國立中正大學
108 學年度碩士班招生考試
試 題

[第 2 節]

系所組別	資訊管理學系－甲組
科目名稱	管理資訊系統

—作答注意事項—

※作答前請先核對「試題」、「試卷」與「准考證」之系所組別、科目名稱是否相符。

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6. 試題須隨試卷繳還。

國立中正大學108學年度碩士班招生考試試題

科目名稱：管理資訊系統　　本科目共 1 頁　第 1 頁

系所組別：資訊管理學系-甲組

1. Please define mobile advertising for a personalized approach and its importance relating to consumer purchase of products. Further, argue how information technology features can support the feasibility of personalization and explain it with an example. 16%

2. When there is a close relationship structure for innovation, entrepreneurship and information systems, please discuss how this relationship can occur in terms of the process of strategic/innovative use of information technology (IT) in organizations. Please explain the differences between strategic use of IT and traditional product innovation in business context? 17%

3. Please discuss the issues of de-intermediation and re-intermediation in e-commerce context and their differences in driving the growth of e-commerce. Provide two examples to illustrate their operations in terms of service and agriculture products. 16%

4. Please describe the definition of social commerce and its importance with purchase behavior as a new marketing approach. Further explain what are the major differences between social commerce and traditional internet marketing. 17%

5. Sharing economy is an emerging issue for effective resource management. Please explain it in comparison with traditional examples, such as hotel or taxi industry. Provide a real example to illustrate the operational process with the role of information and communication technology. What are the potential problems in practice for the new business model? 17%

6. When a possible relationship may exist for customer relationship management, big data analysis, and mobile advertising, please discuss it with your arguments in terms of their definitions and purposes. 17%

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試 題

[第 2 節]

系所組別	資訊管理學系－乙組
科目名稱	資料結構

—作答注意事項—

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1. For array "int list[100]", list[*i*]=*i*-1, for *i*=0…99. And &(list[99]) is 0x123456. What is (list+1)? (6 pt)

2. Please transform the expressions from prefix to postfix. (12 pt)
   (A) -+-/abc*de*ac (6 pt)
   (B) -/*a+bcdg (6 pt)

3. If moves are defined as: E be 0, SE be 1, S be 2, …, and NE be 7 in clockwise direction. Please draw out the path that the maze algorithm works. (12 pt)

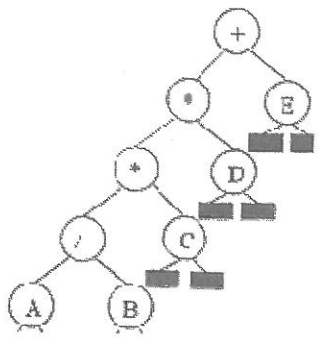
entrance →

0	1	0	0	0	1	1	0	0	0	1	1	1	1	1
1	0	0	0	1	1	0	1	1	1	0	0	1	1	1
0	1	1	0	0	0	0	1	1	1	1	0	0	1	1
1	1	0	1	1	1	1	0	1	1	0	1	1	0	0
1	1	0	1	0	0	1	0	1	1	1	1	1	1	1
0	0	1	1	0	1	1	1	0	1	0	0	1	0	1
0	1	1	1	1	0	0	1	1	1	1	1	1	1	1
0	0	1	1	0	1	1	0	1	1	1	1	1	0	1
1	1	0	0	0	1	1	0	1	1	0	0	0	0	0
0	0	1	1	1	1	1	0	0	0	1	1	1	1	0
0	1	0	0	1	1	1	1	1	0	1	1	1	1	0

→ exit

4. How much is the maximum path length for a maze if the maze size is m by n, where m>n ? (6 pt)

5. Write out binary tree's (20 pt)
   (A) Preorder traversal (5 pt)
   (B) Inorder traversal (5 pt)
   (C) Postorder traversal (5 pt)
   (D) Level order traversal (5 pt)



6. Write out the results of the following two sparse matrix multiplication in the sparse-matrix form. (12 pt)

2	3	5
0	0	1
0	2	2
1	0	-1
1	1	4
1	2	6

3	3	4
0	0	3
0	2	2
1	0	-1
2	2	5

7. Which(s) is/are true in the following descriptions? (20 pt)

(A) The complexity of the maze in the worst case is O(mp), where m and p are the row and column in the maze, respectively.

(B) In postfix, it needs to use parentheses to indicate the order of priority for operands.

(C) &a->val means (&a)->val

(D) a%b*c == 3 means (a%(b*c)) == 3

(E) a==3 || b==4 && c==5 means ((a == 3) || (b == 4)) && (c == 5)

8. Please complete the code of "Erase a circular list". (12 pt)

```
void cerase(poly_pointer *ptr)
{
    poly_pointer temp;   /* hint: avail */
    if (*ptr) {
        .......
        .......
        .......
        *ptr = NULL;
    }
}
```

國立中正大學
108學年度碩士班招生考試
試題

[第1節]

系所組別	資訊管理學系－甲組 乙組
科目名稱	計算機概論

—作答注意事項—

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- **Multiple Choice: (3% for each)**

1. Which is the correct sequence of lowest to highest level programming language?
   A. machine → assembly → COBOL → query
   B. assembly → machine → COBOL → query
   C. COBOL → machine → assembly → query
   D. query → assembly → machine → COBOL
2. The purpose of the linkage editor is to:
   A. create the libraries from the object and source modules.
   B. create the load modules from the object modules and libraries.
   C. create the load modules from the source modules and libraries.
   D. create the object modules from the source modules and libraries.
3. The term time slice refers to:
   A. the amount of time the operating system takes to perform its resource allocation tasks.
   B. the amount of time it takes a program to perform a calculation.
   C. the amount of time it takes a program to respond to a request from the user.
   D. the amount of time a program uses the CPU before being interrupted by the operating system.
4. The concurrent update problem is prevented by employing:
   A. record locks.
   B. validation rules.
   C. data integrity checks.
   D. backup and recovery.
5. Database systems that support sophisticated data analysis on large data sets are called:
   A. data analysis management systems.
   B. data mines.
   C. data warehouses.
   D. OLAP databases.
6. An arithmetic formula can contain all of the following except:
   A. a numeric value.
   B. a cell reference.
   C. a symbol such as +, -, *, or /.
   D. a label.
7. Which of the following is a true statement about encryption techniques?
   A. Exchanging keys online is safer via private key encryption than via public key encryption.
   B. RSA is a public encryption system.
   C. DES is a public encryption standard.
   D. Decryption is the process of scrambling a message into unreadable form.
8. The device that combines data streams from several devices in order to send these streams along a single high-speed line is called a:
   A. dedicated service line.
   B. multiplexer.
   C. front-end processor.
   D. common carrier.
9. How many separate on/off switches would be required in order to represent all the possible characters of the Unicode character code?
   A. 16
   B. 256
   C. 8
   D. 10

10. A plug-in is:
    A. a special Web site that allows users to gain additional services.
    B. a computer program that plugs into an expansion card or port.
    C. a small program embedded in a Web page that runs when the browser loads the page.
    D. a software component that enhances the browser's functionality.
11. A metasearch is:
    A. an error message that appears when a search engine fails to locate the information you need.
    B. a search that results in frequency counts of word phrases.
    C. a search that combines results from several search engines into a single list.
    D. a method of Web page searching via crawling along links from page to page.
12. The term *bricks-and-clicks* refers to:
    A. companies that combine traditional retail stores with Internet sales.
    B. companies that do business exclusively on the Internet.
    C. mail-order retailers doing business on the Internet.
    D. construction companies doing business on the Internet.
13. The difference between a VPN and an extranet is that:
    A. The VPN uses tunneling technology whereas the extranet is an Ethernet-based LAN.
    B. The VPN is an isolated network and the extranet is connected to the public Internet.
    C. The VPN is actually part of the public Internet whereas the extranet is separate from the Internet.
    D. The extranet relies on PPTP whereas the VPN is simply using TCP/IP.
14. With _____ transmission, a large block of characters is sent in a single stream.
    A. full-duplex
    B. block-oriented
    C. asynchronous
    D. synchronous
15. CSMA/CD is a:
    A. technique for configuring client/server computer networks.
    B. protocol for bus and star topologies.
    C. category of multiplexing devices.
    D. method of avoiding and/or detecting collisions of Ethernet transmissions.
16. A collection of similarly positioned tracks on multiple platters of a disk pack is called a:
    A. track.
    B. sector.
    C. cylinder.
    D. cluster.
17. Which of the following is the correct largest-to-smallest sequence of storage units?
    A. Character → record → field → database → file
    B. Character → field → record → file → database
    C. Field → character → record → file → database
    D. Field → character → record → database → file
18. A(n) _____ algorithm programmatically converts a record's key field value into a disk address, thereby supporting direct access.
    A. indexing
    B. key conversion
    C. colliding
    D. hashing

19. All of the following may be stored in registers except:
    A. program instructions.
    B. memory addresses.
    C. the CPU's instruction set.
    D. data.
20. Which of the following is the correct sequence of slowest-to-fastest RAM technologies?
    A. DRAM – SDRAM – RDRAM – SRAM
    B. DRAM – SRAM – RDRAM – SDRAM
    C. SDRAM – RDRAM – DDRAM – SRAM
    D. SRAM – SDRAM – DRAM – RDRAM

- **Briefly answer the following questions: (10% for each)**

1. Database-system implementers have paid much more attention to the ACID properties than have file-system implementers. Why does that make sense?
2. How does TCP/IP perform address resolution for network layer addresses and data link layer addresses?
3. Compare and contrast a linked list and an array.
4. Identify the advantages of artificial intelligence over natural intelligence.