

**Final Exam of Pharmacology for 7-YMS- 2000 (A)**  
**2003-06-12**

**PART I Choice questions**

**Type A** (only one answer is correct)

1. The drugs that can pass across the blood brain barrier are
  - A. small in molecular weight and ionized drugs
  - B. small in molecular weight and nonionized drugs
  - C. large in molecular weight and ionized drugs
  - D. large in molecular weight and nonionized drugs
  - E. All of above are not true
2. Aspirin is a weak acid with 3.5 of pKa, what percentage of lipid-soluble form will be in the stomach juice with 2.5 of pH?
  - A. 0.99%
  - B. 9%
  - C. 9.09%
  - D. 90.9%
  - E. 99.9%
3. A drug eliminated with first-order kinetics, the concentration of the drug in plasma is 200mg/L at 10 o'clock in the morning after administration of a single dose, and at 10 o'clock on second day morning the drug plasma concentration is 25 mg/L. So, its  $t_{1/2}$  is
  - A. 4h
  - B. 6h
  - C. 8h
  - D. 10h
  - E. 12h
4. A drug binding to the plasma protein vividly possesses the character of
  - A. rapid absorption
  - B. poor penetration via the blood-brain barrier
  - C. rapid distribution to tissues
  - D. rapid metabolism
  - E. rapid elimination
5. The mechanism of treating Phenobarbital poisoning with bicarbonate sodium is that it
  - A. neutralizes Phenobarbital
  - B. stimulates Phenobarbital transference from the brain to the plasma
  - C. alkalinizes urine fluid, prevents Phenobarbital from reuptaking, and stimulates excretion of drug
  - D. both B and C are right
  - E. both A and C are right
6. When presynaptic  $\alpha$ -receptor is activated
  - A. the release of NE is not influenced
  - B. the release of NE is increased

- C. the synthesis of NE is increased  
 D. the release of NE is decreased  
 E. none of above
7. The intoxication of tubocurarine can be antagonized by  
 A. atropine                      B. adrenaline  
 C. neostigmine                  D. dopamine  
 E. ephedrine
8. Which of the following adrenomimetic agents is able to dilate renal vessel and increase renal blood flow?  
 A. Metaraminol(间羟胺)  
 B. epinephrine  
 C. dopamine  
 D.  $\alpha$ -methyldopa  
 E. ephedrine
9.  $\beta$ -antagonists can't be used in the treatment of  
 A. hypertension  
 B. branchial asthma  
 C. tachycardia  
 D. anginal pectoris  
 E. thyrotoxicosis(甲状腺毒症)
10. Patients with myasthenia gravis(重症肌无力) are more effectively treated with  
 A. physostigmine(毒扁豆碱)  
 B. edrophonium(腾喜龙)  
 C. neostigmine  
 D. atropine  
 E. pilocarpine
11. The main mechanism of atropine in the treatment of shock is  
 A. inhibiting vagus nerve to stimulate heart  
 B. dilating vessels and improving microcirculation  
 C. dilating bronchile  
 D. stimulating CNS and improving respiratory  
 E. dilating coronary and renal vessels
12. From the following indications for the use of phentolamine, which is incorrect?  
 A. used for the prevention of hypertension caused by surgical manipulation of pheochromacytoma (嗜铬细胞瘤)  
 B. diagnosis of pheochromacytoma  
 C. treatment of Raynaud's syndrome  
 D. primary hypertension  
 E. microcirculation disturbances
13. The released NE is disposed mainly by  
 A. the metabolism in the liver  
 B. enzymatic inactivation

- C. reuptake by the neuronal terminal  
 D. hydrolysis  
 E. MAO and COMT in the circulation
14. Soon after for a nap, a 4-year-old child is found convulsing. Flush and fever are apparent. The heart rate is 170/min, and the pupils are markedly dilated. Drug intoxication is suspected. The most probable cause is
- A. an organophosphate-containing insecticide (杀虫剂)  
 B. FeSO<sub>4</sub>  
 C. amphetamine(苯丙胺)-containing diet pills  
 D. phenylephrine (苯福林)-containing eye drops  
 E. atropine-containing medication
15. L-dopa
- A. enters the CNS easily  
 B. can be used Parkinson's syndrome induced by chlorpromazine  
 C. is more effective for tremor patients  
 D. can be used in the hepatic coma  
 E. can be used with Vitamin B6
16. In all of the following side effects of chlorpromazine, which can be aggravated by artane ?
- A. akathisia (静坐不能)                      B. parkinson's syndrome  
 C. acute dystonia(肌张力障碍)              D. tardive dyskinesia(迟发性运动障碍)  
 E. postural hypotension
17. Which of the following drugs is contradicated in the patients with epilepsy?
- A. phenobarbital      B. aspirin      C. chlorpromazine  
 D. imipramine      E. digoxin
18. The drug of choice to treat trigeminal neuralgia(三叉神经痛) is
- A. phenytoin sodium      B. carbamazepine      C. Phenobarbital  
 D. ethosuximide      E. primidone
19. Which of the followings is incorrect ?
- A. diazepam is safer than phenobarbital  
 B. withdrawal syndrome of phenobarbital is weaker than that of diazepam  
 C. diazepam can produce muscle relaxation  
 D. both diazepam and phenpbarbital are used in the treatment of convulsion  
 E. both diazepam and phenpbarbital may increase the effect of GABA in CNS
20. The drug that has potent antipsychotic effect, but no extrapyramidal reactions is
- A. chlorpromazine                      B. perphenazine(奋乃静)      C. tardan  
 D. haloperidol (氟哌啶醇)      E. clozapine(氯氮平)
21. Which agent should be given to the patient with fever complicated with gastric ulcer
- A. acetaminophen                      B. ibuprofen                      C. aspirin

D. indomethacin                      E. phenylbutazone

22. All of the following actions of morphine are true EXCEPT

- A. antitussive effect
- B. dilating pupil
- C. boosting intrabiliary pressure
- D. inhibition of respiration
- E. boosting of tension of the bladder sphincter

23. Which of the following drugs can produce anticoagulative effect in vitro?

- A. Anistreplase(阿尼普酶)    B. alteplase    C. sodium citrate
- D. warfarin                      E. aspirin

24. Which of the following statements about aspirin is incorrect?

- A. Its analgesia is due to the inhibition of PG synthesis
- B. It is mainly used to relieve headache and other dull pain
- C. Its main adverse effect is GI reaction
- D. It can inhibit lipoxidase
- E. It inhibits the synthesis of both PGI<sub>2</sub> and TXA<sub>2</sub>

25. The most serious toxic effects of acetaminophen overdose is

- A. nephrotoxicity                      B. CNS toxicity                      C. cardiotoxicity
- D. respiratory depression    E. hepatotoxicity

26. Verapamil decreases conduction velocity in

- A. atrial muscle                      B. A-V node                      C. Purkinje fibers
- D. ventricular muscle                      E. all of them

27. Which of the following anti-anginal drugs is harmful to patients with variant angina?

- A. Verapamil                      B. Nitroglycerin                      C. Propranolol
- D. Nifedipine                      E. Aspirin

28. In which of the following drugs orthostatic hypotension occurs most frequently in first use

- A. clonidine                      B. nifedipine                      C. propranolol

D. methyl dopa                      E. prazosin

29. The best drug used to treat ventricular premature beats and paroxysmal ventricular tachycardia is

- A. propranolol                      B. digitoxin                      C. quinidine  
D. lidocaine                      E. verapamil

30. Captopril can do all of the following EXCEPT

- A. inhibiting ACE  
B. causing dry cough  
C. decrease angiotensin II concentration in the blood  
D. increase sodium in the urine  
E. increase bradykinin concentration in the blood

31. Cardiac glycoside can treat atrial fibrillation because it can

- A. increase concealed conduction in SA node  
B. decrease concealed conduction in SA node  
C. decrease concealed conduction in AV node  
D. increase concealed conduction in AV node  
E. inhibit  $\text{Na}^+$  channel

32. Which of the following statements about sodium nitroprusside is not true ?

- A. the solution is stable to light  
B. the most serious toxicity is related to accumulation of  $\text{SCN}^-$   
C. most side effects are associated with excessive vasodilation  
D. it is parenterally (胃肠外) used  
E. it can be used to manage severe cardiac failure

33. All of the following measures can be used in the treatment of digoxin-induced arrhythmias EXCEPT

- A. stopping digoxin administration  
B. diuretic agents such as furosemide is used to improve excretion  
C. phenytoin administration  
D. atropine administration

E. lidocaine administration

34. which of the following disease is the contraindication of glucocorticoids?
- A. fulminant epidemic cerebrospinal meningitis
  - B. psychosis
  - C. diabetes mellitus
  - D. severe hypertension
  - E. B+C+D
35. Glucocorticoids can be used to treat severe bacterial infection. The reason is that
- A. they can act as good antimicrobials
  - B. they are able to enhance the immunity of organisms
  - C. they possess an anti-inflammatory and antitoxic actions
  - D. the phagocytic ability of neutrophils can be promoted by these agents
  - E. they produce a synergistic action with antibacterial drugs
36. which drug can inhibit  $\alpha$ -glycosidase
- A. gliclazide                      B. glipizide                      C. gliquidon
  - D. acarbose                      E. metformin
37. The primary site of action of the following drugs is(are)    E
- A. hydrochlorothiazide—thick ascending limb of Henle loop
  - B. triamterene—the distal segment of the nephron and as aldosterone antagonists
  - C. spironolactone—the cortex portion of the ascending limb
  - D. furosemide—the medulla portion of thick ascending limb
  - E. none of above is right
38. Which of the statements about thioureas is wrong?
- A. they are used in patients with hyperthyroidism
  - B. they inhibit synthesis of thyroxin
  - C. they have immunosuppressive effect
  - D. propylthiouracil stimulates T4 to transform to T3
  - E. they can cause thyroid enlargement when long term used
39. Which of the following statement about insulin is NOT true?
- A. It can cause hypoglycemic reaction
  - B. It cannot be administrated orally
  - C. Its mechanism of action is through intracellular receptor pathway
  - D. It can be used in IDDM and NIDDM
  - E. It can cause anaphylactic reaction(过敏性反应)
40. Which of the following therapies is the best for a patient with status asthmaticus (哮喘持续状态)?
- A. aminophylline p.o.
  - B. hydrocortisone i.v.
  - C. inhaling sodium cromoglycate
  - D. inhaling beclomethasone
  - E. salbutamol p.o.

41. In the following drugs, which has the longest  $t_{1/2}$ ?
- A. streptokinase      B. urokinase      C. t-type plasminogen activator  
D. anistreplase      E. abciximab
42. Which of the following statements is wrong ?
- A. Isoniazid readily penetrates cells and caseous tuberculous lesions  
B. Isoniazid can cause peripheral neuritis  
C. Isoniazid is an inducer of liver microsomal enzyme  
D. Rifampin is an inducer of liver microsomal enzyme  
E. Rifampin is primarily used in the treatment of tuberculosis
43. Which of the following group drugs is cell cycle specific agents
- A. 6-MP, 5-Fu, MTX, Nitrogen mustards  
B. 6-MP, 5-Fu, MTX, CTX(cyclophosphamide)  
C. 6-MP, 5-Fu, Ara-C, TSPA(thio-tepa)  
D. 6-MP, Ara-C, MTX, Vincristin  
E. 6-MP, 5-Fu, MTX, Mitomycin
44. Which of the following drugs may cause superinfections?
- A. penicillin G      B. streptomycin      C. erythromycin  
D. tetracycline      E. neomycin
45. The drug effective for deep-seated mycotic infections is
- A. amphotericin B      B. griseofulvin      C. polymyxin B  
D. sulfacetamide(磺醋酰胺)      E. amantadine
64. First choice for brucellosis(布鲁斯病) and rickettsia disease
- A. amikacin      B. doxycycline(强力霉素)      C. cyclophosphamide  
D. griseofulvin      E. vancomycin
47. The drug that can induce disulfiram-like reaction(戒酒硫反应) is
- A. metronidazole(甲硝唑)      B. sulfadiazine(磺胺嘧啶)      C. ciprofloxacin(环丙沙星)  
D. clindamycin(克林霉素)      E. azithromycin(阿齐红霉素)
48. The drug that is not effective for pseudomonas aeruginosa(绿脓杆菌) is
- A. carbenicillin(羧苄西林)      B. tetracyclines      C. netilmicin  
D. ciprofloxacin      E. ofloxacin(氧氟沙星)
49. Which of following drugs prevents synthesis of cell-wall, but does not belong in  $\beta$ -lactam antimicrobials
- B
- A. clavulanic acid      B. vancomycin      C. aztreonam(氨曲南)  
D. amdinocillin(亚胺青霉素)      E. amoxicillin
50. The patients with acute or chronic suppurative osteomyelitis can be given
- A. vancomycin      B. bacitracin(杆菌肽)      C. polymyxin  
D. clindamycin      E. rifampin

## Type X

51. Which of the following drugs can be used in treatment of diabetes insipidus(尿崩症) ?

A. atropine            B. hydrochlorothiazide    C. glibenclamide

D. triamterene        E. chlorpropamide

52. Which of the following would be expected in a severe case of organophosphate poisoning?

- A. salivation
- B. tremor of skeletal muscle
- C. dry skin
- D. bronchoconstriction
- E. coma

53. the elevated blood pressure caused by adrenaline can be reversed by

- A. prazosin            B. chlorpromazine    C. propranolol
- D. pirenzepine        E. phentolamine

54. You treat a patient with atropine, which of the following side effects would be endured?

- A. dry mouth
- B. tachycardia
- C. mydriasis
- D. urinary retention
- E. fever

55. Which of the following drugs may cause granulocytopenia?

- A. propylthiouracil    B. heparin            C. erythromycin
- D. ticlopidine        E. zidovudine

56. Which of the following drugs can be used in prevention of acute renal failure?

- A. furosemide            B. triamterene        C. mannitol
- D. dextran 40        E. ephedrine

57. The drugs that cannot be used in patient with bronchial asthma is(are)

- A. morphine            B. aspirin            C. propranolol
- D. dopamine            E. atropine

58. Which of the following drugs can cause extrapyramidal symptoms?

- A. metoclopramide(甲氧氯普胺)    B. ephedrine
- C. chlorpromazine            D. domperdone(多潘立酮)
- E. sodium phenytoin

59. Phenytoin can induce

- A. arrhythmia            B. antiepileptic effect        C. gingival hyperplasia



D. antipsychotic effect      E. megaloblastic anemia (巨幼红细胞性贫血)

60. Compared with heparin, which of the following statements about low molecular weight heparin are(is) true ?

- A. bleeding rate is lower
- B.  $t_{1/2}$  is shorter
- C. both effective in vivo and in vitro
- D. plasma protein binding rate is higher
- E. it will not cause thrombocytopenia completely

61. Which of the following drugs can be used in treatment of glaucoma?

- A. neostigmine                      B. mannitol                      C. pilocarpine
- D. spironolactone                      E. timolol

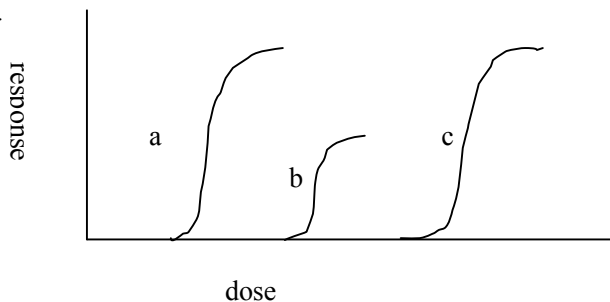
62. Which of the following drugs can cause ototoxicity?

- A. mannitol                      B. furosemide                      C. vancomycin
- D. gentamycin                      E. pyrimethamine(乙胺嘧啶)

63. Morphine can be used in treatment of

- A. asthmatic bronchitis
- B. headache
- C. serious simple diarrhea
- D. pain caused by cancer
- E. cardiac infarction and normal blood pressure

64.



In this graph, drugs b and c are analogs of drugs a, then

- A. a has a greater affinity than c
- B. b has less efficacy than c
- C. a has greater efficacy than c
- D. a has less efficacy than c
- E. c has greater affinity than b

65. Which of the following effects of digoxin can be seen in failure heart

- A. slowing sinus rhythm

- B. increasing the oxygen consumption of myocardia
- C. increasing the cardiac output
- D. increasing the force of myocardiac contraction
- E. all above

66. which of the following drugs can produce sedative effect?

- A. scopolamine
- B. atropine
- C. Phenobarbital
- D. diphenhydramine(苯海拉明)
- E. pethidine

67. Factor(s) affecting distribution of a drug include(s)

- A. binding of the drug to plasma proteins
- B. pH of body fluids
- C. blood brain barrier
- D. affinity to certain tissues
- E. pK<sub>a</sub> of the drug

68. The main side effects of aminoglycosides include:

- A. ototoxicity
- B. hypersensitivity
- C. nephrotoxicity
- D. hepatotoxicity
- E. N-M blockade

69. Please point out which drugs is(are) less toxic to bone marrow

- A. 5-FU
- B. Tamoxifen(他莫昔芬)
- C. hydroxyurea(羟基脲)
- D. VCR
- E. VLB

70. Metronidazole can be used in the treatment of

- A. amebic dysentery
- B. anaerobic bacterial infection
- C. trichomoniasis(滴虫病)
- D. actinomycosis(放线菌病)
- E. pseudomonas aeruginosa

PART II Please explain the following pharmacological terms

- 1. PA<sub>2</sub>
- 2. toxic reaction
- 3. first-order kinetics
- 4. placebo
- 5. chemotherapy
- 6. hepato-enteral circulation
- 7. tolerance
- 8. bioavailability
- 9. competitive antagonist
- 10. first-pass elimination

PART III Assay questions

1. Please describe the action and clinical uses of  $\beta$ -receptor antagonist.
2. Please discuss the mechanism of resistance of bacteria.
3. Please discuss the mechanism of morphine in treatment of cardiac asthma
4. Please discuss the mechanism of anti-shock action of glucocorticoids
5. Please compare the anticoagulative mechanism and characteristics of heparin and dicoumrin.

PART IV Question for choice

- \* Why is athlete banned from using diuretics in competition?

GOOD LUCK! GOOD LUCK! GOOD LUCK! GOOD LUCK! GOOD LUCK!