

Part I : 50%

1. Explain the following terms: (10%)
 - a. Fick's law of diffusion
 - b. Volume of distribution
 - c. Rate of elimination
 - d. Beta-arrestin bias
 - e. First pass effect
2. Briefly describe the signal transduction system involved in the following receptors: (10%)
 - a. Cytokine receptors
 - b. Thyroid hormone receptor
 - c. Beta-adrenergic receptor
 - d. Nicotinic acetylcholine receptor
3. Describe the side effects of COX-2 inhibitors and the involved mechanisms. (5%)
4. Describe the progress in the design of oral contraceptives over the past three decades. (5%)
5. Describe the effect of the following drugs on action potential. (5%)
 - a. Digoxin
 - b. Procainamide
 - c. Verapamil
 - d. Flecainide
 - e. Amiodarone
6. Give examples and describe the mechanism of action of the commonly used anti-hyperlipidemics. (5%)
7. Answer **ONLY ONE** of the following questions: (10%)
 - a. Name some of the important pharmacologists and describe their contribution to the development of pharmacology.
 - b. What is gene therapy?
 - c. What is dendritic cell vaccination?
 - d. What is the strategy and rationale of pain control in hospice care?

本試題是否可以使用計算機：可使用，不可使用（請命題老師勾選）

考試日期：0302，節次：2

Part II : 50%

1. Describe action mechanisms of opioid analgesics. (10%)
2. Illustrate endocrine effects of insulin. (10%)
3. Demonstrate action mechanisms of nonsteroidal anti-inflammatory drugs.(10%)
4. Explain effects of proton pump inhibitors on gastric diseases. (10%)
5. Elucidate nitric oxide in disease. (10%)