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**DENTAL PHARMACOLOGY  
FINAL EXAMINATION**

***Wednesday, April 12, 2006***

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

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 TUID number and correctly filling in the grid spaces. You may keep your exam booklet. Answers and grades will be posted on Blackboard.

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

Questions 1 – 97: Select the single, most appropriate answer.

1. Which of the following drugs would be most useful in treating anemia resulting from renal failure?
- ☒ A. Erythropoietin
  - B. Folic acid
  - C. Iron
  - D. Vitamin B6
  - E. Vitamin B12
2. Which of the following antibiotics is associated with enhanced metabolism of estrogen and other drugs?
- ☒ A. Amoxicillin
  - B. Chloramphenicol
  - C. Clindamycin
  - ☒ D. Rifampin
  - E. Tetracycline
3. Which of the following drugs can be used to treat antibiotic-associated enterocolitis (bloody diarrhea) caused by *Clostridium difficile*?
- A. Clindamycin
  - B. Erythromycin
  - C. Sulfamethoxazole
  - D. Tetracycline
  - ☒ E. Vancomycin
4. Which of the following classes of antibiotics would be most useful in treating a *Klebsiella* infection, which accounts for about 4% of dental infections?
- A. An aminoglycoside
  - B. A broad spectrum penicillin
  - ☒ C. A cephalosporin
  - D. A fluoroquinolone
  - E. A tetracycline
5. Which of the following classes of antibiotics would be most useful orally in the treatment of a gram-negative bone infection?
- A. An aminoglycoside
  - B. A broad spectrum penicillin
  - C. A cephalosporin
  - ☒ D. A fluoroquinolone
  - E. A tetracycline

6. Superinfections are most likely to result from which of the following classes of antibiotics?

- A. Bactericidal
- ☒ B. Broad spectrum
- C. Narrow spectrum
- D. Those given parenterally
- E. Those excreted through the kidney

7. Drugs from which of the following classes of antibiotics may require a supplement of vitamin K to avoid blood clotting problems caused by the antibiotic?

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

8. Which of the following drugs is not an antibiotic, but is used to enhance the activity of certain antibiotics (e.g., amoxicillin)?

- ☒ A. Clavulanic acid
- B. Bacitracin
- C. Imipenem
- D. Nalidixic acid
- E. Trimethoprim

9. An asthma patient, who regularly takes theophylline, contracts traveler's diarrhea while on vacation. He is treated with an antibiotic and develops seizures. Which of the following drugs is most likely implicated?

- A. Chloramphenicol
- ☒ B. Ciprofloxacin
- C. Clindamycin
- D. Dicloxacillin
- E. Sulfamethoxazole

10. Which of the following drugs is most likely to induce pupillary dilation and paralysis of accommodation?

- A. Pilocarpine
- B. Physostigmine
- ☒ C. Atropine
- D. Phenylephrine
- E. Propranolol

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11. Which of the following statements best describes the mechanism of action of barbiturates?
- ☒ A. Enhance the effects of GABA
  - B. Block serotonin receptors
  - C. Block sodium channels
  - D. Reduce dopaminergic activity
  - E. Block reuptake of norepinephrine and serotonin
12. Sinemet, a combination of levodopa and carbidopa, is used to treat parkinsonism. Carbidopa is important in this preparation because it
- A. Releases stores of endogenous dopamine in the central nervous system
  - ☒ B. Inhibits the breakdown of levodopa to dopamine in the periphery
  - C. Enhances the breakdown of levodopa to dopamine in the central nervous system
  - D. Is a dopamine receptor (D1) agonist
  - E. Is a peripheral dopamine receptor antagonist which reduces the nausea which sometimes accompanies levodopa treatment
13. Each of the following drugs/toxins is correctly matched to its mechanism of action EXCEPT:
- A. Botulinum toxin – prevents acetylcholine release ✓
  - B. Alpha-bungarotoxin – binds irreversibly to the nicotinic receptor
  - C. Black widow spider toxin – releases excessive amounts of acetylcholine ✓
  - ☒ D. Tetanus toxin – stimulates glycine release
  - E. Dantrolene – decreases calcium release from the sarcoplasmic reticulum
14. Alcohol is metabolized at a rate that is
- 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
15. All of the following are attributes of digoxin EXCEPT:
- A. Increases cardiac automaticity
  - ☒ B. Shortens the PR-interval of the ECG
  - C. Increases cardiac output ✓
  - D. Is used in the treatment of congestive heart failure ✓
  - E. Causes visual disturbances with higher doses ✓

16. A drug with elimination half life of 8 hrs will effectively be eliminated (>95%) in what time after its administration?

- A. 4 hrs
- B. 8 hrs
- C. 12 hrs
- D. 24 hrs
- ☒ E. 36 hrs



$$\begin{array}{r} 4.5 \\ 8 \overline{) 36} \\ \underline{-32} \\ 40 \end{array}$$

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✓ 17. Which of the following drugs is most likely to induce DNA damage during cancer chemotherapy?

- A. Asparaginase
- B. Leuprolide
- ☒ C. Cyclophosphamide
- D. Aminoglutethimide
- E. Flutamide

✓ 18. Which of the following toxic side effects is most associated with the use of doxorubicin during cancer chemotherapy?

- A. Endometriosis
- ☒ B. Cardiotoxicity
- C. Hepatotoxicity
- D. Impotence
- E. Hyperglycemia

✓ 19. All of the following statements about local anesthetics are true **EXCEPT**:

- ☒ A. In infected tissues, local anesthetics tend to be more effective
- B. Lidocaine depresses abnormal cardiac pacemaker activity, excitability and conduction
- C. Tetracaine and benzocaine are metabolized by plasma esterases
- D. Local anesthetics act on the intracellular side of the sodium channel to produce their effects
- E. Lidocaine causes vasodilation

✓ 20. Which of the following classes of drugs is most likely to stimulate salivary secretions?

- A. Beta-adrenergic blocking drugs
- B. Alpha-adrenergic agonists
- ☒ C. Muscarinic agonists
- D. Dopaminergic blocking drugs
- E. GABA agonists

21. A 40-year-old patient is being treated for onychomycosis with terbinafine. The physician will monitor the patient for which of the following adverse reactions?
- A. Renal failure
  - ☒ B. Hepatotoxicity
  - C. Tachycardia
  - D. Constipation and urinary retention
  - E. Orthostatic hypotension
22. Which of the following drugs is most associated with dose-dependent renal impairment?
- ☒ A. Amphotericin B
  - B. Miconazole
  - C. Flucytosine
  - D. Amantadine
  - E. Zidovudine
23. Which of the following drugs is most useful by the oral route for the treatment of oral or vaginal candidiasis in an immunocompromised patient?
- A. Acyclovir
  - B. Indinavir
  - C. Flucytosine
  - D. Griseofulvin
  - ☒ E. Fluconazole
24. A 25-year-old man presents to his physician with multiple symptoms. Following tests, his physician prescribes zidovudine, lamivudine and nelfinavir. The patient has most likely been diagnosed with
- A. Influenza A
  - B. Herpes zoster
  - ☒ C. Human immunodeficiency virus (HIV)
  - D. Varicella zoster
  - E. Hepatitis B
25. Which of the following drugs is most useful in the treatment of respiratory syncytial virus and chronic hepatitis C?
- ☒ A. Ribavirin
  - B. Indinavir
  - C. Rimantadine
  - D. Zanamivir
  - E. Enfuvirtide

- ✓26. A 7-year-old boy is brought to the emergency room in a coma. His parents indicate that he has been urinating excessively; tests reveal ketoacidosis. He is diagnosed with type-1 diabetic coma. The most effective drug in treatment of his acute condition is
- ☒ A. Regular insulin
  - B. ~~Tolbutamide~~
  - C. NPH insulin *once day dosing*
  - D. ~~Glyburide~~
  - E. Ultralente insulin
- ✓27. Which of the following drugs stimulates insulin secretion, and is most likely to produce hypoglycemia?
- A. Metformin
  - ☒ B. Glipizide
  - C. Acarbose
  - D. Rosiglitazone
  - E. Hydrochlorothiazide
- ✓28. Which of the following drugs is a partial agonist at estrogen receptors in the anterior pituitary to increase release of FSH and LH in order to induce follicular development and ovulation?
- A. Ethinyl estradiol
  - B. Danazol
  - C. Mestranol
  - ☒ D. Clomiphene
  - E. Nandrolene
- ✓29. Which of the following is an androgen receptor antagonist used in the treatment of prostate cancer?
- A. Raloxifene
  - B. Megestrol
  - ☒ C. Flutamide
  - D. Nandrolone
  - E. Doxazosin
- ✓30. A competitive estrogen receptor blocker in breast tissue useful in the treatment of breast cancer:
- A. Leuprolide
  - B. Sildenafil
  - ☒ C. Tamoxifen
  - D. Levonorgestrel
  - E. Mifepristone



31. Chronic use of which of the following drugs is most likely to cause osteoporosis?

- A. Teriparatide
- B. Calcitriol
- C. Alendronate
- ☒ D. Prednisone
- E. Fluoride

32. Which of the following drugs acts on an intracellular receptor to enhance gene expression and protein synthesis?

- ☒ A. Parathyroid hormone *cAMP*
- ☒ B. Calcitonin
- ☒ C. Calcitriol
- D. Etidronate
- E. ~~Insulin~~

33. Which of the following drugs/hormones increases deposition of calcium in bone, and increases excretion of calcium and phosphate?

- ☒ A. Calcitonin
- B. ~~Parathyroid hormone~~
- C. Vitamin D
- D. Teriparatide
- E. Calcitriol *Vit D*

34. A patient chronically taking an overdose of levothyroxine is most likely to exhibit which symptom?

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- ☒ A. Tachycardia
- B. Weight gain
- C. Fatigue
- D. Hypoglycemia
- E. Hypothermia

35. Which of the following drugs is used as an adjunct in treatment of hyperthyroidism because it reduces the symptoms of the disease?

- A. Albuterol
- B. Epinephrine
- C. Danazol
- ☒ D. Propranolol
- E. Calcitonin

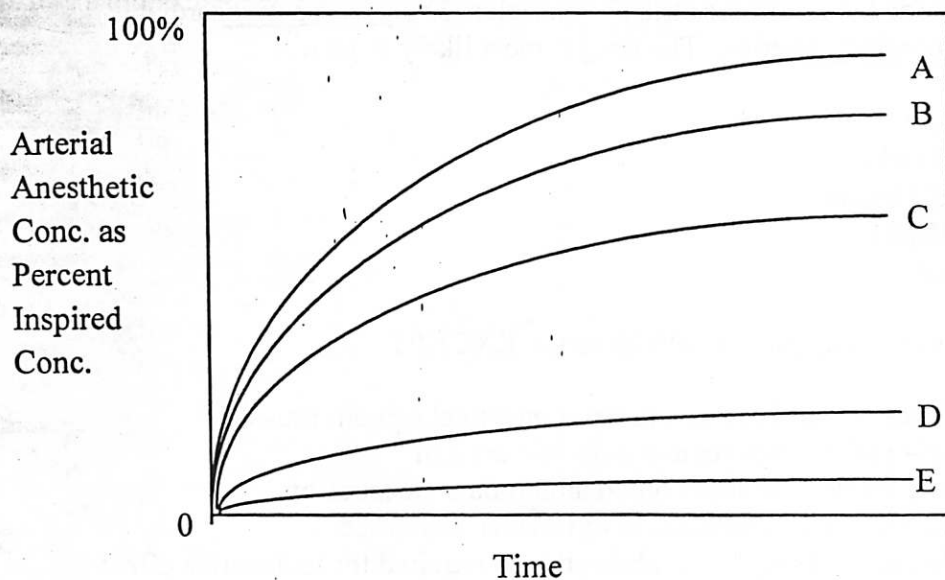


36. A 30-year-old patient is prescribed propylthiouracil for treatment of hyperthyroidism. Adverse reactions include

- A. Tachycardia
- ☒ B. Maculopapular rash, and rarely agranulocytosis
- C. Weight loss
- D. Hyperglycemia and symptoms of diabetes
- E. Hepatotoxicity

37.

AGENT	Blood/Gas Partition Coefficient	MAC
Q	0.3	97
<input checked="" type="radio"/> R	0.6	3
S	13	0.7
T	1.5	5
U	10	15



Each curve represents one of the volatile general anesthetics Q-U in the table above. Which curve represents the rate of induction for anesthetic R?

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

✓ 38. Drugs based on which vitamin are most useful for the treatment of acne?

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

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

- ☐ A. Muscarinic receptor
- ☐ B. Gαq
- ☒ C. The inositol 1,4,5P<sub>3</sub> (IP<sub>3</sub>) receptor
- ☐ D. The nitric oxide receptor
- ☐ E. The nicotinic acetylcholine receptor

✓ 40. A drug has the following actions: 1) decreases automaticity of the SA node; 2) decreases conduction rate in AV node but not in the atria or ventricles; 3) decreases myocardial contractility; 4) dilates coronary arteries. The drug is most likely to be a

- ☐ A. β-adrenergic agonist
- ☒ B. Calcium channel blocker
- ☐ C. Potassium channel blocker
- ☐ D. Sodium channel blocker
- ☐ E. Muscarinic blocker

✓ 41. Each of the following is correctly paired with its action **EXCEPT**:

- ☐ A. Morphine – decreases propulsive movement of intestinal smooth muscle
- ☐ B. Magnesium citrate – saline laxative; non-systemic antacid
- ☐ C. Lactulose – osmotic laxative; reduces blood ammonia concentration
- ☐ D. Enterotoxigenic E. coli – a common cause of traveler's diarrhea
- ☒ E. Mineral oil – hydrolysis subsequent to absorption is required for its laxative effect

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

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

✓43. A laxative effect would characterize all of the following drugs **EXCEPT**:

- A. Magnesium hydroxide
- ☒ B. Aluminum hydroxide
- C. Mineral oil
- D. Cascara sagrada
- E. Castor oil

✓44. The mu opioid receptors in the gastrointestinal tract are responsible for the antidiarrheal action of all of the following drugs **EXCEPT**:

- A. Diphenoxylate
- B. Morphine
- C. Loperamide
- D. Codeine
- ☒ E. Atropine

✓45. Which of the following vitamins are fat soluble vitamins?

- A. Cyanocobalamin and pantothenic acid
- ☒ B. Ascorbic acid and folic acid
- ☒ C. Tocopherol and calciferol
- D. Niacin and riboflavin

✓46. All of the following statements about fluoride are true **EXCEPT**:

- A. Five parts per million fluoride concentration in drinking water gives more anticaries protection than one part per million ✓
- B. There is a direct relationship between fluoride concentration in drinking water and the occurrence of enamel fluorosis ✓
- C. There is a direct relationship between fluoride concentration in drinking water and protection against caries ✓
- D. There is a direct relationship between fluoride concentration in drinking water and the risk of development of hypocalcemia
- ☒ E. The mechanism of fluoride action for the prevention of caries involves the formation of more soluble fluorapatite, than the less soluble hydroxyapatite

✓47. Which of the following is LEAST characteristic of alcohols?

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

48. Mechanisms of action of local anti-infectives include:

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

49. All of the following agents are correctly matched with their accompanying characteristics **EXCEPT**:

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

50. Based on the classification of controlled substances, all of the following statements are true **EXCEPT**:

- A. Schedule I drugs have the greatest potential for abuse ✓
- B. Prescriptions for Schedule II drugs must be in the pharmacy before the preparation is dispensed ✓
- C. Prescriptions for Schedule II drugs may not be refilled ✓
- D. Prescriptions for Schedule III drugs may be telephoned and dispensed, the prescription being subsequently forwarded to the pharmacy
- ☒ E. Prescriptions for Schedule IV drugs may be automatically refilled up to five times within a six month period

51. In the process of a dental procedure your clinic patient experiences a cardiovascular emergency. You reach for an ampoule which is labeled “Epinephrine, 1:1000” and administer 0.35 mL. How much epinephrine did you give?

- A. 0.0035 mg
- B. 0.035 mg
- ☒ C. 0.35 mg
- D. 3.5mg
- E. 35mg

52. Therapy with which class of drugs is most likely to result in the development of hypokalemia, hyperglycemia, hyperuricemia, and hypercalcemia; and with prolonged therapy, causes increases in the concentration of cholesterol and triglycerides?

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

53. Each of the following diuretics is correctly matched with its proposed mechanism or site of action **EXCEPT**:

- A. Spironolactone – competitive mineralocorticoid antagonism ✓
- B. Furosemide – sodium-potassium-chloride cotransporter in ascending limb of Loop of Henle
- C. Hydrochlorothiazide – sodium-chloride cotransporter in early distal tubule.
- ☒ D. Ethacrynic acid – potassium-chloride cotransporter and chloride channel in descending limb of Loop of Henle
- E. Acetazolamide – carbonic anhydrase inhibition ✓

54. All of the following actions are characteristic of xanthines in humans **EXCEPT**:

- ☒ A. Central nervous system stimulation
- ☒ B. Decrease in cerebral vascular resistance
- C. Diuresis ✓
- D. Relaxation of bronchial smooth muscle
- E. Stimulation of cardiac muscle

55. Which drug has the greatest degree of beta-2 adrenergic receptor selectivity, is a bronchodilator with less cardiac stimulation than non-selective beta-agonists, but may cause tremor with oral use?

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

56. Which of the following drugs is used to treat an acute overdose of morphine?

- A. Methadone
- B. Clonidine
- ☒ C. Naloxone
- D. Buprenorphine
- E. Atropine

57. Which of the following statements is true with regard to gamma hydroxybutyrate (GHB)?

- A. GHB has a high therapeutic index
- B. GHB is most often self-administered by the intravenous route
- ☒ C. The depressant effects of GHB are enhanced when taken with ethanol
- ☒ D. An overdose of GHB can be successfully treated with flumazenil
- E. GHB is an analog of amphetamine

58. The clinical condition known as scurvy is due to deficiency of which vitamin?

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

59. A patient with a tumor cell burden of  $10^{14}$  cells is treated with cancer chemotherapy. After the initial treatment, the number of tumor cells remaining is

- A.  $10^4$
- B.  $10^6$
- C.  $10^8$
- D.  $10^{10}$
- ☒ E.  $10^{12}$

60. A patient suffering with breast cancer undergoes chemotherapeutic treatment. The patient is given an infusion of a synthetic base which blocks DNA synthesis. No acute toxicity is observed but chronic use causes myelosuppression. The drug given to the patient most likely is

- A. Bleomycin
- B. Paclitaxol
- ☒ C. 5-Fluorouracil
- D. Cisplatin
- E. Daunomycin

61. Which of the following would be expected from treatment with methotrexate?

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

62. Which of the following drugs would be most suitable for promoting motility in cases of gastroparesis?

- ☒ A. Aluminum hydroxide
- ☒ B. Tegaserod
- C. Codeine ☒
- D. Cimetidine *H<sub>2</sub> blocker*
- E. Naproxen ☒



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

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

64. Which of the following drugs is most useful in treating the manic phase of bipolar depression when lithium is contraindicated?

- A. Phenobarbital
- B. Ethosuximide
- ☒ C. Sodium valproate
- ☒ D. Fluoxetine
- E. Amitriptyline

65. All of the following statements apply to phenylephrine **EXCEPT**:

- A. Reverses hypotension during anesthesia
- ☒ B. Reduces secretions by directly inhibiting parasympathetic stimulation
- C. Constricts small vessels in the nasal mucosa
- D. Is added to local anesthetic solutions
- E. Is primarily a direct-acting alpha adrenergic receptor agonist

66. Most effective treatment for status epilepticus:

- A. Neurontin
- ☒ B. Lorazepam followed by fosphenytoin
- ☒ C. Ethosuximide followed by propranolol *seizures*
- D. Phenobarbital followed by topiramate
- E. Lamotrigine

67. Which of the following drugs is a centrally-acting alpha-2 adrenoceptor agonist, producing dry mouth, drowsiness and bradycardia?

- A. Guanethidine
- B. Mirtazapine
- C. Prazosin
- D. Terbutaline *bronchodil*
- ☒ E. Clonidine

68. All of the following statements concerning buspirone are true **EXCEPT**:

- A. Lacks sedative activity
- ☒ B. Is metabolized to nordiazepam
- C. Is used in the management of generalized anxiety disorder ✓
- D. Acts as a partial agonist of the serotonin 5HT<sub>1A</sub> receptor
- E. Lacks muscle relaxant activity



69. Withdrawal from heroin is characterized by all of the following abstinence signs **EXCEPT**:

- A. Urge to defecate ✓
- B. Gooseflesh ✓
- C. Abdominal cramps ✓
- D. Nausea and diarrhea ✓
- ☒ E. Miosis

70. Celecoxib (Celebrex) is available for the treatment of rheumatoid arthritis. This drug can exhibit severe adverse reactions, and must be used carefully. The desirable and undesirable properties of this drug include:

- A. Is a highly selective COX-1 inhibitor ✗
- B. Is a potent inhibitor of platelet aggregation ✗
- ☒ C. Is associated with myocardial infarction, an adverse reaction which can be fatal
- ☒ D. Is a non-selective inhibitor of TNF production.
- E. All of the above

71. Which of the following statements best describes a characteristic of cimetidine?

- A. Is a selective H-1 histamine receptor blocker ✗
- B. Is highly sedative
- C. Causes dry mouth, blurred vision and urinary retention ✗
- ☒ D. Reduces heartburn
- E. Stimulates androgen receptors

72. Cyclosporine is an effective immunosuppressive drug which can be used to prevent organ transplant rejection. The mechanism of action of this drug is its ability to

- A. Inhibit calmodulin activity which leads to suppression of TNF expression
- B. Inhibit cyclophilin function which leads to over-expression of TNF
- C. Bind to the ~~IL-2~~ receptor and induce IL-1 expression
- ☒ D. Inhibit IL-2 expression
- E. Act as an antagonist for the IL-2 receptor

73. A number of cytotoxic immunosuppressive drugs are employed for the prevention of organ graft rejection. Because of the toxicity of these drugs, it is essential to monitor the patient carefully for the development of adverse reactions. Which of the following statements best describes the characteristics of azathioprine?

- ☒ A. Is an imidazolyl derivative of mercaptopurine, and functions as an antimetabolite
- B. Is a selective inhibitor of RNA synthesis, and is employed as an anti-cancer therapeutic
- C. Is activated by xanthine oxidase and selectively inhibits antibody responses
- D. Can be safely employed for the treatment of lupus in pregnant women because it does not pass through the placenta
- ☒ E. Is a metabolite of penicillin, and works by trapping free radicals

74. Corticosteroids are commonly employed anti-inflammatory drugs. Which of the following statements correctly describes the characteristics of these drugs?
- A. Act to inhibit TNF receptor expression
  - ☒ B. Potential adverse reactions include cataracts, bone dissolution, and cushingoid reactions
  - C. Are not likely to inhibit the expression of pro-inflammatory mediators such as IL-1
  - D. Are highly selective inhibitors of IL-2 receptor expression
  - E. Are effective for treating inflammatory diseases, but are not effective in treating autoimmune disorders such as lupus erythematosus

75. Which of the following drugs is most likely to affect the development of a fetus after only a brief exposure?

- A. Acetaminophen
- ☒ B. Folic acid
- C. Insulin
- D. Digoxin
- ☒ E. Thalidomide

76. Which of the following antibiotic combinations is indicated for treatment of *Pneumocystis carinii* pneumonia in AIDS patients?

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

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

- A. Clindamycin ✓
- B. Erythromycin ✓
- ☒ C. Polymyxin
- D. Streptomycin ✓
- E. Tetracycline ✓

78. Which of the following antibiotics is most likely to give a disulfiram-type reaction when taken with alcohol?

- ☒ A. Chloramphenicol
- ☒ B. Ciprofloxacin
- ☒ C. Metronidazole
- D. Streptomycin
- E. Tetracycline

79. A hospitalized patient develops an infection caused by methicillin-resistant staphylococcus aureus. The infection is also resistant to vancomycin. Which of the following antibiotics is most suitable for treating the infection?

- A. Azithromycin
- B. Erythromycin
- C. Isoniazid
- ☒ D. Linezolid
- E. Streptomycin

80. Atropine-like drugs are most likely to produce

- ☒ A. Tachycardia ✓
- B. Diarrhea
- C. Bronchoconstriction
- D. Miosis
- E. An improvement in memory

81. Which of the following best describes the mechanism of action of itraconazole?

- ☒ A. Binds to ergosterol in fungal cell membranes
- B. Inhibits squalene epoxidase
- C. Inhibits thymidylate synthetase
- ☒ D. Inhibits ergosterol synthesis
- E. Inhibits microtubule function

82. Which of the following best describes the mechanism of action of acyclovir?

- A. Inhibition of ergosterol synthesis
- B. Inhibition of spindle formation
- C. Inhibition of neuraminidase
- ☒ D. Inhibition of viral DNA polymerase
- E. Inhibition of viral uncoating

83. A patient is being treated with ganciclovir for a cytomegaloviral infection. The side effect profile most associated with the drug is

- A. Orthostatic hypotension and tachycardia
- ☒ B. Anemia, renal impairment and seizures
- C. Dry mouth, blurred vision and constipation
- D. Acute pancreatitis
- E. Hepatotoxicity

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

- ☐ A. Increases adenylyl cyclase
- ☐ B. Inhibits adenylyl cyclase
- ☒ C. Stimulates a tyrosine kinase-linked receptor
- ☐ D. Binds to a nuclear receptor to enhance gene expression
- ☐ E. Binds to an ion channel-linked receptor

85. Taken at the beginning of a meal, which drug acts to reduce absorption of glucose from the gastrointestinal tract?

- ☒ A. Acarbose
- ☐ B. Chlorpropamide
- ☒ C. Metformin
- ☐ D. Repaglinide
- ☐ E. Rosiglitazone

86. Estrogens produce all of the following side effects EXCEPT:

- ☐ A. Thromboembolic disorders
- ☐ B. Breast cancer
- ☐ C. Migraine headaches
- ☐ D. Hyperglycemia
- ☒ E. Osteoporosis

87. Use of alendronate is most associated with which adverse reaction?

- ☒ A. Hepatotoxicity
- ☒ B. Gastrointestinal symptoms and esophagitis
- ☐ C. Hypertensive crises
- ☐ D. Orthostatic hypotension and tachycardia
- ☐ E. Renal impairment

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

- ☐ A. Binds to a G-protein-linked receptor to increase cAMP
- ☐ B. Binds to a G-protein-linked receptor to increase phospholipase C
- ☐ C. Stimulates a tyrosine-kinase-linked receptor
- ☒ D. Binds to an intracellular receptor to enhance gene expression
- ☐ E. Binds to a cation-linked channel

89. The primary benefit to lowering the free cholesterol levels in liver cells in treatment of hyperlipoproteinemias is that lowered liver cell cholesterol

- ☐ A. Results in a healthier liver with less chance of necrosis
- ☒ B. Results in enhanced synthesis of LDL receptors
- ☐ C. Reduces bile excretion of cholesterol
- ☒ D. Enhances bile excretion of cholesterol
- ☐ E. Decreases the risk of pancreatitis



90. In the evaluation of fluoride as an anticaries regimen, which of the following side effects would be **LEAST** likely to occur?
- A. Hypocalcemia ✓
  - B. Hyperreflexia ✓
  - ☒ C. Tachycardia
  - D. Enamel fluorosis ✓
  - E. Diarrhea ✓
91. Each of the following antiseptics/disinfectants is correctly matched with its accompanying characteristics **EXCEPT**:
- A. Lysol – a 50% solution of cresol ✓
  - ☒ B. Guaiacol – analgesic action, active ingredient in oil of cloves
  - C. Alcohols – widely-used local anti-infectives
  - D. Hexachlorophene – surgical scrub
  - E. Eugenol – analgesic action
92. Co-administration of which of the following drugs with morphine is most likely to lead to a worsening of respiratory depression?
- ☒ A. Diazepam
  - ☒ B. Propranolol
  - C. Ibuprofen
  - D. Methylphenidate
  - E. Naltrexone
93. A patient suffering with acute myelocytic leukemia undergoes chemotherapeutic treatment. The patient is given continuous infusion of a nucleoside which inhibits DNA replication. The drug given to the patient is most likely
- A. Mitomycin
  - B. Vincristine
  - ☒ C. Cytarabine
  - D. Arsenic trioxide
  - E. Busulfan
94. A cancer patient exhibits both acute and delayed toxicity during treatment. Cytological analysis reveals cells blocked in mitosis. The drug given to the patient is most likely
- A. Cytarabine
  - B. ~~5-Fluorouracil~~
  - C. ~~6-Thioguanine~~
  - ☒ D. Paclitaxel
  - E. Allopurinol

95. Which of the following drugs aids ulcer healing by stimulating secretion of mucus by the gastric mucosa?
- A. Nizatidine
  - B. Omeprazole
  - C. Sucralfate
  - ☒ D. Misoprostol
  - E. Bismuth subsalicylate
96. Which of the following agents is most likely to cause systemic alkalosis when used orally as an antacid?
- A. Aluminum hydroxide
  - B. Calcium carbonate
  - C. Basic aluminum carbonate
  - D. Magnesium hydroxide
  - ☒ E. Sodium bicarbonate
97. All of the following statements apply to chlorpromazine **EXCEPT**:
- A. Increases the rate of secretion of prolactin
  - B. Causes orthostatic hypotension ✓
  - ☒ C. Stimulates histamine receptors
  - D. Blocks muscarinic receptors
  - E. Is a member of the phenothiazine class of antipsychotic agents

### Questions 98 – 100

For each of the numbered drugs, select the single most appropriate lettered antidote to its toxicity. You may use each letter once, or not at all.

- A. Naloxone
- B. Ethanol
- C. N-Acetylcysteine
- D. Calcium
- E. Atropine + pralidoxime

98. Acetaminophen **C**
99. Cholinesterase inhibitors **E**
100. Methanol **B**

END OF EXAM