註:本次考試　<u>不可以參考自己的書籍及筆記</u>；　<u>不可以使用字典</u>；　<u>不可以使用計算器</u>。

I. 單選題 (每題2分)

1. Which of the following terms best describes circuit boards, keyboards, and disk drives?
   A. computing system　　B. computer hardware　　C. computer software　　D. stored memory

2. A compiler translates what language to what language?
   A. machine language into assembly language　　B. high-level language into machine language
   C. high-level language into assembly language　　D. assembly language into machine language

3. Which of the following is a popular central processing unit?
   A. Hertz　　B. Pentium 4　　C. random access memory　　D. Modem

4. Which of the following is a unit of frequency?
   A. Hertz　　B. Pentium 4　　C. cycles per second　　D. modem

5. Which of the following is a device that allows a computer to connect to the Internet?
   A. Hertz　　B. Pentium 4　　C. random access memory　　D. modem

6. The prefix nano refers to which power of ten?
   A. 10^{-12}　　B. 10^{-9}　　C. 10^{-6}　　D. 10^{-3}

7. The prefix micro refers to which power of ten?
   A. 10^{-12}　　B. 10^{-9}　　C. 10^{-6}　　D. 10^{-3}

8. The prefix mega refers to which power of two?
   A. 2^{10}　　B. 2^{20}　　C. 2^{30}　　D. 2^{40}

9. The prefix giga refers to which power of two?
   A. 2^{10}　　B. 2^{20}　　C. 2^{30}　　D. 2^{40}

10. A von Neumann computer architecture is best characterized by which of the following?
    A. input device　　B. read only memory　　C. random access memory　　D. stored-program concept

11. Which of the following manages the fetch-execute cycle?
    A. control unit　　B. arithmetic/logic unit　　C. auxiliary storage device　　D. random access memory

12. Which of the following constructs stores a value into a variable?
    A. assignment　　B. input / output　　C. repetition　　D. selection

13. Which of the following is volatile?
    A. compact disk　　B. auxiliary storage　　C. random access memory　　D. random access memory

14. Which of the following is a set of unambiguous instructions for solving a problem?
    A. algorithm　　B. pseudocode　　C. problem specification　　D. problem analysis

15. Which of the following constructs chooses to execute one action (or set of actions) or another?
    A. assignment　　B. repetition　　C. selection (if-then)　　D. selection (if-then-else)

16. Which of the following constructs allows an action (or set of actions) to be executed multiple times?
    A. assignment　　B. repetition　　C. selection (if-then)　　D. selection (if-then-else)

17. Which of the following describes the set of rules, symbols, and special words used to construct a program?
    A. semantics　　B. syntax　　C. programming language　　D. program statement

18. Which of the following describes a sequence of instructions written to perform a specified task?
    A. semantics　　B. syntax　　C. program　　D. problem specification

19. Which language is actually executed by the central processing unit of a computer?
    A. high-level language　　B. assembly language　　C. machine language　　D. virtual language

20. Which language uses mnemonics to represent instructions?
    A. high-level language　　B. assembly language　　C. machine language　　D. virtual language

21. Which of the following translates a high-level language program into machine code?
    A. procedure　　B. interpreter　　C. paradigm　　D. compiler

22. What does a loader do?
    A. loads a machine language program into memory　　B. loads an assembly language program into memory
    C. loads one instruction into the instruction register　　D.loads one operand into memory

23. Which of the following translates and executes program statements in sequence?
    A. procedure　　B. interpreter　　C.Bytecode　　D. compiler

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24. Which of the following is executed by the Java Virtual machine?
    A. procedure　　　　　　B. pseudocode　　　C.Bytecode　　　　D. algorithm

25. Which of the following produces in a true or false result?
    A. control structure　　　B. declaration　　　C. data type　　　　D. Boolean expression

26. Which of the following is the ability for a subprogram to call itself?
    A. argument　　　　　　B. parameter　　　　C. recursion　　　　D. nested logic

27. Which of the following is a language feature that enforces information hiding?
    A. encapsulation　　　　B. inheritance　　　C. polymorphism　　D. instantiation

28. Which of the following allows one class to be derived from another?
    A. encapsulation　　　　B. inheritance　　　C. polymorphism　　D. instantiation

29. C and Pascal belong to which language paradigm?
    A. imperative (or procedural)　B. functional　　　C. logic　　　　　D. object-oriented

30. C# and Java belong to which language paradigm?
    A. imperative (or procedural)　B. functional　　　C. logic　　　　　D. object-oriented

31. Which of the following is a generic term used for any device on a network?
    A. Modem　　　　　　　B. gateway　　　　　C. node　　　　　　D. router

32. In which of the following LAN configurations do all nodes share a single communication line that carries messages in both directions?
    A. bus topology　　　　B. ring topology　　　C. star topology　　D. metropolitan topology

33. In which of the following LAN configurations is there a center node to which all others are connected?
    A. bus topology　　　　B. ring topology　　　C. star topology　　D. metropolitan topology

34. Which of the following is a suite of protocols and programs that support low-level network communication?
    A. ping　　　　　　　　B. telnet　　　　　　C. TCP/IP　　　　　D. SMTP

35. D Which of the following is a high-level protocol used to specify the transfer of electronic mail?
    A. ping　　　　　　　　B. telnet　　　　　　C. TCP/IP　　　　　D. SMTP

36. Which of the following is an IP program that can be used to test whether a particular network computer is active and reachable?
    A. ping　　　　　　　　B. telnet　　　　　　C. TCP/IP　　　　　D. SMTP

37. Which of the following is made up of four decimal numbers separated by dots?
    A. IP address　　　　　B. domain name　　　C. MIME type　　　D. hostname

38. Which of the following would correspond to an organization, such as a university or company?
    A. IP address　　　　　B. domain name　　　C. MIME type　　　D. hostname

39. Which of the following indicates the format of a file attached to an email message?
    A. IP address　　　　　B. domain name　　　C. MIME type　　　D. hostname

40. Which of the following describes the process of dividing a message into small pieces and sending those pieces separately to the destination?
    A. backbone　　　　　　B. firewall　　　　　C. bandwidth　　　D. packet switching

II. 計算題 (每題 2 分)

41. Convert the following decimal number to binary: 2507

42. Convert the following decimal number to hexadecimal: 2507

43. Convert the following hexadecimal number to 8-bit two's-complement: -42

44. Perform the following hexadecimal addition: CBA + ABC

45. Perform the following hexadecimal subtraction: CBA - ABC

III. 問答題 (每題 5 分)

46. Draw the block diagram of the von Neumann architecture.

47. Draw the following three network topologies: rign, bus, and star, and also discuss their disadvantages.

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