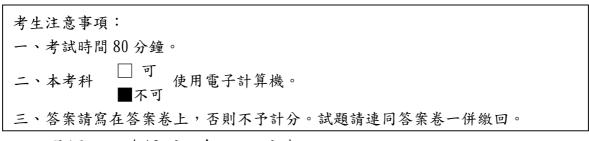
國立勤益科技大學 99 學年度四技日間部轉學生招生考試試題卷 系級: 資訊管理系三年級

科目: 計算機概論

准考證號碼:_____(考生自填)



- 一、選擇題: 〈40 分, 每題兩分〉
- 1. _____ can occur if a process has too many resource restrictions. (A) Starvation (B) Synchronization (C) Paging (D) Deadlock
- 2. A controller is a high-speed serial interface that transfers data in packets. (A) SCSI (B) FireWire (C) USB (D) both B and C
- 3. In the method to synchronize the operation of the CPU with the I/O device, a large block of data can be passed from an I/O device to memory directly. (A) programmed I/O (B) interrupt-driven I/O (C) DMA (D) isolated I/O
- 4. Multiprogramming requires a operating system. (A) batch (B) time-sharing (C) personal (D) distributed
- 5. The manager is responsible for archiving and backup. (A) memory (B) process (C) device (D) file
- 6. We use a search for an unordered list. (A) sequential (B) binary (C) bubble (D) insertion
- 7. The three steps in executing instructions of a program on a computer are performed in the specific order . (A) fetch, execute, and decode (B) decode, execute, and fetch (C) fetch, decode, and execute (D) decode, fetch, and execute
- 8. The layer of the TCP/IP protocol suite is responsible for node-to-node delivery of a frame between two adjacent nodes. (A) transport (B) network (C) data-link (D) physical

9. _____ is a protocol for e-mail services. (A) FTP (B) SMTP (C) TELNET (D) HTTP

- 10. _____ is a program's code in machine language. (A) A procedure (B) An object program (C) A source program (D) none of the above
- 11. Java is a(n) _____ language. (A) procedural (B) functional (C) declarative (D) object-oriented
- 12. is a memory type with capacitors that need to be refreshed periodically. (A) DRAM (B) SRAM (D) all of the above (C) ROM
- 13. A 32-bit code called ______ represents symbols in all languages. (A) ANSI (B) Unicode (C) EBCDIC (D) ASCII
- 14. For the binary OR operation, only an input of _____ gives an output of 0. (A) two 0s (B) two 1s (C) one 0 and one 1 (D) any of the above
- 15. A mask can flip the five rightmost bits of an 8-bit pattern. What is the result when the mask is operated on the following pattern 10100110? (A) 01011001 (B) 10111001 (C) 01011110 (D)

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10111111

- 16. How many symbols can be represented by a bit pattern with 10 bits? (A) 128 (B) 256 (C) 512 (D) 1024
- 17. In a computer, the ______ subsystem accepts data and programs and sends processing results to the outside world. (A) ALU (B) input/output (C) memory (D) control unit
- 18. In the _____ graphic method of representing an image in a computer, the image is decomposed into a combination of geometrical figures. (A) bitmap (B) vector (C) quantized (D) binary
- 19. The _____ is a storage device in which the user can write information only once to the disc. (A) CD-R (B) CD-ROM (C) CD-RW (D) all of the above
- 20. There are _____ bytes in 16 Terabytes. $(A)2^{24}$ $(B)2^{34}$ $(C)2^{44}$ $(D)2^{54}$
- 二、綜合題:〈60分,每題10分。有任何計算過程務必寫出,否則不予 計分〉
- If integers are stored in two's complement format in a computer, how the computer does the following arithmetic operation? Please use an 8-bit allocation for each integer.
 9 24
- 2. Show the Excess_127 (single precision) representation of the decimal number -161.875.
- 3. An imaginary computer has sixteen data registers (R0 to R15), 1024 words in memory, and 64 different instructions (add, subtract, etc.).
 - a. What is the minimum size of an instruction in bits if a typical instruction uses the following format: *INSTRUCTION M R*. (*INSTRUCTION* represents one of the 64 instructions, *M* represents a location of the memory, and *R* is one of the sixteen registers)
 - b. What is the size of the instruction register of this computer?
 - c. What is the size of the program counter of this computer?
- 4. A multiprogramming operating system uses paging. The available memory is 60 MB divided into 15 frames, each of 4 MB. The first program needs 14 MB. The second program needs 11 MB. The third program needs 26 MB.
 - a. How many frames are used by the first program?
 - b. How many frames are used by the second program?
 - c. How many frames are used by the third program?
 - d. How many frames are unused?
 - e. What is the total memory wasted?
- 5. The Fibonacci sequence, Fib(*n*), is used in science and mathematics as shown as follows. Write a recursive algorithm in pseudocode to calculate the value Fib(*n*), where *n* is an integer.

$$Fib(n) = \begin{bmatrix} 0 & \text{if } n = 0 \\ 1 & \text{if } n = 1 \\ Fib(n-1) + Fib(n-2) & \text{if } n > 1 \end{bmatrix}$$

6. Write an algorithm in pseudocode to find the value of x^n , where x and n are two given integers.