## 國立中央大學97學年度碩士班考試入學試題卷

所別:水文與海洋科學研究所碩士班

科目:水文學(含地表水,地下水) 共 1 頁 第 1 頁 \*請在試卷答案卷(卡)內作答

1. Define and explain the following terms:

- (1) Dewpoint (露點) (5%)
- (2) Latent heat of vaporization (蒸發潛熱) (5%)
- (3) Rational Formula (合理化公式) (5%)
- (4) Specific Yield (比出水量) (5%)
- (5) Coefficient of Storage (貯蓄係數) (5%)
- (6) Safety yield (安全出水量) (5%)
- 2. Please describe four methods to estimate the local probable maximum precipitation (區域可能最大降水量).(10%)
- 3. Illustrate how logging (伐木) might change the following parameters in a hydrograph(2.5%): lag time(2.5%), peak discharge(2.5%), minimum flow(2.5%), baseflow contribution(2.5%), stormflow contribution(2.5%), rising limb(2.5%), and recession limb(2.5%).
- 4. Describe the procedures of at least two methods for base flow separation (基流分離) (10%)
- 5. What are Darcy's law (達西定理) and its limitation? (10%)
- 6. Discharge rate (Q) of a 1-hr unit hydrograph U(1,t) (一小時單位歷線) is given in the following table. Please calculate the discharge rate of the 4-hr unit hydrograph U(4,t) (四小時單位歷線) in a table from time = 0 hr to 8 hr. (10%)

Time (hr)	0	1	2	3	4	5
Q (CMS)	0	200	600	800	400	0

- 7. A rainfall event with rainfall intensity (降雨強度) I = 60 mm/hr happened on a fan-shaped area (扇形地區) shown as below. Assuming that the rainfall is uniformly distributed, the runoff coefficient (徑流係數) C = 0.5, and the time of concentration (集流時間) tc = 10 min. Please calculate the peak-flow discharge rate (尖峰流量) (in CMS) while
  - (1) the rainfall duration is equal to 5 min. (5%)
  - (2) the rainfall duration is equal to 20 min. (5%)

