准帶項目請打「○」否則打「×」
計 算 機
✕

本試題雙面印製

I. Choose the right answers (one or more answers) (30%)

1. A variable of type *unsigned char* can hold the value (a) 127 (b) 312 (c) -13 (d) 128.

2. The *break* statement causes an exit (a) only from the innermost loop (b) only from the innermost switch (c) from all loops and switches (d) none of above.

3. The expression **ptr* can be said to (a) be a pointer to *ptr* (b) refer to the contents of *ptr* (c) dereference *ptr* (d) refer to the value of the variable pointed to by *ptr*.

4. Which is the infinite loop (a) while (1); (b) for (;;) (c) while (x=0); (d)for (x=1; x=100; x++);

5. (a)int x = 10; (b)int x(10); (c)int x == 10; (d) int x[10]; is initialized the value of variable *x* to be 10.

6. Which of the following information should be contained in the object of a assembler? (a)program length (b)all local symbols and relative information (c)all external symbols and relative information (d)base register table.

7. In most computer system, linkage editors is (a)a part of executive (b)an application program (c)an utility program (d)a language processor.

8. The functions performed by a relocating loader are accomplished as follows: (a)relocation – by loader (b)linking – by loader (c)allocation – by assembler (d)loading – by loader.

9. Which of the following information is most unlikely to be required by a relocating loader? (a)external symbol information (b)text information (c)symbol table information (d)relocation information.

10. Which of the following loaders perform binding at loading time: (a)absolute loader (b)relocating loader (c)dynamic linking loader (d)linkage editor (e)linking loader.

11. In the TCP/IP model, which layer would deal with reliability, flow control, and error correction? (a)transport (b)internet (c)network (d)application

12. What is the maximum number of bits that can be borrowed from the host portion of a Class C network to create subnets? (a)2 (b)4 (c)6 (d)8

13. Which of the following best describes the address 139.219.255.255 in an unsubnetted environment? (a)Class A broadcast address (b)Class B host address (c)Class B broadcast address (d)Class C host address

14. Which OSI layer handles MAC addresses? (a)4 (b)3 (c)2 (d)1

15. What type of server is used to translate a domain name into the associated IP address? (a)FTP (b)DNS (c)TFTP (d)DHCP

(II) TRUE or FALSE   (*if the answer is FALSE, correct it*) (30%)

1. The value *-1* in C++ is FALSE.

2. A pointer of a derived class can point to objects of a base class.

3. A friend function can access a class's private data without being a member of the class.

4. A pure virtual function is a virtual function that returns nothing.

5. A static function should be called when an object is destroyed.

6. The maximum number of nodes in a binary tree of depth k is 2k-1, k>=1.
7. The BST (Binary Search Tree) must be an AVL tree.
8. The worse case of time complexity of quick sort, merge sort and heap sort is O(nlogn).
9. All nodes of a B-tree other than the root node and failure node have at least $\lfloor m/2 \rfloor$ children.
10. Macro definition can be appeared in anywhere of the source program in one-pass macro assembler.

(III) Refer to the definition of RDBUFF. Each of the following macro invocation statements contains an error. Which of these errors would be detected by the macro processor, and which would be detected by the assembler? Explain your reasons. (20%)

    (1) RDBUFF F3, BUF, RECL, ZZ　　　　// illegal value specified for %EOR
    (2) RDBUFF F3, BUF, RECL, 04, 2048, 01　// too many arguments
    (3) RDBUFF F3,,RECL, 04　　　　　　// no value specified for &BUFARD
    (4) RDBUFF F3, RECL, BUF, 04　　　　// arguments specified in wrong order

```
RDBUFF MACRO &INDEV, &BUFADR,                IF (&MAXLTH EQ '')
              &RECLTH, &EOR, &MAXLTH         +LDT    #4096
                                             ELSE
       IF (&EOR NE '')                       +LDT    &MAXLTH
&EORCK SET      1                            ENDIF
       ENDIF                         $LOOP   TD      =X'&INDEV'
       CLEAR  X                              JEQ     $LOOP
       CLEAR  A                              IF (&EORCK EQ 1)
       IF (&EORCK EQ 1)                      COMPR A, S
       LDCH   =X'&EOR'                       JEQ     $EXIT
       RMO    A, S                           ENDIF
       ENDIF                                 STCH    &BUFADR, X
                                     $EXIT   STX     &RECLTH
                                             MEND
```

(IV) Write the status of the list F = {8, 9, 10, 2, 1, 5, 3, 6, 4, 7, 11, 12} at the end of *each phase* of BST (Binary Search Tree), and this BST must be a AVL tree always. (20%)