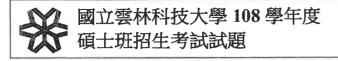| 國立雲林科技大學 108 學年度 | 系所：資管系 |
| 碩士班招生考試試題 | 科目：計算機概論(3) |

一、 選擇題：(15 題，每題 2 分，共 30 分)

1. Which of the following has the fastest transfer rate?
   a. T3　　　　　　b. ATM　　　　　c. Fractional T1　　　d. FTTP

2. Which of the following kinds of cable consists of a single copper wire surrounded by at least three layers: an insulating material, a woven or braided metal, and a plastic outer coating?
   a. coaxial　　　b. integrated　　c. twisted-pair　　　d. Fiber-optic

3. Which of the following technology, mainly we want to ensure the security of credit card transactions on the Internet?
   a. SET　　　　b. SMTP　　　　c. VoIP　　　　　　d. WAP

4. Which of the following is most likely to be used for mobile phone payments?
   a. Token ring　　b. Bluetooth　　c. IrDA　　　　　　d. NFC

5. Which of the following is a cache separate from the processor chip on the item shown in the accompanying figure?
   a. L1 cache　　b. L2 cache　　c. L3 cache　　　　d. L4 cache

6. Which of the following is contained on an integrated circuit and can act as an electronic switch that opens or closes the circuit for electrical charges?
   a. transistor　　b. switcher　　c. capacitor　　　　d. resistor

7. Which of the following is *not* an advantage of SSDs over hard disk?
   a. faster transfer time　　　　　　b. lighter weight
   c. more durable　　　　　　　　　d. higher storage capacity

8. Which of the following kinds of backup is another name for a selective backup?
   a. incremental　　b. archival　　c. partial　　　　d. continuous

9. CAM and MRP are examples of information systems used in _____.
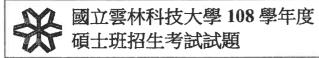   a. human resources　　　　　　b. engineering
   c. manufacturing　　　　　　　　d. sales

10. Which of the following best describes the role of a CRM specialist?
    a. Directs and implements an organization's use of Internet and social media marketing.
    b. Writes and develops web content and layouts so that they will appear at the beginning of search results.
    c. Integrates apps and data to provide an application that manages a company's relationships with customers.
    d. Plans and designs software and apps that consider a user's reaction to a program and its interface.

11. If someone feels distressed when deprived of computers and mobile devices, that person is said to suffer from what condition?
    a. Technological neurosis
    b. Technology overload
    c. Technology use syndrome
    d. Technological interference

12. Which of the following best describes the term, the Internet of Things?
    a. Convergence of technological capabilities from multiple devices into fewer.
    b. The ability of everyday devices to transmit data to and from the Internet using sensors.
    c. The network of devices and computers that connect to the cloud.
    d. The capability to store and locate information and data on the web.

13. Digital device _____ is the trend of computers and devices with technologies that overlap.
    a. transference   b. compatibility   c. merging   d. convergence

14. A(n) _____ engineer develops AI-based machines and programs.
    a. cognitive   b. virtual   c. intelligence   d. systems

15. On networks that use TCP/IP, _____ software can detect problems, such as why traffic is flowing slowly.
    a. data tracking
    b. speed monitoring
    c. information routing
    d. packet sniffing

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二、 配合題：(10 題，每題 2 分，共 20 分)

a. TCP/IP	b. Ethernet
c. cyberbullying	d. phishing
e. curation website	f. IaaS
g. bot	h. Zombie
i. bloatware	j. payload

( )1. Compromised computer or device whose owner is unaware the computer or device is being controlled remotely by an outsider.

( )2. Program that performs a repetitive task on a network.

( )3. The use of software to emulate hardware capabilities, enabling computers to scale, or adjust up or down, storage, processing power, or bandwidth as needed.

( )4. network protocol that defines how messages are routed from one end of a network to the other, ensuring the data arrives correctly

( )5. network standard that specifies no computer or device on the network should control when data can be transmitted

( )6. additional programs and apps included with operating systems, usually for profit

( )7. harassment, often involving teens and preteens, using technology

( )8. destructive event or prank a virus was created to deliver

( )9. scam in which a perpetrator sends an official looking email message that attempts to obtain personal and/or financial information

( )10. website or web app that allows users to collect or compile content from a variety of websites about a particular topic or theme

三、問答題：(5 題，共 50 分)

1. 請將十進位數字 79 分別以
   (a) 二進位表示 (3%)
   (b) 十六進位表示 (3%)
   (c) 八進位表示 (4%)

2. 請將算術運算式 A * ((B – (C + D)) / E) 轉換成(a)前序表示法 (b)後序表示法。(10%)

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3. 透過雜湊法的雜湊函數計算儲存位址時，有可能發生碰撞(collision)，請說明處理碰撞的方法。(10 分)

4. (a)請說明二元搜尋樹(binary search tree)的結構與特性　(b)請說明在二元搜尋樹中搜尋一筆資料的時間複雜度是多少？(10 分)

5. 關於關聯式資料庫系統，請分別解釋下列五個名詞：Relation, Attribute, Tuple, Normalization, SQL Injection.(10 分)