒ B. Isoprinosine
- ~~C~~ FK506 (Tacrolimus)
- D. Rapamycin
- ~~E~~ Azathioprine

82. You are called on to treat a 24-year-old female patient who has been diagnosed with Lupus erythematosus, and is being treated with cyclophosphamide. This drug

- A. Is immunosuppressive because it inhibits the expression of MHC molecules by antigen-presenting cells
- B. Is immunosuppressive because it binds to FKBP
- C. Is a potent immunosuppressive drug because it is active in the absence of metabolism in the liver by P450
- D. Has limited use because it can not be used in patients who undergo bone marrow transplantation
- ☒ E. Is a potent alkylating agent

83. Basic mechanisms of action of local anti-infectives may include:

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

84. All of the following antiseptics/disinfectants are correctly characterized **EXCEPT**:

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

85. All of these statements about anticaries approaches in humans are true **EXCEPT**:

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

86. An inverse agonist at the benzodiazepine binding site is most likely to cause which of the following actions?

- A. Muscle relaxation
- B. Agranulocytosis
- ☒ C. Convulsions
- D. Psychotic episodes
- E. Sedation

87. All of the following drugs have a latency period of at least one week before the onset of their therapeutic action **EXCEPT**:

- A. Lithium carbonate
- B. Tranylcypromine
- C. Imipramine
- D. Fluoxetine
- ☒ E. Diazepam

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

- ☒ A. Lowers systemic blood pressure
- B. Produces only a modest reflex tachycardia, compared to hydralazine
- ☒ C. Acts as an indirect sympathomimetic
- D. Blocks the pressor response to norepinephrine
- E. Selective for alpha-1 adrenergic receptors



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

- B**
- A. Multiple agents are used to achieve maximal cell kill
  - B.** Cancer chemotherapeutic agents only affect cancer cells, not normal cells
  - C. Treatment is often continued after the disappearance of clinical symptoms
  - D. Repetitive doses are used to achieve tumor cell kill **T**
  - E. Tumor cell resistance is reduced in combination chemotherapy

90. All of the following statements are true about drugs used in pregnancy, nursing and pediatric patients **EXCEPT**:

- C**
- A. Reduced renal blood flow in newborns may increase the half-life of drugs, compared to adults
  - B. Most phase I liver enzymes are lower in neonates than in adults
  - C.** Water soluble, ionized drugs readily cross the placenta
  - D. Ethanol ingested by nursing mothers can sedate the infant
  - E. Ethanol ingestion during pregnancy will cross the placenta **T**

**For Questions 91 thru 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** 5-Fluorouracil **T**  
**B** Nitrogen mustards  
**C** Methotrexate  
**D** Cytarabine  
**E** Vinblastine

- E**  
**C**  
**A**  
**B**  
**D**
- 91. Binds to spindle proteins inhibiting cell growth at metaphase **E**
  - 92. Forms a high affinity complex with dihydrofolate reductase **C**
  - 93. Forms a ternary complex with thymidylate synthetase and its folate cofactor **A**
  - 94. Is a cell cycle nonspecific agent that induces DNA damage **B**
  - ~~95.~~ Administered as a nucleoside but inhibits cell growth by incorporation in DNA ~~**A**~~

**For Questions 96 and 97:**

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

- A. Vitamin A (Retinol)
- B. Vitamin D
- C. Vitamin K
- D. Vitamin C (Ascorbic Acid)
- E. Vitamin B<sub>3</sub> (Niacin)

- D 96. Deficiency of this vitamin leads to a condition called scurvy, indicated by soft bleeding gums, loose teeth, joint pain, dry scaly skin and blood vessel damage
- C 97. The vitamin necessary for the production of blood clotting factors II, VII, IX and X

**For Questions 98 thru 100:**

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

- A. Naloxone
- B. Digibind
- C. Atropine
- D. Antivenin
- E. Vitamin K

- D 98. Antidote for the treatment of rattlesnake envenomation
- B 99. Treatment for the acute overdose or accumulation of digoxin in a patient with renal insufficiency
- C X 100. One of a combination of drugs used to treat poisonings with organophosphate and carbamate cholinesterase inhibitors

END OF EXAM