系所組別： 臨床藥學研究所乙組

考試科目： 藥劑學

考試日期：0307，節次：1

※ 考生請注意：本試題 ☑可 ☐不可 使用計算機

1. From the point of view in the design of dosage forms, discuss why some solid dosage forms are not recommended to be divided or triturated for clinical use. (10%)

2. Define hydrophile-lipophile balance (HLB) system and illustrate its pharmaceutical applications. (10%)

3. Define targeted drug delivery systems and give two examples in clinical applications. Explain their targeting design and mechanisms. (10%)

4. A pharmacist is requested to prepare 60 ml of 2% progesterone oral suspension. Progesterone (micronized) 100 mg/cap is available in the pharmacy. What suspending agents, wetting agents, and flavoring agents can be used? Describe the detailed compounding steps and precautions in the preparation. (10%)

5. What penetration pathways may a drug molecule take during its percutaneous absorption processes? Discuss how the physicochemical properties of a drug influence its penetration through different pathways. (10%)

6. Describe the compendial methods of dissolution, according to the current edition of USP. (14%)

7. Describe and explain the following terms (10%):
   (1) Active pharmaceutical ingredient (2%)
   (2) Efflux transporter (2%)
   (3) Glidant (2%)
   (4) SUPAC (2%)
   (5) Wagner-Nelson method (2%)

(背面仍有題目,請繼續作答)

※ 考生請注意：本試題 ☑可 ☐不可 使用計算機

8. Describe the function(s) of the following ingredients in the tablet formulation (16%)

Ingredients	Quantity (mg/tablet)
Lactose monohydrate	32.9
Benazepril hydrochloride	20.0
Microcrystalline cellulose	10.0
Starch, pregelatinized	5.0
Hydrogenated caster oil	4.0
Crospovidone	2.0
Colloidal silicon dioxide	1.0
Water, purified	q.s.

9. Continuous intravenous infusion of a drug X is recommended for a patient with a body weight of 60 kg. The dose is prepared by dissolving 200 mg of the drug in 500 mL of 5% dextrose in water. The solution is infused over 24 hr. Drug X has a half-life of 2 hr and an apparent volume of distribution of 3 L/kg. Calculate the following: (10%)
   (1) Rate of infusion (3%)
   (2) Plasma concentration 20 hr after the start of infusion (3%)
   (3) Rate of elimination 24 hr after the start of infusion (2%)
   (4) Loading dose (2%)