

國立成功大學

112學年度碩士班招生考試試題

編 號：265

系 所：藥理學研究所

科 目：藥理學

日 期：0207

節 次：第 3 節

備 註：不可使用計算機

※ 考生請注意：本試題不可使用計算機。請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

**A. 單選題，每題 3 分 (共 75%)：**

1. The mechanism of action of Vinca alkaloids is by:
  - a. Inhibiting tubulin polymerization to form intracellular microtubules
  - b. DNA strands crosslinking
  - c. Causing breaks in DNA strands
  - d. Inhibiting transcription
  
2. Which of the following co-transmitter is most likely involved in mediating nonadrenergic noncholinergic (NANC) relaxation of the gut:
  - a. Nitric oxide (NO)
  - b. Neuropeptide Y (NPY)
  - c. Kallidin
  - d. Bradykinin
  
3. Furosemide acts by inhibiting the following in the renal tubular cell:
  - a.  $\text{Na}^+ \text{K}^+$  ATPase
  - b.  $\text{Na}^+$ - $\text{Ca}^{++}$  exchanger
  - c.  $\text{Na}^+$ - $\text{K}^+$ - $2\text{Cl}^-$  cotransporter
  - d.  $\text{Na}^+$ - $\text{H}^+$  antiporter
  
4. The action of histamine that is not mediated through  $\text{H}_1$  receptors is:
  - a. Release of EDRF from vascular endothelium resulting in vasodilatation
  - b. Direct action on vascular smooth muscle causing vasodilatation
  - c. Bronchoconstriction
  - d. Release of catecholamines from adrenal medulla
  
5. Which of the following NSAIDs has no anti-inflammatory activity?
  - a. Piroxicam
  - b. Ibuprofen
  - c. Paracetamol
  - d. Celecoxib
  
6. Megaloblastic anemia occurs as a result of:
  - a. Either Vitamin  $\text{B}_{12}$  or folic acid deficiency
  - b. Vitamin  $\text{B}_{12}$  but not folic acid deficiency

- c. Vitamin B<sub>12</sub> and folic acid deficiency
- d. Folic acid but not Vitamin B<sub>12</sub> deficiency

7. Dextromethorphan is an:

- a. Analgesic
- b. Antipyretic
- c. Antitussive
- d. Antihistamine

8. What is the mechanism of action of angiotensin II induced blood pressure increase?

- a. Direct vasoconstriction
- b. Increasing central sympathetic tone
- c. Increase epinephrine release from adrenal medulla
- d. All of the above

9. Which of the following statements about theophylline is true?

- a. Its plasma half-life is longer in children than that in adults
- b. Its use in asthma has declined because of narrow safety margin
- c. It increases cAMP formation
- d. Reduced dose is needed for smokers

10. Tetrodotoxin blocks nerve transmission by:

- a. Depleting acetylcholine
- b. Blocking Na<sup>+</sup> channels
- c. Anticholinergic action
- d. Blocking Ca<sup>2+</sup> channels

11. Neuromuscular blocking drugs do not have central actions because:

- a. They cannot ionize at the brain pH
- b. The brain has no nicotinic receptors
- c. They cannot cross the blood-brain barrier
- d. They bind tightly to the skeletal muscles

12. Which of the following actions that Barbiturates do not possess?

- a. Antianxiety
- b. Anticonvulsant
- c. Respiratory depressant
- d. Analgesic

13. The GABA<sub>B</sub> receptor:
- Regulates intracellular cAMP
  - Is not blocked by bicuculline
  - Is a channel containing receptor
  - Mediates neuronal depolarization
14. Which of the following statements best describes the current clinical usage of angiotensin converting enzyme inhibitors in congestive heart failure?
- They used as adjuncts in resistant cases
  - They are used when diuretics fail
  - They are the first choice drugs unless contraindicated
  - They can substitute for digitalis
15. Which of the following drugs has only weak muscle relaxant effect?
- Halothane
  - Ether
  - Isoflurane
  - Nitrous oxide
16. Which of the following statements about ethanol is true?
- It increases heat production and keeps a person warm in low temperature
  - It exerts anticonvulsant action followed by lowering of seizure threshold
  - It increases a person's confidence and reduces errors he committed
  - It lowers pain threshold
17. Hypnotic dose of diazepam causes:
- Tachycardia
  - Constipation
  - Hyperalgesia
  - Decreased nocturnal gastric secretion
18. Somatostatin inhibits the release of:
- Insulin
  - Glucagon
  - Growth hormone
  - All of the above

19. Digoxin increases the force of contraction of heart ventricle by:
- Increasing the duration of systole
  - Increasing the rate of contraction without affecting the duration of systole
  - Increasing the rate of contraction, but reducing the duration of systole
  - Increasing both the rate of contraction as well as the duration of systole
20. Which of the following autacoids are not biosynthesized and stored before use?
- Prostaglandins
  - Angiotensin II
  - Leukotrienes
  - All of the above
21. Which of the following is not an action of Thyrotropin on the thyroid gland?
- Induces thyroid hyperplasia and hypertrophy
  - Increases thyroid vascularity
  - Inhibits proteolysis of thyroglobulin
  - Promotes iodide trapping in thyroid
22. What is the difference between Ranitidine and Cimetidine?
- It produces more CNS side effects
  - It is less potent
  - It does not have antiandrogenic action
  - It has a shorter duration of action
23. Which of the following statements about Timolol and Pilocarpine eye drops in glaucoma treatment is true?
- Timolol is more effective than pilocarpine
  - Timolol cannot be used with pilocarpine
  - Timolol produces less ocular side effects
  - There are no contraindications to timolol
24. Which of the following drugs which is used in organ transplantation and autoimmune diseases, but not in cancers?
- Cycloheximide
  - Cyclosporine
  - 6-Mercaptopurine
  - Cyclophosphamide

25. Local anesthetics block nerve conduction by:

- a. Blocking all calcium channels in the neuronal membrane
- b. Hyperpolarizing the neuronal membrane
- c. Interfering neuronal membrane depolarization
- d. Activates chloride channels

**B. 問答題 (25%)**

1. Compare the actions, side effects and clinical uses of verapamil, diltiazem and nifedipine. (10%)
2. What are the pharmacological differences between angiotensin blockers and angiotensin converting enzyme inhibitors? (10%)
3. The statement “acetaminophen is not an NSAIDs”, is it true? Why? (5%)