

# 山东大学医学院

(2008—2009 学年第一学期)

2005 级临床医学专业六年制、2006 级口腔医学专业七年制

药理学期末考试试题 (A 卷)

FINAL EXAMINATION OF PHARMACOLOGY FOR

6-YEARS-2005 AND 7-YEARS-2006 STUDENTS

题号	一	二	三	四	五	六	七	总分	统分人
得分									

得分	评卷人

## 一、名词解释 (definitions, 10 points, 2 points/item)

1. Side effect

扣分

2. tolerance

扣分

3. first-pass elimination

扣分

4. Antibacterial spectrum

扣分

5. Chemotherapeutic index

扣分

得分	统分人

二、选择题（A型每题0.8分，X型每题1分，共50分）

（一）Type A choice questions

(only one answer is correct, 40 points, 0.8 points/item)

1. A drug is administered in a single dose of 50mg, after a period of time the plasma drug concentration is found to be 1mg/L. The apparent volume of distribution is

- A. 10L
- B. 20L
- C. 30L
- D. 40L
- E. 50L**

2.  $PD_2$  refers to

- A. therapeutic index
- B. antagonist
- C. affinity index**
- D. dissociation constant
- E. elimination rate constant

3. Among the following drugs, which will be excreted most quickly in acidic urine?

- A. a weak acid drug with pKa of 5.5
- B. a weak base drug with pKa of 7.5**
- C. a weak base drug with pKa of 4.5
- D. a weak acid drug with pKa of 3.5
- E. a weak base drug with pKa of 6.5

4. Which of the following drugs can induce hepatic microsomal enzyme

- A. rifampicin
- B. alcohol
- C. phenytoin
- D. phenobarbital
- E. all of the above**

5. Which of the following  $\beta$ -blockers can be used in treating glaucoma?

- A. propranolol
- B. timolol**
- C. pindolol
- D. atenolol
- E. metoprolol

6. Tachycardia is more common observed in phentolamine than prazosin because the former

- A. has some M-agonist action
- B. has some  $\beta_1$ -agonist action**

- C. blocks postsynaptic  $\alpha_2$ -receptors
  - D. blocks presynaptic  $\alpha_2$ -receptors**
  - E. stimulates heart directly
7. Adrenaline can be used to manage
- A. cardiac asthma
  - B. acute bronchial asthma**
  - C. chronic bronchial asthma
  - D. infectious shock
  - E. peripheral ischemic disorder
8. Which of the following drugs can cause insomnia
- A. adrenaline
  - B. dopamine
  - C. ephedrine**
  - D. isoprenaline
  - E. norepinephrine
9. Which of the following agents is effective in the treatment of depression
- A. lithium carbonate
  - B. imipramine**
  - C. chlorpromazine
  - D. haloperidol
  - E. fluphenazine
10. Chlorpromazine can be used for schizophrenia because of its
- A. central depression**
  - B. blocking muscarine receptor
  - C. blocking  $\alpha$ -receptor
  - D. stimulating CTZ
  - E. antiemetic action
11. The oral antipsychotic drug that would be used for the patient with chronic psychoses to maintain curative effect is
- A. clozapine
  - B. penfluridol**
  - C. chlorpromazine
  - D. chlorprothixene
  - E. haloperidol
12. 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

13. The phenobarbital intoxication can be managed by
- A. administration of  $\text{NaHCO}_3$
  - B. administration of  $\text{NH}_4\text{Cl}$
  - C. coramine in large doses
  - D. enzyme induction
  - E. injection of procaine
14. Extrapyramidal symptoms caused by chlorpromazine is due to
- A. blocking DA receptor in mid-brain-limbic system
  - B. inhibiting  $\alpha$ -receptor in brain
  - C. inhibiting DA receptor in tuberoinfundibular pathway
  - D. inhibiting M-receptor in CNS
  - E. blocking DA receptor in nigrostriatal pathway
15. The cardinal mechanism of antidepressant action of tricyclic agents is
- A. Blockade of NE and 5-HT reuptake peripherally
  - B. Blockade of NE and 5-HT reuptake centrally
  - C. Stimulation of reticular ascending activating system
  - D. Blockade of  $\alpha$ -receptors
  - E. Blockade of M-receptors
16. Which of the following analgesic drugs can be used for artificial hibernation
- A. pethidine
  - B. morphine
  - C. anadol
  - D. methadone
  - E. fentanyl
17. The drug of first choice to treat trigeminal neuralgia is
- A. phenytoin sodium
  - B. carbamazepine
  - C. Phenobarbital
  - D. ethosuximide
  - E. primidone
18. 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
19. The antipsychotic drugs:
- A. are equally effective against the positive and negative symptoms of schizophrenia
  - B. can cause blurred vision, urinary retention and other signs of muscarinic blockade
  - C. bind selectively to  $\text{D}_2$ -dopaminergic receptors.

D. have antiparkinsonism effects similar to levodopa.

E. have a rapid onset of antipsychotic action.

20. Which of the following statements about morphine is INCORRECT?

A. It is used therapeutically to relieve pain caused by severe head injury.

B. Its withdrawal symptoms can be relieved by methadone.

C. It causes constipation.

**D. It is most effective by parenteral administration.**

E. It rapidly enters many body tissues, including the fetus of a pregnant woman.

21. A three-month-old infant is brought to the emergency room with seizures of the tonic-clonic type. His mother reports that these seizures have been occurring for 50min. The treatment of choice is

**A. Diazepam i.v.**

B. phenytoin

C. phenobarbital

D. carbamazepine

E. valproate sodium

22. The primary site of action of the following drugs is(are)

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 thin ascending limb

**E. none of above is right**

23. A 70-year-old female is treated with sublingual nitroglycerin for her occasional bouts of angina. Which of the following is involved in the action of nitroglycerin?

A.  $\alpha$ -adrenergic activity

B. Phosphodiesterase activity

C. Phosphorylation of light chains of myosin

D. Norepinephrine release

**E. Nitric oxide released**

24. The first choice for treating a reentrant supraventricular tachycardia is

A. propranolol

B. digitoxin

C. quinidine

**D. verapamil**

E. nifedipine

25. Which of the following antihypertensive drugs can treat morphine addiction?

A. enalapril

**B. clonidine**

C. prazosin

D. metoprolol

E. methadone

26. Which of the following diseases is NOT contraindication of glucocorticoids?

A. corneal ulcer

B. psychosis

C. diabetes mellitus

D. severe hypertension

**E. Rheumatic fever**

27. Which of the following drugs can inhibit  $\alpha$ -glycosidase

A. gliclazide

B. glipizide

C. gliquidone

**D. acarbose**

E. metformin

28. Which one of the following drugs can inhibit  $H^+ - K^+ - ATPase$  and used in peptic ulcer?

A. Ranitidine

B. Pirenzepine

**C. Omeprazole**

D. Sucralfate

E. cisapride

29. The drug useful in preventing asthma but lacking bronchodilator action is

**A. cromolyn sodium**

B. ephedrine

C. isoprenaline

D. labetalol

E. metoprolol

30. Which of the following drugs is used for antifibrinolysis ?

A. vitamin K

B. urokinase

**C. aminomethyl benzoic acid**

D. adenosine

E. none of the above

31. The severe adverse reaction of biguanides is

A. hypoglycemia

**B. lactic acidosis**

C. vomiting

D. blood dyscrasias

E. hepatic impairment

32. Large dose of iodine can be used to treat which of the following disease?

A. cretinism

B. solid edema

C. endemic goiter

**D. thyroid crisis**

E. mild thyroidism

33. Which of the following drugs is an inhibitor of hepatic microsomal enzymes

A. nizatidine

B. propranolol

C. quinidine

D. phenytoin

**E. cimetidine**

34. Which is the best scheme for treatment of pernicious anemia

A. folic acid

B. leucovorin calcium

C. Vitamin B12 orally

**D. folic acid plus Vitamin B12 injection**

E. Vitamin B12 plus ferrous sulfate

35. The antiplatelet mechanism of aspirin is

**A. inhibiting COX in platelet**

B. inhibiting COX in endothelium

C. inhibiting PDE

D. antagonizing TXA<sub>2</sub> receptor

E. antagonizing GP II a/IIIb receptor

36. Glucocorticoids can be the first choice of

A. anaphylactic shock

**B. infectious-toxic shock**

C. hypovolemic shock

D. cardiogenic shock

E. neurogenic shock

37. Which of the following is a withdrawal syndrome of glucocorticoids?

A. Induction and aggravation of infections

**B. adrenal crisis**

C. central obesity

D. Hypertension

E. Osteoporosis

38. The reason that glucocorticoids can be used in severe bacterial infection is

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

39. The drugs which are potent against the pseudomonas aeruginosa are

- A. piperacillin, gentamycin and cefoperazone (头孢哌酮)**
- B. erythromycin, piperacillin and cefoperazone
- C. gentamycin, amoxicillin and cefoperazone
- D. amoxicillin, oxacillin and piperacillin
- E. cefoperazone, cefazolin and erythromycin
40. Which of the following compatibility administration is correct?
- A. clindamycin + erythromycin
- B. penicillin + tetracycline
- C. gentamicin + streptomycin
- D. streptomycin + vancomycin
- E. gentamicin + penicillin**
41. The agent that can relieve AIDS and AIDS correlating syndrome is
- A. ribavirin
- B. zidovudine**
- C. acyclovir(阿昔洛韦)
- D. amphotericin B
- E. amantadine (金刚烷胺)
42. Red man syndrome is caused by
- A. SMZ
- B. aminoglycosides
- C. quinolones
- D. chloramphenicol
- E. vancomycin**
43. The mechanism of action of rifampicin is
- A. inhibits cell-wall synthesis
- B. inhibits RNA polymerase**
- C. binds to the 30s ribosome subunit
- D. binds to the 50s ribosome subunit
- E. interfere with folic acid metabolism
44. Which of the following drugs may cause severe aplastic anemia?
- A. penicillin G
- B. doxycycline
- C. chloramphenicol**
- D. streptomycin
- E. tetracycline
45. SMZ act synergistically with TMP because
- A. both of them act at the different steps in inhibiting folic acid synthesis**
- B. TMP inhibits the metabolism of SMZ
- C. TMP can decrease accumulation of SMZ in kidney
- D. SMZ inhibit  $\beta$ -lactamase



E. TMP can inhibit dehydropeptidase

46. Of the following, the true statement about isoniazid is

A. it is inducer of liver drug enzyme

B. it has effect on staphylococcus aureus (金葡菌)

C. it can not induce liver toxicity

**D. it inhibits biosynthesis of mycolic acid (分枝菌酸)**

E. it is second line antituberculosis drug

47. Which of the following is not the adverse reaction caused by quinolones

A. phototoxicity

B. gastrointestinal reactions

C. cartilage damage

**D. gray baby syndrome**

E. central nervous system toxicity

48. Penicillin G can not be used to treat infection caused by

A. pneumococcus

**B. virus**

C. spirochete (螺旋体)

D. Diplococcus meningitidis (脑膜炎奈瑟菌)

E. hemolytic streptococcus

49. Which of the following drugs is the first choice in treating mycoplasma pneumonia?

A. chloramphenicol

B. penicillin

C. norfloxacin

D. streptomycin

**E. azithromycin**

50. Which of the following can be used for pseudomembranous enterocolitis (伪膜性肠炎) caused by MRSA?

A. clindamycin

**B. vancomycin**

C. erythromycin

D. methicillin

E. tetracyclines

## (二) Type X choice questions

(one or more answer/s is/are correct, 10 points, 1 point/item)

51. Which of the following statements is(are) NOT true

**A. Emax of drug is also called the potency of drug**

**B. an antagonist is the drug that interacts with receptor with high affinity and intrinsic activity**

**C. the allergic reaction is the side effect of a drug**

**D. some drugs have first-pass elimination after injection**

**E. all drugs are metabolized by hepatic microsomal enzymes**

52. In a hypertensive patient who is taking insulin to treat diabetes, which of the following drugs is to be used with extra caution and advice to the patient?

A. prazosin

**B. propranolol**

C. nifedipine

**D. captopril**

E. losartan

53. The drug which is effective in treatment of absence seizures is

A. phenytoin

**B. nitrazepam**

**C. ethosuximide**

**D. clonazepam**

**E. sodium valproate**

54. Diazepam possesses

A. antianxiety action

**B. sedative action**

**C. muscle relaxant action**

**D. anticonvulsant action**

**E. amnesia**

55. Which of the following drugs used in peptic ulcer possessing mucosa protection effects?

A. cimetidine

**B. sucralfate**

**C. colloidal bismuth subcitrate**

D. proglumide

**E. misoprostol**

56. Which of the following is(are) the clinical use of H<sub>1</sub>-receptor antagonists?

**A. Allergic rhinitis**

**B. urticaria**

C. allergic shock

D. peptic ulcer

**E. motion sickness and nausea**

57. Which of the following drugs may cause neutrocytopenia?

**A. propylthioracil**

**B. ticlopidine**

C. aminophylline

D. urokinase

**E. phenytoin sodium**

58. The agents that can inhibit bacterial protein synthesis include

**A. doxycycline**

**B. gentamicin**

**C. norfloxacin**

**D. azithromycin**

**E. cefazolin**

**59. Drugs that are effective on anerobe infection are**

**A. clindamycin**

**B. erythromycin**

**C. gentamicin**

**D. metronidazole**

**E. levofloxacin**

**60. 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)**

得分	统分人

**三、问答题 (Assay Questions, 40 points, 8 points/item)**

**1. please describe the pharmacological effects and clinical uses of pilocarpine in ophthalmological (眼科的) diseases.**

扣分	评卷人

**2. Please describe the pharmacological actions and mechanisms of Chlorpromazine on central nervous system.**

扣分	评卷人

**3. Please describe the mechanisms of ACEI in the treatment of hypertension.**

扣分	评卷人

**4. Please compare the anticoagulative mechanism and characteristics of heparin and dicoumrin.**

扣分	评卷人

**5. Please compare the characteristics of the four generations of cephalosporins respectively.**

扣分	评卷人

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## 药理学期末考试试题 (A 卷) 答案

### 一. 名词解释

- 1.副作用: 药物在治疗剂量下发生的 (1 分) 与治疗目的无关的作用 (1 分)。
- 2.耐受性: 在连续多次用药后 (1 分) 机体对药物的反应性降低 (1 分)。
- 3.首过消除: 经胃肠道吸收入门经脉系统的药物先通过肝脏, 由于肝脏对药物的代谢作用 (1 分) 可使进入血循环的药量减少 (1 分)。
- 4.抗菌谱: 抗菌药物的抗菌作用范围 (2 分)。
- 5.化疗指数: 化疗药物 (0.5 分) 的 LD<sub>50</sub>/ED<sub>50</sub> (1.5 分)。

### 二. 选择题

- 1.E 2.C 3.B 4.E 5.B 6.D 7.B 8.C 9.B 10.A 11.B 12.B 13.A 14.E 15.B 16.A 17.B  
18.B 19.B 20.D 21.A 22.E 23.E 24.D 25.B 26.E 27.D 28.C 29.A 30.C 31.B 32.D  
33.E 34.D 35.A 36.B 37.B 38.C 39.A 40.E 41.B 42.E 43.B 44.C 45.A 46.D 47.D  
48.B 49.E 50.B 51.ABCDE 52.CD 53.BCDE 54.ABCDE 55.BCE 56.ABE 57.ABE  
58.ABD 59.ABDE 60.AC

### 三. 问答题

#### 1.毛果芸香碱对眼睛的作用和应用

- (1) 缩瞳 (1 分): 激动虹膜/瞳孔括约肌的 M 受体, 瞳孔括约肌收缩, 瞳孔缩小 (1 分); 在临床上与扩瞳药合用, 用于虹膜炎、虹膜睫状体炎防止粘连 (1 分)。
- (2) 降低眼内压 (1 分): 通过缩瞳作用使虹膜向瞳孔方向拉动, 虹膜根部变薄, 前房角间隙扩大, 房水易于经滤帘进入巩膜静脉窦, 眼内压下降 (1 分); 在临床上可用于闭角型青光眼, 对开角型青光眼早期有一定改善作用 (1 分)。
- (3) 调节痉挛 (1 分): 激动睫状肌上的 M 受体, 睫状肌向瞳孔方向收缩, 悬韧带松弛, 晶状体曲度变大 (变凸), 此时只适合看近物, 称调节痉挛 (1 分)。

#### 2.氯丙嗪在中枢神经系统的作用和机制

- (1) 抗精神病作用 (1 分): 抑制中枢神经系统, 又叫神经安定作用。对正常人可引起安静、活动减少、感情淡漠、注意力下降等, 安静状态下诱导入睡; 对精神分裂症患者可迅速控制兴奋躁动状态, 消除幻觉妄想等症状 (1 分)。  
机制: 阻断中脑-边缘系统和 中脑皮层系统的 D<sub>2</sub> 样受体 (2 分)。
- (2) 镇吐作用 (1 分): 阻断延脑催吐化学感受区 (CTZ) 的 D<sub>2</sub> 受体, 大剂量直接抑制呕吐中枢 (1 分)。
- (3) 对体温调节的作用 (1 分): 抑制下丘脑体温调节中枢, 使体温调定点失灵, 机体体温随外界温度而变化 (1 分)。

#### 3.ACEI 治疗高血压的机制:

- (1) 抑制血浆 ACE, 阻止 Ang II 的生成, 取消 Ang II 的缩血管作用, 降低外周阻

力 (2 分)。

(2) 抑制组织 ACE, 减少血管 Ang II 的生成, 防止 VSMC 增生 (1 分); 减少肾组织中 Ang II 生成, 醛固酮分泌减少, 水钠潴留减轻, 血容量降低 (1 分)。

(3) 保存缓激肽活性 (1 分), 激活 B2 受体, 促扩血管物质生成(EDHF、NO 和 PGI<sub>2</sub>), 扩血管, 降血压 (1 分)。

(4) 抑制交感神经活性: 减弱 Ang II 对交感神经突触前膜 AT 受体的作用, NA 释放减少 (1 分); 抑制中枢 RAS, 中枢交感活性降低 (1 分)。

#### 4.比较肝素与双香豆素的抗凝作用

		肝素	双香豆素
相同点	临床应用(0.5 分)	血栓栓塞性疾病	
	主要不良反应(0.5 分)	自发性出血	
不同点	作用机制(2 分)	增强 ATIII 的抗凝作用	拮抗维生素 K
	作用部位(1 分)	II a, X a, XIa, XIIa, IXa	II, VII, IX, X
	起效时间(1 分)	快	慢
	给药方式(1 分)	注射	口服
	维持时间(1 分)	短	长
	过量解救(1 分)	鱼精蛋白	维生素 K

#### 5.比较四代头孢菌素的抗菌作用特点

	一代	二代	三代	四代
G+菌 (1.5 分)	+++	++	+	++
G-菌 (1.5 分)	+	++	+++	++++
厌氧菌 (1 分)	-	+	++	++
铜绿假单胞菌 (1 分)	-	-	++	+++
对 β 内酰胺酶稳定性 (1.5 分)	+	++	+++	++++
肾毒性 (1.5 分)	++	+	-	-