

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

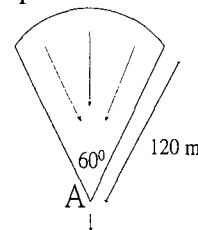
*請在試卷答案卷(卡)內作答

- Define and explain the following terms:
 - Dewpoint (露點) (5%)
 - Latent heat of vaporization (蒸發潛熱) (5%)
 - Rational Formula (合理化公式) (5%)
 - Specific Yield (比出水量) (5%)
 - Coefficient of Storage (貯蓄係數) (5%)
 - Safety yield (安全出水量) (5%)
- Please describe four methods to estimate the local probable maximum precipitation (區域可能最大降水量). (10%)
- 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%).
- Describe the procedures of at least two methods for base flow separation (基流分離) (10%)
- What are Darcy's law (達西定理) and its limitation? (10%)
- 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

- A rainfall event with rainfall intensity (降雨強度) $I = 60 \text{ mm/hr}$ 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) $t_c = 10 \text{ min}$. Please calculate the peak-flow discharge rate (尖峰流量) (in CMS) while

- the rainfall duration is equal to 5 min. (5%)
- the rainfall duration is equal to 20 min. (5%)



參考用