



南台科技大學 101 學年度研究所考試入學招生考試

系組： 電機系丙組、電機系海外、生醫所

准考證號碼：

科目： 計算機概論(143)

(請考生自行填寫)

注意事項	一、請先檢查 <u>准考證號碼</u> 、 <u>報考系(組)別</u> 、 <u>考試科目名稱</u> ，確定無誤後再作答。 二、所有答案應寫於答案紙上，否則不予計分。 三、作答時應依試題題號，依序由上而下書寫，作答及未作答之題號均應抄寫。
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1. (10%) Explain the truncation-error (or round-off error) while coding the value $3\frac{3}{8}$ with one byte floating-point system (1 bit--- Sign bit; 2,3,4 bit --- Exponent; 5,6,7,8 bit --- Mantissa).
2. (10%) In what way could UDP be considered a better protocol for implementing the transport layer than TCP?
3. (10%) (a) Convert the decimal number -126 to binary number (1byte).
(b) Convert the hexadecimal number 3D.C to decimal number.
4. (10%) Please write a program to compute the following sequence. "1-3+5-7+9-11+...-99"
5. (10%) Explain each term of the following: (a) Memory hierarchy (b) Pipelining
6. (10%) What is the difference between half-adder and full-adder? Please design a half-adder by using truth table and basic logical gates.
7. (10%) Please write down the truth tables of four kinds of basic Flip-Flops such as SR, JK, D and T type.
8. (10%) Describe the functions of the SP register and DPTR register in 8051 microcontroller respectively.
9. (10%) Compare DSP chip with microcontroller and microprocessor.
- 10.(10%) Describe the functions of interrupt and Watch dog timer in microcontroller.