

中原大學 94 學年度博士班入學考試

6 月 8 日 10:30~12:00 電子工程學系乙組

誠實是我們珍視的美德，
我們喜愛「拒絕作弊，堅守正直」的你！

科目：計算機結構

(共 頁第 頁)

可使用計算機，惟僅限不具可程式及多重記憶者

不可使用計算機

1. (24%) CPU performance is dependent upon three characteristics : clock cycle time, clock cycles per instruction, and instruction count. For each characteristic, describe two factors that have influence on it and explain how it is influenced.
2. (24%) Describe three ISA, and discuss their advantages and disadvantages.
3. (32%) The performance of a system can be improved by incorporating techniques to exploiting the potential instruction-level parallelism (ILP). These techniques can be categorized into those adopting dynamic (hardware-intensive) approaches and those adopting static (compiler-intensive) approaches. When the basic structure is determined, the major target in improving system performance is to reduce stalls caused by data hazard or control hazard. For each hazard, describe two improvement techniques, one adopting the dynamic approach and the other the static one. If you know many of them, give the most advanced ones.
4. (20%) Explain the following terms in details:
 - (a) RAID
 - (b) Memory Hierarchy
 - (c) SMP
 - (d) VLIW

