

# Final Exam of Pharmacology for 7-YMS-2001(A)

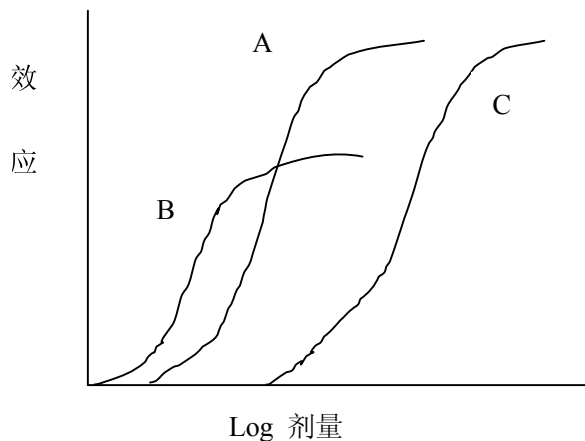
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## **PART I Choice Questions(50 points)**

### *Type A (30 points)*

1. 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
2. When presynaptic  $\alpha_2$ -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
3. Which of the following drugs is a hepatic microsomal enzyme inhibitor?
  - A. Famotidine
  - B. Propranolol
  - C. Quinidine
  - D. Phenobarbital
  - E. Chloramphenicol
4. 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
5. Among the following statements which one is true concerning drugs classified as noncompetitive antagonist
  - A. They will make the dose effect curve of agonist shift to right parallelly
  - B. They generally bind to the receptors through covalent bonds
  - C. Dissociation constants of the antagonists for the receptors are times higher than dissociation constants for the agonists
  - D. "Spare" receptors are unaffected by these agents
  - E. They bind to the receptors at different sites as the agonist binding sites
6. Which of the following administrations would immediately reach the plateau concentration
  - A. Decreasing dose and increasing times of administration

- B. Decreasing administering interval
  - C. Increasing administering interval
  - D. Administration of loading dose
  - E. Frequent administration by iv
7. The pharmacological mechanism of side action is
- A. overdose
  - B. low in selectivity
  - C. hypersensitivity
  - D. administration of drug for a long time
  - E. low in patient's liver and kidney function
- 8.



- In this graph, drugs A, B and C are analogs, then
- A. A has a greater potency than B
  - B. A has a greater efficacy than C
  - C. B has less potency than C
  - D. A has a greater potency than C
  - E. B has a greater efficacy than C
9. Therapeutic action for propranolol dose NOT INCLUDE
- A. atrial fibrillation
  - B. A-V block
  - C. hypertension
  - D. peripheral vasospastic disorders
  - E. variant angina
10. The effect of pilocarpine on eye is
- A. miosis , increase intraocular pressure, accommodation of paralysis
  - B. miosis , decrease intraocular pressure, accommodation of spasm
  - C. mydriasis , decrease intraocular pressure, accommodation of paralysis
  - D. mydriasis , increase intraocular pressure, accommodation of spasm
  - E. none of above
11. 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
12. Which of the following drugs seldom leads to arrhythmia and anuria
- A. phenylephrine
  - B. aramine
  - C. noradrenaline
  - D. methoxamine
  - E. adrenaline
13. All of the following statements of succinylcholine are true EXCEPT that
- A. it is depolarizing skeletal muscle relaxants
  - B. it can increase blood potassium
  - C. it can cause fasciculation in the beginning
  - D. it cause serious adverse reaction to agenetic pseudo-chE low patients
  - E. the intoxication of it can be antagonized by neostigmine
14. The correct statement about ephedrine is that
- A. excitation of CNS is very weak
  - B. influence on metabolism is strong
  - C. it can produce tachyphylaxis
  - D. it is only administered by iv
  - E. it is  $\alpha$  agonist
15. The intoxication of tubocurarine can be antagonized by
- A. atropine      B. adrenaline      C. neostigmine
  - D. dopamine      E. phedrine
16. Patients with myasthenia gravis are more effectively treated with
- A. physostigmine (毒扁豆碱)
  - B. edrophonium chloride (依酚氯铵)
  - C. neostigmine
  - D. atropine
  - E. pilocarpine
17. scopolamine is able to
- A. stimulate  $N_1$ -receptor directly
  - B. stimulate  $N_2$ -receptor directly
  - C. stimulate M-receptor directly
  - D. inhibit acetylcholinesterase
  - E. stimulate choline acetyltransferase
18. the main reason for the combination use of levodopa with carbidopa is
- A. to increase the absorption of L-dopa
  - B. to inhibit levodopa decarboxylation in the periphery
  - C. to inhibit MAO
  - D: to inhibit COMT
  - E. to increase L-dopa converting to dopamine directly
19. A drug that can be used in the treatment of parkinsonism and that will also attenuate

reversible extrapyramidal side effects of chlorpromazine is

- A. amantadine (金刚烷胺)      B. levedopa      C. bromocriptine (溴隐亭)  
D. trihexyphenidyl (苯海索)      E. selegiline
20. 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
21. In all of the following side effects of chlorpromazine, which can be aggravated by artane (安坦) ?  
A. akathisia (静坐不能)      B. parkison's syndrome      C. postural hypotension  
D. tardive dyskinesia (迟发性运动障碍)      E. acute dystonia (急性肌张力障碍)
22. 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
23. A patient with fever as well as peptic ulcer should use  
A. aspirin      B. acetaminophen      C. phenylbutazone  
D. indomethacin      E. ibuprofen
24. The drug of choice to treat trigeminal neuralgia(三叉神经痛) is  
A. nitrazepam      B. carbamazepine      C. Phenobarbital  
D. ethosuximide      E. primidone
25. which of the following statements about phenytoin is NOT true  
A. has a sedative effect  
B. can be used for patients with epilepsy  
C. can be used to treat patients with arrhythmia  
D. can be used to manage patients with trifacial neuralgia  
E. can cause gingival hyperplasia
- 26.the drug which is effective in treatment of absence seizures is  
A. phenytoin      B. Phenobarbital      C. ethosuximide  
D. primidone      E. valproic acid
- 27.Which one of the following analgesic drugs can be used for artificial hibernation  
A. morphine      B. anadol      C. methadone  
D. pethidine      E. fentanyl
28. Verapamil decreases conduction velocity in  
A. atrial muscle      B. A-V node      C. Purkinje fibers  
D. ventricular muscle      E. all of them
29. 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
- 30.Which one of the following drugs could result in thyroidism or hypothyroidism?

- A. Propafenone                      B. Lidocaine                      C. Propranolol  
D. Verapamil                      E. Amiodarone
31. Which one of the following drugs is most suitable in treating exertional angina pectoris with hypertension and tachyarrhythmia?  
A. Sodium nitroprusside              B. Propranolol              C. Isosorbide dinitrate  
D. Captopril                      E. Nifedipine
32. Lovastatin is mainly used to treating  
A. diabetes                      B. arrhythmia                      C. hypertension  
D. angina pectoria              E. hypercholesterolemia
33. 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
34. 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
35. 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)
36. Hydrochlorothiazide can be used in the following indications EXCEPT  
A. cardiac edema  
B. idiopathic hypercalciurea  
C. hyperuricemia  
D. hypertension  
E. hepatic edema
37. 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
38. Which one of the following drugs can inhibit  $\text{H}^+ - \text{K}^+ - \text{ATPase}$ , and decrease the secretion of gastric acid?  
A. Ranitidine                      B. Pirenzepine                      C. Omeprazole

- D. Sucralfate                      E. cisapride
39. All of the following are indications of glucocorticoids EXCEPT
- A. toxic shock                      B. rheumatic arthritis                      C. peptic ulcer  
D. bronchial asthma                      E. aplastic anemia
40. 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  $T_4$  to transform to  $T_3$
41. the antiplatelet mechanism of aspirin is
- A. inhibiting synthesis of  $TXA_2$  in platelet  
B. inhibiting synthesis of  $TXA_2$  in endothelium  
C. promoting synthesis of  $PGI_2$  in platelet  
D. promoting synthesis of  $PGI_2$  in endothelium  
E. None of above is true
42. Which one of the following drugs is antikaliuretic agents?
- A. antisterone                      B. furosemide                      C. bumetanide  
D. chlorothiazide                      E. indapamide
43. Which of the following drugs can be used to treat AIDS?
- A. Aciclovir(阿昔洛韦)                      B. zidovudine                      C. ribavirin  
D. idoxuridine(碘昔)                      E. vidarabine(阿糖腺苷)
44. 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
45. 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
46. a patient with typhus can be given
- A. streptomycin                      B. doxycycline                      C. sulfadiazine  
D. ampicillin                      E. erythromycin
47. Which of the following drugs is the first choice in treating mycoplasma pneumonia?
- A. tetracycline                      B. penicillin                      C. ofloxacin  
D. amikacin                      E. erythromycin
48. A drug that inhibits DNA-dependent RNA polymerase and can be used to treat patients with tuberculosis is
- A. isoniazid                      B. streptomycin                      C. rifampin  
D. ethambutol                      E. ciprofloxacin

49. the major adverse effect of chloramphenicol is
- A. ototoxicity                      B. GI tract reaction                      C. blood dyscrasias  
D. renal toxicity                      E. hepatic necrosis
50. which of the following statements about chemotherapeutic index(CI) is true ?
- A. a drug with great CI possesses great toxicity and low potency.  
B. a drug with great CI possesses less toxicity and low potency.  
C. a drug with great CI possesses less toxicity and high potency.  
D. a drug with low CI possesses great toxicity and high potency.  
E. a drug with low CI possesses less toxicity and low potency.

*Type X(20 points)*

51. Which of the following drugs is (or are) contraindicated in the patients with epilepsy?
- A. phenobarbital                      B. diazepam                      C. chlorpromazine  
D. imipramine                      E. glucocorticoids
52. Which of the following statements about furosemide are true?
- 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
53. Antibiotics that act by interfering with protein synthesis include
- A. tetracycline                      B. streptomycin  
C. chloramphenicol                      D. ampicillin                      E. azithromycin
54. In chemotherapy of neoplastic disease, cell cycle-specific agents which will kill cell in S phase is(are)
- A. MTX                      B. vincristine (长春新碱)  
C. 6-MP                      D. Cyclophosphamide(环磷酰胺)                      E. 5-FU
55. Which of the following drugs may cause nephrotoxicity ?
- A. vancomycin                      B. cefazolin  
C. gentamicin                      D. ceftazidime                      E. amphotericin B
56. 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
57. Which can be used in treatment of acute myocardial infarction?
- A. warfarin  
B. heparin  
C. tissue plasminogen activator  
D. P-aminomethybenzoic acid  
E. nitroglycerin
58. Which of the following drugs can be used in treatment of glaucoma?

- A. physostigmine
  - B. mannitol
  - C. timolol
  - D. phenylephrine
  - E. atropine
59. The mechanisms for epinephrine in the treatment of allergic shock is (are)
- A. cardiac stimulation
  - B. vasoconstriction to increase blood pressure
  - C. reduce the release of allergic substance
  - D. bronchial dilation
  - E. improve microcirculation
60. From the following indications for the use of phentolamine, which are(is) correct?
- 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
61. 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)
62. The drugs that cannot be used in patient with bronchial asthma is(are)
- A. morphine
  - B aspirin
  - C. propranolol
  - D. dopamine
  - E. atropine
63. Which of the following statements concerning nifedipine are true?
- A. it promotes the atrioventricular conduction
  - B. it reduces the myocardial contractility
  - C. it can be used in treating hypertension
  - D. it belongs to calcium channel blockers
  - E. it can increase the rennin activity
64. The antiasthmatic mechanisms of aminophylline are(is) attributed to
- A. blockade of adenosine-receptor
  - B. blockade of M-receptor
  - C. release of catecholamines is increased
  - D. stimulation of  $\beta_2$  receptor
  - E. inhibition of phosphodiesterase
65. Which of the following are(is) true about streptokinase?
- A. It is a kind of enzyme extracted from the culture fluid of  $\beta$ -hemolytic streptococci
  - B. Forming complex with plasminogen,activating
  - C. It can induce allergic reactions
  - D. It is used to prevent the expansion and formation of thrombosis
  - E. It is used to dissolve thrombosis , and treat thromboembolism
66. Which of the following statement about insulin are(is) true?



- A. it can cause hypoglycemic 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
67. all of the following statements about antibiotics are accurate EXCEPT
- A.the cephalosporins inhibit cell wall synthesis by inhibiting  $\beta$ -lactamases
  - B.tetracyclines inhibit protein synthesis by interacting with the 30s ribosomal subunit
  - C.quinolones inhibit protein synthesis by interacting with the 30s ribosomal subunit
  - D.polymyxins act to disrupt the selective permeability of bacterial cell membranes by insertion into the lipid bilayer
  - E.trimethoprim inhibits dihydrofolate reductases of bacteria
68. Patients with hepatic insufficiency are unsuitable to use
- A. cortisone
  - B. hydrocortisone
  - C. prednisone
  - D. prednisolone
  - E. dexamethasone
69. 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
70. Which of the following drugs can produce anxiolytic effect?
- A. diazepam
  - B. luminal
  - C. buspirone
  - D. chloral hydrate
  - E. flurazepam

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

1. superinfection
2.  $PA_2$
3. after effect
4. addiction
5. resistance
6. alkylating agents
7. chemotherapy
8. competitive antagonists
9. first-pass elimination
10.  $ED_{50}$

### **PART III Assay Questions(40 points)**

1. Please describe the antianginal action of nitroglycerin and  $\beta$ -blockers respectively and explain the advantage of the combination use of them. (12)
2. Please describe the anti-hypertensive mechanisms of ACEI. (8)
3. Please describe the characteristics of the third generation of cephalosporins. (6)
4. Please explain the mechanisms of anti-shock action of glucocorticoids and the use methods. (6)
5. Please describe the action mechanisms of drugs which can treat organophosphates poisoning. (8)

### **PART IV Question for choice (10 points)**

Please describe the drugs that can produce effects by increasing NO in vivo.

**1. superinfection:** 称为二重感染或菌群交替症。长期使用广谱抗生素后,敏感菌的生长受到抑制,不敏感者在体内大量繁殖,而引起新的感染。

**2.  $PA_2$ :** 拮抗参数。使激动药浓度加倍才能达到原先激动效应的拮抗药,其摩尔浓度的副对数值。

**3. after effect:** 后遗效应。停药后血药浓度下降至阈浓度以下时残存的药理效应。

**4. addiction:** 成瘾性。病人对药物产生依赖性,停药后产生精神和生理功能紊乱的

**5. resistance:** 耐药性。病原体和肿瘤细胞在长期用药后产生的耐受性。

**6. alkylating agents:** 烷化剂。化学结构中所含的烷基能与细胞的 DNA、RNA 或蛋白质中亲核基团起烷化作用,形成交叉联结使 DNA 断裂,造成 DNA 结构和功能的损害。

**7. chemotherapy:** 化学治疗。对病原体(微生物、寄生虫、恶性肿瘤细胞)所致疾病的药物治疗统称为化学治疗。

**8. competitive antagonists:** 竞争性拮抗药。与激动药互相竞争与受体的结合,降低其亲和力,而不降低内在活性,可使激动药的量效曲线平行右移,最大效能不变。

**9. first-pass elimination:** 首过消除。药物在进入体循环之前首先在胃肠黏膜、肝脏被灭活代谢一部分,导致进入体循环的实际药量减少。

**10.  $ED_{50}$ :** 半数有效量。在量反应中能引起 50%最大反应强度的药量,在质反应中能引起 50%实验对象出现阳性反应的药量。

**1. Please describe the antianginal action of nitroglycerin and  $\beta$ -blockers respectively and explain the advantage of the combination use of them. (12)**

答:

**2. Please describe the anti-hypertensive mechanisms of ACEI. (8)**

**3. Please describe the characteristics of the third generation of cephalosporins. (6)**

**4. Please explain the mechanisms of anti-shock action of glucocorticoids and the use methods. (6)**

**5. Please describe the action mechanisms of drugs which can treat organophosphates poisoning. (8)**