

Part I : 50%

1. 請說明下列藥物的臨床用途和作用機轉。(30%)

- | | | |
|-----------------|----------------|---------------|
| (1) Domperidone | (2) Metyrapone | (3) Propofol |
| (4) Ondansetron | (5) Valsartan | (6) Rofecoxib |

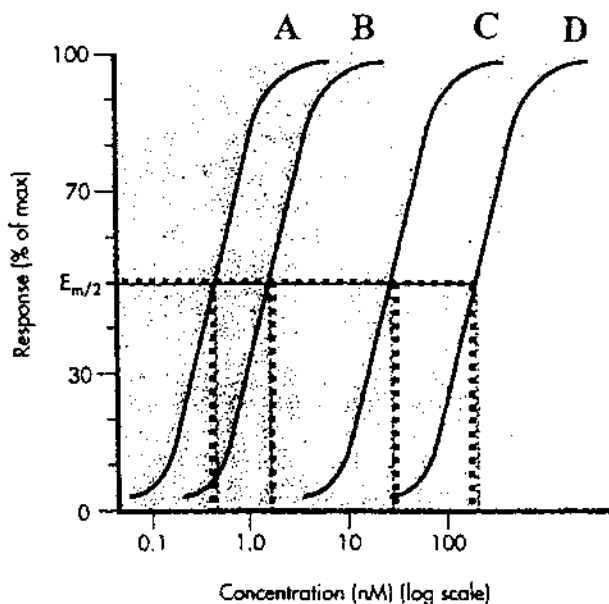
2. 藥物若藉由受體(receptor)產生作用者，其所需的濃度或劑量皆較低。這是為什麼？請說明其理由。(10%)

3. 最近，影星柯俊雄先生捲入一件壯陽產品的糾紛。台北市衛生局認為該項產品含有禁藥的育亨賓(yohimbine)，業者則主張「檢測錯誤，並無含有該項禁藥」。倘若您接受委任仲裁的工作，會如何公平的處理？請說明其理由。(10%)

(背面仍有題目,請繼續作答)

Part II : 50%(每題 2 分)

1. Which of the following is NOT a phase I drug metabolizing reaction?
 - (A) Deamination
 - (B) Hydrolysis
 - (C) Acetylation
 - (D) Oxidation
 - (E) Reduction
2. Smooth muscle strips are placed in a organ bath and exposed to drugs that elicit muscle contraction. The curves below represent responses to several agonists that bind to the same receptor subtype and indicate that:



- (A) Drug A has the greatest affinity for the receptor subtype.
 - (B) Drug A has greater efficacy than drug B.
 - (C) Drug A has many spare receptors.
 - (D) All of the above are correct.
 - (E) All of the above are incorrect.
3. From the above curves:
 - (A) A curve almost identical to curve D could be obtained if a receptor subtype antagonist were mixed with agonist A.
 - (B) Agonist A has the largest apparent K_d .
 - (C) Curve D could be considered to be a partial antagonist of the receptor.
 - (D) A curve almost identical to curve C could be obtained if a receptor subtype non-competitive antagonist were mixed with agonist A.

- (E) Drug D has the greatest affinity for the receptor subtype.
4. Which if the approximate percentage of a weak acid ($pK_a = 5.4$) in the nonionized form in plasma having a pH of 7.4?
- (A) 99%
 - (B) 90%
 - (C) 10%
 - (D) 1%
 - (E) 0.1%
5. It is desirable to achieve a steady state plasma concentration of 75 ng/ml of the drug. The intravenous bolus dose and maintenance dosing regimen should be:
- (A) 75 mg and 200 mg every hour
 - (B) 16 mg and 16 mg every 3 hours
 - (C) 20 mg and 54 mg every 3 hours
 - (D) 100 mg and 100 mg every 12 hours
 - (E) 16 mg and 5 mg every 3 hours
6. Full activation of the sympathetic nervous system, as in maximal exercise, can produce all of the following responses EXCEPT:
- (A) Increased renal blood flow.
 - (B) Mydriasis.
 - (C) Decreased intestinal motility.
 - (D) Bronchial relaxation.
 - (E) Increased heart rate (tachycardia).
7. Which of the following is NOT the "Nicotinic" site of action?
- (A) Skeletal muscle.
 - (B) Parasympathetic ganglia
 - (C) Sympathetic ganglia
 - (D) Bronchial smooth muscle
 - (E) Hippocampal neuron
8. Which of the following is NOT the accepted therapeutic indication for the use of antimuscarinic drugs?
- (A) Parkinson's disease.
 - (B) Hypertension.
 - (C) Traveler's diarrhea.

(背面仍有題目,請繼續作答)

- (D) Motion sickness.
(E) Postoperative bladder spasm.
9. When papillary dilation, but not cycloplegia, is desired, a good choice is:
(A) Phenylephrine
(B) Tropicamide
(C) Isoproterenol
(D) Homatropine
(E) Pilocarpine
10. All of the following statements about captopril are correct EXCEPT:
(A) Increase rennin concentration in the blood.
(B) Inhibit angiotensin-converting enzyme activity.
(C) Competitively block angiotensin II at its receptor.
(D) Decrease angiotensin II concentration in the blood.
(E) Increase sodium and decrease potassium in the urine.
11. Nitroglycerin, either directly or through reflexes, results in all of the following EXCEPT:
(A) Decreased afterload.
(B) Decreased heart rate.
(C) Decreased cardiac force.
(D) Increased venous capacitance.
(E) Decreased intramyocardial fiber tension.
12. A common effect of digoxin (at the therapeutic blood levels) that can be almost entirely blocked by atropine is:
(A) Tachycardia.
(B) Decreased appetite.
(C) Increased atrial contractility.
(D) Headaches.
(E) Increased PR interval on the ECG.
13. All of the following statements are correct EXCEPT
(A) Benztropine blocks cholinergic pathways in the striatum.
(B) Deprenyl inhibits monoamine oxidase type B and increases dopamine levels in brain.
(C) Amantadine inhibits the metabolism of levodopa.

- (D) Bromocriptine directly activates dopaminergic receptors.
- (E) Antimuscarinic agents are generally less efficacious than levodopa in the treatment of Parkinsonism.
14. The problems of cocaine abuse are most similar to those of:
- (A) Heroin abuse.
- (B) Amphetamine abuse.
- (C) Marijuana abuse.
- (D) Alcoholism.
- (E) Secobarbital abuse.
15. All of the following statements about the disposition of ethanol are accurate EXCEPT?
- (A) After the oral consumption of comparable amount of ethanol, plasma levels of ethanol are higher in men than in women.
- (B) Ethanol is absorbed at all levels of the gastrointestinal tract.
- (C) Acetaldehyde is the initial product of ethanol metabolism.
- (D) Methanol is less effective substrate for alcohol dehydrogenase than ethanol.
- (E) The metabolism of ethanol follows zero-order kinetics.
16. A person who has been taking one drug chronically and experiences a withdrawal syndrome upon discontinuing it finds relief from these symptoms by taking a second drug. This is an example of:
- (A) Craving.
- (B) Psychological dependence.
- (C) Cross-dependence.
- (D) Tolerance.
- (E) Drug addition.
17. Pharmacological effects of amphetamine include all of the following EXCEPT?
- (A) Amphetamine facilitates the release of norepinephrine and dopamine in brain.
- (B) Amphetamine decreases appetite but increases respiratory rate.
- (C) Amphetamine increases systolic and diastolic blood pressure.
- (D) Hyperphagia is a common withdrawal symptom observed in amphetamine chronic users.
- (E) Amphetamine inhibits the breakdown of norepinephrine and dopamine in brain.

(背面仍有題目,請繼續作答)

18. Which of the following drugs is the first choice for the treatment of complex partial seizure?
- (A) Phenobarbital
 - (B) Ethosuximide
 - (C) Carbamazepine
 - (D) Valproic acid
 - (E) Diazepam
19. A 8-year-old boy and his mother come to see you because the boy's teacher has observed episodes of staring and inability to communicate. These episodes last 3 to 5 seconds and occur 10 to 20 times during the school day. An EEG shows synchronized 3-per-second spike-wave discharges generalized over the entire cortex. Which antiepileptic medication would you try first in this young boy?
- (A) Ethosuximide
 - (B) Carbamazepine
 - (C) Phenytoin
 - (D) Primidone
 - (E) Clonazepam
20. What is the best initial treatment for a 3-year-old girl experiencing generalized tonic-clonic seizures daily?
- (A) Brain surgery to remove the focus of her seizures.
 - (B) Monotherapy with primidone.
 - (C) Treatment with phenytoin.
 - (D) Treatment with carbamazepine.
 - (E) No drug therapy at this time.
21. Activation of plasminogen to plasmin:
- (A) Is brought about by anistreplase.
 - (B) Is brought about by heparin.
 - (C) Is brought about by warfarin.
 - (D) Is used preoperatively and during surgery in patients at risk of deep vein thromboses.
 - (E) Can be reversed by administration of vitamin K₁ oxide.
22. Drugs that are useful in the treatment of gout include all of the following EXCEPT:
- (A) Probenecid

- (B) Aspirin
(C) Colchicine
(D) Allopurinol
(E) Indomethacin
23. All of the following are hormones EXCEPT:
(A) Bromocriptine
(B) Somatotropin
(C) Thyrotropin
(D) Vasopressin
(E) Somatomedin
24. Calcium antagonists are used for the treatment of the following diseases EXCEPT:
(A) Angia pectoris.
(B) Hypertension.
(C) Supraventricular tachycardia.
(D) Raynaud's phenomenon.
(E) Congestive heart failure.
25. All of the following statements concerning proposed mechanisms of action of antiepileptic drugs are correct EXCEPT:
(A) Phenytoin prolongs the inactivated state of the Na^+ ion channel.
(B) Ethosuximide selectively blocks K^+ channels in the thalamic neurons.
(C) Diazepam facilitates GABA-mediated inhibitory actions.
(D) Vigabatrin elevates brain GABA by irreversible inhibition of GABA-transaminase
(E) Valproic acid selectively enhance GABA release at inhibitory synapses.