編號: 203

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國立成功大學105學年度碩士班招生考試試題

所:製造資訊與系統研究所

考試科目:計算機組織與系統

考試日期:0227,節次:1

第 頁,共 頁

※ 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. Briefly describe the following terms.
 - (a) MapReduce. (10%)
 - (b) Data Hazards. (10%)
- 2. Let m processes P_1, P_2, \ldots, P_m with the length of the CPU burst time b_1, b_2, \ldots, b_m arrive at time t_1, t_2, \ldots, t_m , respectively. Suppose that $t_i < t_{i+1} < t_i + b_i$, $i = 1, \ldots, m$. Compute the average waiting time (over all processes) for the first-come first-served scheduling algorithm. (20%)
- 3. (a) What is the thread? What is the major difference between normal process and "thread" (10%)
 - (b) Explain the concept "polymorphism" and "dynamic binding" in object-oriented programming languages. (20%)
 - (c) Explain why fairness is an important goal in a time-sharing system? (10%)
- 4. Translate the beq instruction shown in the following codes into a 32-bit binary instruction, provided that the opcode of beq is 0X04. (20%)

Loop: add \$8,\$9,\$10 add \$8,\$9,\$10

beq \$0,\$9,Loop

End: add \$9,\$0,\$9