107 學年度國立金門大學碩士班考試入學

理工學院資訊科技與應用碩士班考試試題

科目：計算機概論

---作答注意事項---

考試時間：90 分鐘。

題型題數：

◎選擇題 10 題。

◎非選擇題 5 題。

配分：

◎選擇題每題 5 分，共 50 分，選擇題答錯不倒扣。

◎非選擇題每題 10 分，共 50 分。

作答方式：

◎作答前請先核對答案本上之准考證號、座位貼條之
號碼及科目名稱是否相符。

◎以黑筆或藍筆於「答案本」作答。

◎答題請標明題目編號。

◎答案本上不可填寫姓名或其他與作答無關的符號。

※請先詳閱上述注意事項再行作答。

祝考試順利

一、選擇題：共 **10** 題，每題 **5** 分

1. Which of the following is equivalent to 24 in decimal?
   (A) $(11000)_2$
   (B) $(1A)_{16}$
   (C) $(31)_8$
   (D) None of the above

2. Swift, C++, Java , Fortran and COBOL are examples of _____.
   (A) hardware
   (B) operating system
   (C) computer language
   (D) algorithms

3. If the ASCII code for E is 1000101, then the ASCII code for e is
   _____. Answer the question without consulting the ASCII table.
   (A) 1000110
   (B) 1000111
   (C) 0000110
   (D) 1100101

4. The _____ protocol is one of the protocols in the transport layer.
   (A) TCP
   (B) UDP
   (C) SCTP
   (D) all of the above

5. There are _____ bytes in 16 Terabytes.
   (A) 2^{16}
   (B) 2^{40}
   (C) 2^{44}
   (D) 2^{56}

6. _____ is a popular object-oriented language.
   (A) C
   (B) C++
   (C) Fotran
   (D) LISP

7. _____ is an ordered collection of data in which each element
   contains the location of the next element.
   (A) A linked list
   (B) A file
   (C) A record
   (D) An array

8. In _____ sort, the item that goes into the sorted list is always the
   first item in the unsorted list.
   (A) bubble
   (B) selection
   (C) every
   (D) insertion

9. A step-by-step solution to a program is called _____.
  (A) hardware　　　　　　　　　(B) an operating system
  (C) a computer language　　　　(D) an algorithm

10. Testing a software system can involve _____ testing.
  (A) neither black-box nor glass-box (B) glass-box
  (C) black-box　　　　　　　　　(D) both black-box and glass-box

二、非選擇題：共 5 題，每題 10 分

1. Please answer the following questions according to the relation:

R(ID, NAME,MATH,ENG,PHY,CHEM)

ID	NAME	MATH	ENG	PHY	CHEM
A1	B1	C1	D1	E1	F1
B2	B2	C2	D2	E2	F2
C3	B3	C3	D3	E3	F3
D4	B4	C4	D4	E4	F4
E5	B5	C5	D5	E5	F5

  (a). What is the cardinality? (2%)　(b). What is the set of attribute? (2%)　(c). What is the degree of attribute? (2%)　(d). write down SQL commands for selection, insertion, deletion and updating. (4%)

2. Given a network 192.168.218.0, please create the subnets such that there are at least 30 available IP addresses each. (please list the range, the subnet mask, the network IP, and the network broadcast IP for each subnet) (10%)

3. If you have a screen of 2048x1024 and it is capable of displaying 65,536 colors, what is the file size if you capture a full screen image into a bit-mapped file (uncompressed)? And how long does it take to transfer it to another computer with bandwidth of 128Kbps? (10%)

4. Using the bubble sort algorithm, manually sort the following list in ascending order, show your work in each pass using a table and represent the final result in a binary tree of height 2 with a total of 7 node in the manner of inorder, preorder, and postorder traversal(10%):

  6　　24　　36　　48　　56　　88　　8

5. Convert the number 111010111.1011 from base 2 to the following: (a) base 4,(2%)   (b) base 8,(2%)   (c) base 10,(2%)   (d) base 16. (2%)   (e) base 6. (2%)