國立成功大學

111學年度碩士班招生考試試題

編　號：163

系　所：自然災害減災及管理國際碩士學位學程

科　目：水文學

日　期：0219

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。

1. Please explain following terms

   (a). Relative Humidity. (5)

   (b). Stream Order. (5)

   (c). Time of Concentration. (5)

   (d). Return Period. (5)

2. What are the five basic assumptions of the Unit Hydrograph? (15)

3. Please explain the difference between the two terms:

   (a). A hyetograph and a hydrograph. (10)

   (b). Hortonian overland flow and saturated overland flow. (10)

4. The direct runoff hydrograph (DRH, below left) of a watershed is caused by the effective rainfall hyetograph (ERH, below right).

   (a) What is the unit hydrograph (1hr, 1cm)? (12)

   (b) What is the area of the watershed? (8)

   (c) What is the unit hydrograph (2hr, 1cm)? (10)

Time (h)	0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5
Q (m³/s)	0	2	4	13	24	27	35	22	14	6	3	0

Time (hr)	0~1	1~2
ERH (cm)	2.0	3.0

5. A cofferdam has been built to protect a fruit farm area in Yu-Jing District, Tainan City until a major channel project can be completed. The cofferdam was built for the 20-yr flood event. The channel project will require 3 years to complete. Hence, what are the probabilities that?

   (a). The cofferdam will not be overtopped during the 3 years (the reliability)? (7)

   (b). The cofferdam will be overtopped exactly once in 3 years? (8)