

FINAL EXAM OF PHARMACOLOGY FOR 2000 EM STUDENTS (A)

2003-12-31

PART I Choice Questions

Type A (only one answer is correct)

1. Antagonist has
 - A. affinity for receptors but no intrinsic activity
 - B. no both affinity and intrinsic activity
 - C. affinity and weak intrinsic activity
 - D. affinity and low efficacy
 - E. high affinity and efficacy
2. A drug eliminates with first-order kinetics. If the concentration of the drug in plasma is 200mg/L at 10 o'clock in the morning after administration of a single dose and 25 mg/L at 10 o'clock on second day morning, then its $t_{1/2}$ is
 - A. 4h
 - B. 6h
 - C. 12h
 - D. 10h
 - E. 8h
3. After repeated administration of phenobarbital sodium, the patients complain the drug is less useful, this phenomenon is called
 - A. tolerance
 - B. resistance
 - C. dependence
 - D. side reaction
 - E. residual effect
4. The mechanism of treating phenobarbital poisoning with bicarbonate sodium is that it
 - A. neutralize phenobarbital
 - B. stimulates Phenobarbital transference from the brain to the plasma
 - C. alkalizes urine fluid, prevent Phenobarbital from re-uptaking, and stimulates excretion of drug
 - D. both B and C are right
 - E. both A and C are right
5. Property of a partial agonist is
 - A. high affinity and high intrinsic activity
 - B. low affinity and low intrinsic activity
 - C. high affinity and low intrinsic activity
 - D. low affinity and high intrinsic activity
 - E. high affinity and no intrinsic activity
6. When presynaptic α -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. Which of the following drugs is a hepatic microsomal enzyme inhibitor?
- A. Famotidine
 - B. Propranolol
 - C. Quinidine
 - D. Phenobarbital
 - E. Chloramphenicol
8. In alkalinized urine fluid, aspirin will be
- A. More ionized, less reabsorbed, excreted fast
 - B. Less ionized, less reabsorbed, excreted fast
 - C. More ionized, more reabsorbed, excreted slowly
 - D. More ionized, more reabsorbed, excreted fast
 - E. More ionized, less reabsorbed, excreted slowly
9. A weak acidic drug with 4.4 of pKa, if the stomach juice pH is 1.4, plasma pH is 7.4, when the distribution balance is reached, the drug concentration ratio between plasma and stomach juice is
- A. 100
 - B. 101
 - C. 1001
 - D. 10000
 - E. 0.01
10. The main route of inactivation of Ach is that
- A. it is destroyed by MAO
 - B. it is destroyed by COMT
 - C. it is retaken into the cytoplasm
 - D. it is hydrolyzed by cholinesterase
 - E. A+B
11. 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. atropine + morphine
12. Therapeutic action for propranolol dose not include
- A. atrial fibrillation
 - B. thyrotoxicosis(甲状腺毒症)
 - C. hypertension
 - D. congestive heart failure
 - E. variant angina
13. The intoxication of tubocurarine can be antagonized by
- A. atropine
 - B. adrenaline
 - C. neostigmine
 - D. dopamine

- E. ephedrine
14. 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
15. Epinephrine is used in local anesthetic solution in order to
- A. offset arrhythmic effect on the heart
 - B. increase the potency of the local anesthetic
 - C. offset negative inotropic actions on the heart
 - D. reduce the rate of absorption of the local anesthetic and prolong its duration
 - E. all of them
16. Select the incorrect statement regarding to ephedrine
- A. It produces stimulation of CNS
 - B. It acts in part by releasing catecholamines
 - C. It is longer acting than adrenaline
 - D. It's action is weaker than adrenaline
 - E. It's ineffective by the oral route
17. The effect of pilocarpine on eye is
- A. miosis and increase intraocular pressure
 - B. miosis and decrease intraocular pressure
 - C. mydriasis and decrease intraocular pressure
 - D. mydriasis and increase intraocular pressure
 - E. none of above
18. Which of the following adrenomimetics used in the treatment of shock can increase cardiac output and renal blood flow?
- A. norepinephrine
 - B. epinephrine
 - C. dopamine
 - D. phenylephrine
 - E. methoxamine
19. The elevated blood pressure caused by adrenaline may be reversed by
- A. propranolol
 - B. cholpromazine
 - C. ephedrine
 - D. mecamlamine
 - E. none of above
20. Which of the following antishock drugs seldom leads to arrhythmia and anuria
- A. phenylephrine
 - B. aramine
 - C. ephedrine
 - D. methoxamine
 - E. adrenaline

21. Atropine has the following effects except
- mydriasis
 - spasm of accommodation
 - increase intraocular pressure
 - decrease salivary secretion
 - stimulation of CNS in larger dose
22. All of the following statements of succinylcholine are true except that
- it is depolarizing skeletal muscle relaxants
 - it can increase blood potassium
 - it can cause fasciculation in the beginning
 - it cause serious adverse reaction to agenetic pseudo-chE low patients
 - the intoxication of it can be antagonized by neostigmine
23. All of the following statements about the action of phenylephrine are true except
- that it is weaker than NE in decreasing the renal blood flow
 - that it is stonger than NE in decreasing the renal blood flow
 - mydriasis
 - it does not enhance the intraocular pressure
 - it can be used to examine retina by its action of mydriasis
24. Phentolamine can be used in the following conditions except
- peripheral vasospasmatic disorders
 - shock
 - tachycardia
 - diagnosis of pheochromocytoma
 - male sexual dysfuction
25. L-dopa can be used to treat the patients with
- depression
 - insomnia
 - anxiety
 - hepatic coma
 - schizophreniae(精神分裂症)
26. the main reason for the combination use of levodopa with carbidopa is
- to increase the absorption of L-dopa
 - to inhibit levodopa decarboxylation in the periphery
 - to inhibit MAO
 - to inhibit COMT
 - to increase L-dopa converting to dopamine directly
27. which of the following statements about phenytoin is NOT true?
- It has a sedative effect
 - it can be used for patients with epilepsy
 - it can be used to treat patients with arrhythmia
 - it can be used to manage patients with trifacial neuralgia
 - it can cause gingival hyperplasia
28. A drug that can be used in the treatment of parkinsonism and that will also attenuate revesible extrapyramidal side effects of chlorpromazine is
- amantadine
 - levedopa
 - bromocriptine
 - trihexyphenidyl
 - selegiline
29. Which of the following drugs is the drug of choice for the treatment of grandmal of

epilepsy?

- A. primidone B. phenytoin C. ethosuximide
D. corticosteroids E. Phenobarbital
30. To relieve anxiety symptoms, we usually use
A. Phenobarbital B. perphenazine C. chlorpromazine
D. imipramine E. benzodiazepines
31. Which is the first choice for status epilepticus(癫痫持续状态)?
A. magnesium sulfate B. carbamazepine C. ethosuximide
D. diazepam E. none of the above
32. Which of the following drugs is contradicated in the patients with epilepsy?
A. phenbarbital B. diazepam C. chlorpromazine
D. imipramine E. carbamazepine
33. In all of the following side effects of chlorpromazine, which can be aggravated by artane ?
A. akathisia B. parkison's syndrome C. acute diatonia
D. tardive dyskinesia E. postural hypotension
34. The main cause of death of the patient with acute Phenobarbital poisoning is
A. Convulsion B. Renal failure
C. Severe respiratory depression D. Cardiac arrest
E. Severe hypotension
35. The drug of choice to treat trigeninal neuralgia (三叉神经痛) is
A. phenobarbital
B. diazepam
C. chlorpromazine
D. ethosuximide
E. carbamazepine
36. In the following statements about benzodiazepines, which is incorrect?
A. they can induce tolerance after long time use
B. they can induce extrapyramidal symptoms
C. they can excreted through milk
D. they can cause respiration depression in large dose
E. they can also cause muscle relaxation
37. Morphine can NOT be used in treatment of
A. asthmatic bronchitis
B. cardiac asthma
C. serious simple diarrhea
D. pain caused by cancer
E. cardiac infarction with normal blood pressure
38. Which of the following drugs has the strongest analgesic effect?
A. fentanyl B. morphine C. pethidine
D. methadone E. pentazocine
39. A patient with fever as well as peptic ulcer should use
A. aspirin B. acetaminophen C. phenylbutazone
D. indomethacin E. ibuprofen

40. In the following anti-hypertension drugs, which can cause dry cough?
- A. verapamil B. captopril C. losartan
D. propranolol E. nifedipine
41. Which of the followings is NOT the characteristics of ACEI?
- A. it can be used in mild, moderate and severe hypertension
B. it doesn't cause reflective quick heart rate
C. it may cause electrolytes disorder
D. it will not cause disorder of lipid metabolism
E. it can reverse myocardial thickening
42. Verapamil decreases conduction velocity in
- A. atrial muscle B. A-V node C. Purkinje fibers
D. ventricular muscle E. all of them
43. In which of the following drugs orthostatic hypotension occurs most frequently in first use
- A. clonidine B. nifedipine C. propranolol
D. methyldopa E. prazosin
44. The best drug used to treat ventricular premature beats and paroxysmal ventricular tachycardia is
- A. propranolol B. digitoxin C. quinidine
D. lidocaine E. verapamil
45. 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 cocentration in the blood
46. 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 Na⁺ channel
47. 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 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
48. All of the following measures can be used in the treatment of digoxin-induced arrhythmias EXCEPT
- A. stopping digoxin administration
B. diuretic agents such an furosemide is used to improve excretion
C. phenytoin administration
D. atropine administration

- E. lidocaine administration
49. The mechanism of Positive myodynamial action of cardiac glycoside is due to
- A. exciting vagus nerve.
 - B. exciting sympathetic nerve
 - C. activating $\text{Na}^+ - \text{K}^+ - \text{ATPase}$
 - D. inhibiting $\text{Na}^+ - \text{K}^+ - \text{ATPase}$
 - E. inhibiting $\text{Na}^+ - \text{Ca}^{2+}$ exchange
50. Which diuretic is unwisely used in patient with edema using streptomycine,?
- A. osmotic diuretics
 - B. thiazide diuretics
 - C. loop diuretics
 - D. aldosterone antagonists
 - E. triamterone and amilorde
51. Which of the following drugs can result in hyperthyroidism?
- A. propaferone
 - B. propranolol
 - C. verapamil
 - D. aminodarone
 - E. lidocaine
52. 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)
53. Which of the following statement about insulin is NOT true?
- A. it can cause hyperglycemic reaction
 - B. it can cause insulin tolerance
 - C. it can be used in IDDM and NIDDM
 - D. its mechanism of action is through intracellular receptor pathway
 - E. it can cause anaphylactic reaction
54. Hydrochlorothiazide can be used in the following indications except
- A. cardiac edema
 - B. idiopathic hypercalciurea
 - C. hyperuricemia
 - D. hypertension
 - E. hepatic edema
55. Which of the following drugs can protect gastric mucosa and eliminate helicobacter pylori?
- A. Proglumide(丙谷胺)
 - B. colloidal bismuth subcitrate(枸橼酸铋钾)
 - C. omeprazole
 - D. cimetidine

- E. sucralfate
56. 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. they can cause thyroid enlargement when long term used
 - E. propylthiouracil stimulates T4 to transform to T3
57. All of the following statements about furosemide are true except
- A. potent diuretic effect, rapid onset of effect
 - B. reducing renal vascular resistance
 - C. poor absorption following oral administration, low bioavailability
 - D. dilating small arteries
 - E. usually used to treat severe edema
58. Which of the following drugs is the selective β_2 -receptor agonist that can be administrated subcutaneously?
- A. adrenaline
 - B. isoprenaline
 - C. salbutamol
 - D. terbutaline
 - E. clenbuterol
59. The most proper indication of erythropoietin is
- A. pernicious anemia
 - B. Severe aplastic anemia
 - C. myelodysplasia
 - D. anemia result from chronic renal failure
 - E. zidovudine-induced anemia
60. Which of the following drugs can be used to treat AIDS?
- A. Aciclovir(阿昔洛韦)
 - B. zidovudine
 - C. ribavirin
 - D. idoxuridine(碘苷)
 - E. vidarabine(阿糖腺苷)
61. The patients with acute or chronic suppurative osteomyelitis can be given
- A. vancomycin
 - B. bacitracin(杆菌肽)
 - C. polymyxin
 - D. clindamycin
 - E. rifampin
62. Which of the following statements is wrong ?
- A. isoniazid readily penetrates cells and caseous tuberculous lesions
 - B. isoniazid can cause peripheral neuritis
 - C. rifampin is primarily used in the treatment of tuberculosis
 - D. rifampin is a inducer of liver microsomal enzyme
 - E. mycobacteria of tuberculosis readily resists to Ethambutol
63. Which of the following antineoplastic drugs can cause pulmonary fibrosis?
- A. fluorouracil(5-FU)
 - B. methotrexate(MTX)
 - C. cytarabine(Ara-C)
 - D. bleomycin(BLM)
 - E. vincristin(VCR)

64. Which of the following agent is mainly used for Herpes Simplex Virus infection?

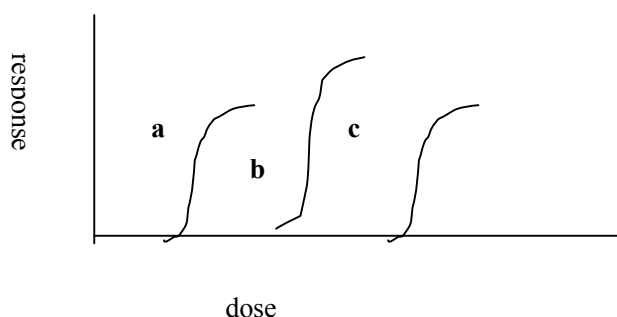
- A. γ -interferon B. amantadine C. Idoxuridine
D. aciclovir E. ribavirin

65. The antibiotics which are potent against the pseudomonas aeruginosa are

- A. gentamicin and ampicillin
B. gentamicin,tobramycin and carbenicillin
C. kanamycin and chloramphenicol
D. Polymyxins and streptomycin
E. methicillin and cefazolin

Type x

1.



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

- A. a has a greater affinity than c
B. b has greater efficacy than c
C. a has less efficacy than b
D. a has greater efficacy than c
E. b has a greater affinity than c
2. If the plasma concentration of a drug declines with “first-order kinetics”, it means that
- A. There is only one metabolic path for drug disposition
B. The half-life is the same regardless of plasma concentration
C. The drug is largely metabolized in the liver after oral administration and has low bioavailability
D. The rate of elimination is proportional to the plasma concentration
E. the metabolic ability has reached saturation.
3. Factor(s) affecting distribution of a drug include(s)
- A. pKa of the drug
B. pH of body fluids
C. blood brain barrier
D. affinity to certain tissues
E. binding of the drug to plasma proteins
4. Antibiotics that act by interfering with protein synthesis include
- A. tetracycline B. streptomycin
C. chloramphenicol D. ampicillin E. azithromycin
5. Which is(are) the effective agent against pseudomonas aeruginosa among the following

drugs

- A. gentamicin B. carbenicillin
C. polymyxine D. Ampicillin E. vancomycin
6. Metronidazole can be used in the treatment of
A. amebic dysentery B. anaerobic bacterial infection
C. trichomoniasis(毛滴虫病) D. H.p infection E. Giardiasis(贾第虫病)
7. In chemotherapy of neoplastic disease, cell cycle-specific agents which will kill cell in S phase is(are)
A. methotrexate(MTX) B. vincristine and vinblastine
C. 6-mercaptopurine(6-MP) D. 5-FU E. Cyclophosphamide(环磷酰胺)
8. The major toxicity and side effects of aminoglycosides is(are)
A. ototoxic and nephrotoxic reaction B. cardiovascular toxicity
C. neuromuscular blocking effect D. tooth damage
E. damage growing cartilage and cause arthropathy(关节病)
9. Which of the following drugs may cause neutrocytopenia significantly ?
A. urokinase
B. ticlopidine
C. aminophylline
D. heparin
E. propylthiouracil(丙硫氧嘧啶)
10. Compared with heparin, which of the following statements about low molecular weight heparin are(is) true ?
A. anticoagulant action is weaker
B. $t_{1/2}$ is shorter
C. anti-thrombosis effect is stronger
D. plasma protein binding rate is lower
E. it will not cause thrombocytopenia completely
11. Which of the following drugs can be used to treat patient with diabetes insipidus?
A. Furosemide
B. Acetazolamide
C. Hydrochlorothiazide
D. Antisterone
E. Chlorpropamide (氯磺丙脲)
12. Which can be used in treatment of acute myocardial infarction?
A. warfarin
B. heparin
C. tissue plasminogen activator
D. P-aminomethybenzoic acid
E. nitroglycerin
13. Which of the following agent(s) is(are) contraindicated in anaphylactic asthma?
A. morphine B. neostigmine C. propranolol
D. atropine E. aspirin
14. Which of the following drugs can be used in treatment of glaucoma?
A. pilocarpine

- B. mannitol
 - C. timolol
 - D. acetazolamide
 - E. spironolactone
15. Which is correct description about the β -adrenoceptor effect?
- A. both cardiac excitation and bronchial dilation belong to β_1 effect
 - B. both cardiac excitation and bronchial dilation belong to β_2 effect
 - C. both cardiac excitation and vascular dilation belong to β_1 effect
 - D. both cardiac excitation and vascular dilation belong to β_2 effect
 - E. both vascular dilation and bronchial dilation belong to β_2 effect
16. What is (are) the pharmacological characteristics of scopolamine?
- A. CNS depression
 - B. anti-motion effect
 - C. anti-Parkinsonism
 - D. the effects on gland are stronger than atropine
 - E. the effects on eye are stronger than atropine
17. Scopolamine is contraindicated in patients with
- A. glaucoma
 - B. prostataxe (prostatic hypertrophy)
 - C. organophosphorus poisoning
 - D. infectious shock
 - E. parkinsonism
18. The reason for the epinephrine in the treatment of allergic shock induced by penicillins is (are)
- A. cardiac stimulation
 - B. vasoconstriction to increase blood pressure
 - C. reduce the release of allergic substance
 - D. bronchial dilation
 - E. improve microcirculation
19. When you treat a patient with atropine, which of the following side effects will be have to endure?
- A. dry mouth
 - B. tachycardia
 - C. mydriasis
 - D. gastric and urinary retention
 - E. symptom of CNS depression
20. Which is(are) the indication(s) of cardiac glycoside?
- A. acute heart failure
 - B. chronic heart failure
 - C. atrial fibrillation
 - D. ventricular fibrillation
 - E. atrioventricular block
21. Which of the following disease is the contraindication of glucocorticoids?
- A. fulminant epidemic cerebrosonial meningitis

- B. psychosis**
- C. diabetes mellitus**
- D. severe hypertension**
- E. allergic shock**

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

- 1. pA₂**
- 2. first-pass elimination**
- 3. hepato-enteral circulation**
- 4. superinfection**
- 5. tachyphylaxis**

PART III Assay questions: (30 points)

- 1. Please describe the anti-inflammatory mechanism of glucocorticoids.(6)**
- 2. Please describe the characteristics of three generations of cephalosporins.(6)**
- 3. Please describe the antianginal action of nitroglycerin and β -blockers respectively and explain the advantage of the combination use of them.(12)**
- 4. Please explain the adverse reactions of aspirin.(6)**