

## FINAL EXAM OF PHARMACOLOGY FOR 2001 EM STUDENTS(A)

2005-01-12

### PART I Choice Questions

Type A (only one answer is correct)

- The drugs that can pass across the blood brain barrier are
  - small in molecular weight and ionized drugs
  - small in molecular weight and nonionized drugs
  - large in molecular weight and ionized drugs
  - large in molecular weight and nonionized drugs
  - all of above are not true
- The mechanism of treating phenobarbital poisoning with bicarbonate sodium is that it
  - neutralizes phenobarbital
  - stimulates phenobarbital transference from the brain to the plasma
  - alkalinizes urine fluid, prevents phenobarbital from reuptaking, and stimulates excretion of drug
  - both B and C are right
  - both A and C are right
- A drug eliminated with first-order kinetics, the concentration of the drug in plasma is 100mg/L at 9 am after administration of a single dose, and at 6 pm the drug plasma concentration is 12.5 mg/L. So, its  $t_{1/2}$  is
  - 4h
  - 5h
  - 6h
  - 3h
  - 12h
- Aspirin is a weak acid with pKa of 3.5, what percentage of nonionized form will be in the stomach juice with pH of 2.5
  - 1%
  - 10%
  - 50%
  - 91%
  - 99%
- The maximal effect of a drug is called
  - potency
  - efficacy

- C. affinity
  - D. toxic effect
  - E. margin of safety
6. Which of the following drugs has the largest therapeutic index ?
- A. Drug A  $LD_{50}=150\text{mg}$ ,  $ED_{50}=100\text{mg}$
  - B. Drug B  $LD_{50}=100\text{mg}$ ,  $ED_{50}=50\text{mg}$
  - C. Drug C  $LD_{50}=250\text{mg}$ ,  $ED_{50}=100\text{mg}$
  - D. Drug D  $LD_{50}=300\text{mg}$ ,  $ED_{50}=50\text{mg}$
  - E. Drug E  $LD_{50}=300\text{mg}$ ,  $ED_{50}=150\text{mg}$
7. Which of the following drugs would be used to treat myasthenia gravis?
- A. atropine
  - B. neostigmine
  - C. acetylcholine
  - D. scopolamine
  - E. pilocarpine
8. Which of the following therapeutic projects would be used in the treatment of patient with serious organophosphate intoxication?
- A. Atropine + norepinephrine
  - B. Propantheline bromide + neostigmine
  - C. atropine + pralidoxime iodide
  - D. atropine + neostigmine
  - E. neostigmine + norepinephrine
9. All of the following are true concerning pilocarpine EXCEPT:
- A. decreasing the intraocular pressure of the eyes
  - B. accommodation of paralysis
  - C. accommodation of spasm
  - D. miosis
  - E. Stimulation of secretion of adenocyte after absorption
10. Which of the following drugs can increase the renal blood flow
- A. ephedrine
  - B. norepinephrine
  - C. dopamine
  - D. adrenaline
  - E. phenylephrine
11. Which of the following conditions is the contraindication of atropine
- A. intestinal spasm
  - B. sialorrhea
  - C. infective intoxication shock
  - D. glaucoma

- E. organophosphates intoxication
12. The intoxication of d-tubocurarine can be antagonized by
- A. atropine
  - B. adrenaline
  - C. neostigmine
  - D. dopamine
  - E. ephedrine
13.  $\beta$ -adrenoceptor antagonists can not be used in the treatment of
- A. hypertension
  - B. anginal pectoris
  - C. tachycardia
  - D. bronchial asthma
  - E. thyroid crisis
14. Which of the following drugs is a hepatic microsomal enzyme inhibitor?
- A. famotidine
  - B. propranolol
  - C. rifampicin
  - D. phenobarbital
  - E. chloramphenicol
15. The main route of inactivation of Ach is
- A. destroyed by MAO
  - B. destroyed by COMT
  - C. retaken into the cytoplasm
  - D. hydrolyzed by cholinesterase
  - E. A+B
16. The elevated blood pressure caused by adrenaline may be reversed by
- A. propranolol
  - B. chlorpromazine
  - C. ephedrine
  - D. mecamylamine
  - E. none of the above
17. Which of the following drugs can pass through the blood-brain barrier and cause insomnia ?
- A. adrenaline
  - B. dopamine
  - C. ephedrine
  - D. isoprenaline
  - E. norepinephrine
18. The aim of adding adrenaline into the local anesthetics is to

- A. contract the blood vessel and decrease the absorption of the local anesthetics
  - B. prevent the allergic reaction
  - C. prolong the time of action of the local anesthetics
  - D. A+C
  - E. eliminate fear and nervousness of the patient
19. Which of the following drugs can be used to treat cardiac asthma?
- A. isoprenaline
  - B. adrenaline
  - C. pethidine
  - D. hydrocortisone
  - E. ephedrine
20. All of the following adverse reactions about chlorpromazine are true EXCEPT
- A. dry mouth, constipation
  - B. orthostatic hypotension
  - C. drowsiness
  - D. tolerance and addiction
  - E. breast swelling and lactation
21. Which of the following is the drug of choice for the treatment of grand mal epilepsy?
- A. phenobarbital
  - B. phenytoin sodium
  - C. sodium valproate
  - D. carbamazepine
  - E. diazepam
22. Which of the following analgesic drugs can be used for artificial hibernation
- A. pethidine
  - B. morphine
  - C. anadol
  - D. methadone
  - E. fentanyl
23. If one patient is taking imipramine and another is taking chlorpromazine, they are both likely to experience
- A. akathisia
  - B. tardive dyskinesia
  - C. constipation and dry mouth
  - D. diarrhea
  - E. gynecomastia
24. A drug that can be used in the treatment of parkinsonism and also attenuate the reversible extrapyramidal side effects of chlorpromazine is
- A. amantadine

- B. levodopa
  - C. artane
  - D. bromocriptine
  - E. selegiline
25. The drug which has no anti-inflammatory action is
- A. indomethacin
  - B. acetaminophen
  - C. celecoxib
  - D. phenylbutazone
  - E. ibuprofen
26. Antiparkinsonism agents do not include
- A. amantadine
  - B. chlorpromazine
  - C. levodopa
  - D. artane
  - E. selegiline
27. The cardinal mechanism of antidepressant action of tricyclic agents is
- A. blockade of M-receptor in CNS
  - B. blockade of NE and 5-HT reuptake centrally
  - C. stimulation of reticular ascending activating system
  - D. blockade of  $\alpha$ -receptors
  - E. promoting release of 5-HT
28. 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
29. The mechanism of anti-hypertensive effect of losartan is
- A. decrement of renin activity
  - B. inhibition of angiotensin converting enzyme
  - C. blockade of the angiotensin II receptors
  - D. increment of kinin synthesis
  - E. causing vasodilation directly
30. Which of the following agents is the drug of choice for ventricular arrhythmia caused by cardiac glycoside ?
- A. lidocaine
  - B. amiodarone
  - C. propranolol

D. phenytoin sodium

E. quinidine

31. Among the following anti-hypertensive drugs, which can cause dry cough?

A. verapamil

B. captopril

C. losartan

D. propranolol

E. nifedipine

32. All of the following measures can be used in the treatment of digoxin-induced arrhythmia EXCEPT

A. stopping digoxin administration

B. diuretic agents such as furosemide are used to promote the excretion of digoxin

C. phenytoin administration

D. atropine administration

E. lidocaine administration

33. Which of the following drugs can be used in the treatment of patient with atrioventricular block?

A. adrenaline

B. noradrenaline

C. isoprenaline

D. aramine

E. propranolol

34. Which of the following is the drug of choice for the hypertensive patient with heart failure ?

A.  $\alpha$ -methyldopa

B. captopril

C. hydralazine

D. minoxidil

E. nifedipine

35. The patients with bronchial asthma can not be given

A. adrenaline

B. ephedrine

C. aspirin

D. theophylline

E. salbutamol

36. Which of the following drugs is a HMG-CoA reductase inhibitor?

A. cholestyramine

B. clofibrate

C. nicotinic acid

- D. lovastatin
  - E. probucol
37. All of the following statements about amiodarone are true EXCEPT
- A. it increases APD and ERP
  - B. it suppresses premature ventricular contraction and ventricular tachycardia
  - C. it blocks  $\alpha$  and  $\beta$  -adrenoreceptors
  - D. it can cause hyper- or hypothyroidism
  - E. it is a  $\text{Na}^+$  channel blocker
38. Which one of the following drugs can be used to treat cretinism?
- A. methylthiouracil
  - B. propylthiouracil
  - C. methimazole (tapazole)
  - D. carbimazole
  - E. thyroxin
39. All of the following are indications of glucocorticoids EXCEPT
- A. rheumatic arthritis
  - B. bronchial asthma
  - C. peptic ulcer
  - D. endotoxic shock
  - E. childhood acute leukemia
40. Which one of the following statements about heparin is true ?
- A. Mild anticoagulative effect
  - B. Slow onset of effect
  - C. No anticoagulative effect in vitro
  - D. Possessing anticoagulative effect in vitro
  - E. It can be administrated orally
41. Under which of the following conditions is mannitol contraindicated ?
- A. glaucoma
  - B. chronic heart failure
  - C. oliguria caused by shock
  - D. acute renal failure
  - E. edema
42. Which of the following 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 the transform of  $\text{T}_4$  to  $\text{T}_3$
  - E. they can cause thyroid enlargement when used for a long time
43. The antiplatelet mechanism of aspirin is

- A. inhibiting synthesis of TXA<sub>2</sub> in platelet
  - B. inhibiting synthesis of TXA<sub>2</sub> in endothelium
  - C. promoting synthesis of PGI<sub>2</sub> in platelet
  - D. promoting synthesis of PGI<sub>2</sub> in endothelium
  - E. promoting synthesis of PGE<sub>2</sub> in endothelium
44. Which of the following mechanisms best accounts for the anti-thyroid effect of methylthiouracil ?
- A. inhibiting peroxidase and decreasing the thyroxin synthesis
  - B. inhibiting the thyroid releasing
  - C. inhibiting the absorption of iodine
  - D. interfering with the utilization of iodine
  - E. decomposing the thyroxin
45. Which of the following drugs is the drug of choice for the treatment of osteomyelitis caused by G<sup>+</sup> bacteria ?
- A. penicillin
  - B. polymyxin B
  - C. chloramphenicol
  - D. clindamycin
  - E. ciprofloxacin
46. The most effective drug for the treatment of trichomonas vaginalis is
- A. metronidazole
  - B. acetarsol
  - C. tinidazole
  - D. mebendazole
  - E. albendazole
47. Which drug is the first choice used in diabetes mellitus(DM) accompanied with renal dysfunction?
- A. tolbutamide(甲苯磺丁脲)
  - B. chlorpropamide(氯磺丙脲)
  - C. glibenclamide(格列苯脲)
  - D. glipizide(格列吡嗪)
  - E. gliquidon(格列喹酮)
48. 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 hepatic microsomal enzyme
  - D. rifampicin is an inducer of hepatic microsomal enzyme
  - E. rifampicin is primarily used in the treatment of tuberculosis
49. Which of the following statements about the mechanism of action of antibiotics is



most accurate?

- A. aminoglycosides bind to receptors on the 50s ribosomal subunit to prevent attachment of aminoacyl-tRNA
  - B. cephalosporins inhibit the synthesis of precursor of the linear peptidoglycan chain of the cell wall
  - C. fluoroquinolones inhibit DNA-dependent RNA polymerase
  - D. the bactericidal action of penicillin is partly due to their activation of autolytic enzymes
  - E. vancomycin inhibit peptidyl transferases involved in cell wall synthesis
50. Which of the following antineoplastic drugs act on S stage of cell proliferation?
- A. 6-MP, 5-FU, MTX, Nitrogen mustards
  - B. 6-MP, 5-FU, MTX, Cyclophosphamid
  - C. 6-MP, 5-FU, Mitomycin, Vincristin
  - D. 5-FU, Ara-C, Vincristin, TSPA(thiotepa)
  - E. 6-MP, Ara-C, MTX, HU

### **Type X**

51. Which of the following drugs can induce disulfiram-like reactions ?
- A. cefoperazone
  - B. sulfadiazine
  - C. metronidazole
  - D. clindamycin
  - E. azithromycin
52. A young woman suffering from urinary tract infection caused by a G<sup>-</sup> rod can be given
- A. penicillin G
  - B. vancomycin
  - C. gentamicin
  - D. pipemidic acid
  - E. erythromycin
53. Thiazide diuretics can be used in the treatment of
- A. Hypertension
  - B. congestive heart failure
  - C. hypercalcemia
  - D. glaucoma
  - E. diabetes insipidus
54. Which of the following drugs can be used in prevention of acute renal failure?
- A. furosemide
  - B. triamterene

- C. mannitol
  - D. dextran 70
  - E. ephedrine
55. Which of the following drugs can cause ototoxicity?
- A. mannitol
  - B. furosemide
  - C. vancomycin
  - D. gentamicin
  - E. cefaclor
56. 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. pKa of the drug
57. Which of the following drugs can be used in treatment of glaucoma?
- A. pilocarpine
  - B. mannitol
  - C. timolol
  - D. acetazolamide
  - E. spironolactone
58. Which of the following drugs is useful in treating diabetes mellitus after the excision of pancreas?
- A. Tolbutamide
  - B. Phenformin
  - C. Glibenclamide
  - D. Insulin
  - E. Gliclazide
59. Drugs that are effective on pseudomonas aeruginosa infection are
- A. carbencillin
  - B. SD-Ag
  - C. netilmicin
  - D. ciprofloxacin
  - E. amoxicilin
60. 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 myocardial contraction force

E. negative chronotropic action

**PART II Please explain the following pharmacological terms (10 points)**

1. bioavailability
2. competitive antagonist
3. first-pass elimination
4. Superinfection
5. post antibiotic effect

**PART III Assay Questions (30 points)**

1. Please describe the pharmacological action of atropine (6)
2. Why are the ACEI used as regular therapeutic drugs in the treatment of CHF at present? (6)
3. Please describe the action and clinical uses of  $\beta$ -receptor antagonist (6) .
4. Please give your advice when treating a patient with septic shock caused by G<sup>-</sup> rods. (6)
5. Please compare the characteristics of four generations of cephalosporins.(6)

**GOOD LUCK GOOD LUCK GOOD LUCK GOOD LUCK GOOD LUCK**

