Introduction to Computer Science: Final Exam

January 18, 2013

Question 1

In terms of the speed of storage a byte of data, what should be the correct rank of the following storage devices?

(a) Cache > Register > RAM > Hard disk

(b) RAM > Cache > Register > Hard disk

(c) Register > RAM > Cache > Hard disk

(d) Register > Cache > RAM > Hard disk

Question 2

The technique for a CPU operation in which multiple execution phases are performed in a single machine cycle is called _____.

(a) pipelining

(b) running

(c) stopping

(d) flowing

Question 3

To manage multiple processes running on a single CPU, one common method is called _____. Difference processes are assigned with different time slots. So that, in each time slot, there is only one process can use the CPU.

(a) Time-sharing processing

(b) Parallel processing

(c) Distributed processing

(d) None of the above.

Question 4

The startup instruction of a computer is stored in _____.

(a) POST

(b) BIOS

(c) CMOS

(d) RAM

Question 5

Which of the following is NOT an example of system software ?

(a) Window XP

(b) MS Office

(c) Linux

(d) SUN Solaris

Question 6

Which of the following is usually NOT a function of an operating system ?

(a) Manage file

(b) Provide user interface

(c) Mange database

(d) Manage system memory

Question 7

What is the file structure in Window XP?

(a) Tree

(b) Mesh

(c) Ring

(d) Link

Question 8

If the following C program segment is executed, what will we see?

```
for (i=1,i<5, i++)
  printf("*");
  printf("/n");
```

(a) *****

(b) *
    *
    *
    *
    *

(c) ****

(d) *
    *
    *
    *

Question 9

If the following C program segment is executed, what will be see?

```
i=0;
While (i<=2)
{ printf("*");
  i = i+1;
}
printf("%d\n", i);
```

(a) **2

(b) **3

(c) ***3

(d) ***4

Question 10

Given a recursive program as follows :

$$f(n) = f(n-2) + f(n-1); \quad f(0) = f(1) = 1.$$

What is the value of $f(5)$?

(a) 3

(b) 5

(c) 8

(d) 13

Question 11

Which of the following functions are NOT done by a compiler?

(i) Check logical error.

(ii) Correct logical error.

(iii) Check syntax error.

(iv) Correct syntax error.

Answer:

(a) (i) and (ii) only.

(b) (ii) and (iii) only.

(c) (i) and (iii) only.

(d) (i), (ii) and (iv).

Question 12

Anything that carries an electronic signal and interfaces between a sending device and a receiving device is called _____.

(a) telecommunication device

(b) telecommunication medium

(c) fiber optic

(d) co-axial cable

Question 13

Which of the following statement about client/server connection is correct ?

(a) Client/server connection is a physical connection technique.

(b) Client/server connection is a logical connection technique.

(c) Client/server connection is used in database application only.

(d) Client/server connection is used in local area network only.

Question 14

To send a data from one computer to another computer via Internet, we need

(a) to know the IP address only.

(b) to know the Port number only.

(c) to know the IP address and Port number.

(d) to know the email address only.

Question 15

TCP/IP is the most popular protocol in Internet. What is the full name of TCP?

(a) Transmission Control Protocol

(b) Transfer Control Protocol

(c) Transmission Concurrent Protocol

(d) Transfer Concurrent Protocol

Question 16

Which of the following server is used for storing the mapping between domain names and their IP addresses?

(a) NAT

(b) DNS

(c) Firewall

(d) None of the above.

Question 17

Suppose a web server (say Apache) has been installed in your notebook and your notebook has not connected to the Internet. Owing to testify the functionalities of the web server, one could open an IE and key in a virtual IP address. Which of the following IP is this virtual IP address?

(a) 255.255.255.255

(b) 192.168.10.1

(c) 127.0.0.1

(d) 0.0.0.0

Question 18

Which of the following technologies has the fastest transmission rate?

(a) 3G

(b) GSM

(c) GPRS

(d) PHS

Question 19

Which of the following has the fastest data transmission rate?

(a) Shielded Twisted-Pair

(b) Unshielded Twisted-Pair

(c) Coaxial Cable

(d) Fiber-Optic Cable

Question 20

When a computer uses TCP/IP to send data over the Internet, the data is divided into small pieces called _____.

(a) Nodes

(b) Packets

(c) Hubs

(d) Token

Question 21

For an Internet connection with transmission rate 56Kbps, what will be the maximum size of a file that can be transmitted in ONE MINUTES?

(a) 56K Bytes

(b) 3360K Bytes

(c) 56K bits

(d) 420K Bytes

Question 22

KaZaA, Gnutella and BT that allow Internet users to share files are an example of applications.

(a) P2P

(b) C2C

(c) P2C

(d) C2P

Question 23

Which of the following commands is provided by Windows XP to check the IP address of a computer?

(a) cmd

(b) ping

(c) ipconfig

(d) dir

Question 24

Which of the following statements about fibre optic is NOT correct?

(a) Fibre optic can facilitate high data transmission rate.

(b) Fibre optic is very thin and light.

(c) Signal sending through fibre optic can easily be corrupted by noise.

(d) Signal deterioration in fibre optic is very low.

Question 25

Which of the following statements about OSI reference model is NOT correct?

(a) The OSI reference model consists of seven layers.

(b) The 3rd layer is the transport layer.

(c) The 6th layer is the presentation layer.

(d) The 2nd layer is the data link layer.

Question 26

Which of the following network structure(s) is(are) can maintain proper function even if one machine has been down?

(i) Ring

(ii) Bus

(iii) Star

Answer:

(a) (i) and (ii) only.

(b) (ii) and (iii) only.

(c) (i) and (iii) only.

(d) (i), (ii) and (iii).

Question 27

Online shopping is an example of a _____ transaction.

(a) B2G

(b) B2B

(c) B2C

(d) G2G

Question 28

Which of the following DOT COM is(are) C2C market(s)?

(i) eBay

(ii) Alibaba

(iii) Payeasy

Answer:

(a) (i) and (ii) only

(b) (ii) and (iii) only

(c) (i) and (iii) only

(d) (i), (ii) and (iii)

Question 29

Which of the following system is particularly used for integrating the operations (including customer orders management, production schedule, logistics, and etc.) amongst an enterprise and its partners to improve their competitiveness in the industry?

(a) SCM

(b) ERP

(c) CRM

(d) HRM

Question 30

What is the main purpose of electronic certificate?

(a) It is used for authenticating the identity of an Internet user.

(b) It is a software serial number.

(c) It is an identity for an application software developer.

(d) It is the password of a PC user.

Question 31

Which of the following statements about secure electronic transaction (SET) is NOT correct?

(a) SET is able to secure all the messages routing between the buyer and the merchant.

(b) SET is able to protect the buyer information secure enough.

(c) SET is able to authenticate both buyer and merchant identities.

(d) SET is able to allow the merchant to access the buyer's personal information.

Question 32

Suppose that John would like to send a secret love letter to Mary. He wants Mary is the only one can read the letter and Mary can identity that the letter is really sent by John. Assume that both John and Mary have their private keys kept in their computers. Their public keys are made available for access over the Internet. Which of the following methods is the best way to send the letter?

(a) John encrypts the letter first by using his public key. While Mary has received the message, she decrypts the message by using John's public key.

(b) John encrypts the letter by using Mary's public key. While Mary has received the message, she decrypts the message by using her private key.

(c) John encrypts the letter first by using Mary's private key and then by using his public key. While Mary has received the message, she decrypts the message first by using John's private key and then by using her public key.

(d) John encrypts the letter first by using Mary's public key and then by using his private key. While Mary has received the message, she decrypts the message first by using John's public key and then by using her private key.

Question 33

Which of the following methods is NOT a correct method for encryption?

(a) John encrypts the letter first by using his public key. While Mary has received the message, she decrypts the message by using John's public key.

(b) John encrypts the letter by using Mary's public key. While Mary has received the message, she decrypts the message by using her private key.

(c) John encrypts the letter first by using Mary's private key and then by using his public key. While Mary has received the message, she decrypts the message first by using John's private key and then by using her public key.

(d) John encrypts the letter first by using Mary's public key and then by using his private key. While Mary has received the message, she decrypts the message first by using John's public key and then by using her private key.

Question 34

Which of the following technologies is recommended for Wi-Fi security protection?

(a) WEP

(b) WPA

(c) WPA2

(d) All of them.

Question 35

Which of the following malicious software is able to process by itself without user intervention?

(a) Worm

(b) Trojan Horse

(c) Spam mail

(d) Virus

Question 36

How does digital signature work?

(a) On the sender side, (1) a message digest is generated using message digest algorithm. (2) An encrypted message digest is generated by using sender's public key. (3) The original message and the encrypted message digest are sent to the receiver. On the receiver side, (4) the encrypted message digest is decrypted by using sender's private key. (5) The original message is then passed to the message digest algorithm to generate the message digest. (6) If both message digests are identical, sender's identity is authenticated.

(b) On the sender side, (1) a message digest is generated using message digest algorithm. (2) An encrypted message digest is generated by using sender's private key. (3) The original message and the encrypted message digest are sent to the receiver. On the receiver side, (4) the encrypted message digest is decrypted by using sender's public key. (5) The original message is then passed to the message digest algorithm to generate the message digest. (6) If both message digests are identical, sender's identity is authenticated.

(c) On the sender side, (1) an encrypted message generated by using sender's public key. (2) The encrypted message is sent to the receiver. On the receiver side, (3) the encrypted message is decrypted by using sender's private key.

(d) On the sender side, (1) an encrypted message generated by using sender's private key. (2) The encrypted message is sent to the receiver. On the receiver side, (3) the encrypted message is decrypted by using sender's public key.

Question 37

While a server is being attacked by large amount of packets which are sent from various different locations at the same period of time, we call this attack the _____.

(a) Dictionary attack

(b) Distributed Denial-of-Service attack

(c) Exhaustive search attack

(d) Guessing attack

Question 38

For any symmetric encryption algorithm, the sender and the receiver use _____ to encrypt and decrypt messages. For any asymmetric encryption algorithm, the sender and the receiver use _____ to encrypt and decrypt messages.

(a) the same key, the same key

(b) the same key, different keys

(c) different keys, the same key

(d) different keys, different keys

Question 39

Which of the following control is NOT managed by a Firewall?

(a) Data error control

(b) Behavior control

(c) User control

(d) Service control

Question 40

Which of the following statements about network protocol is NOT correct?

(a) Protocol is a set of rules that ensure communications among computers of different types and from different manufacturers.

(b) Protocol is a set of rules that determine the form of signal being transmitted, encoded, the way that signal error is detected and corrected, etc.

(c) Protocol is the set of rules proposed by IBM only.

(d) Whenever a new technology has been introduced and later became commonly used, it can be filed as a new protocol.

Question 41

Which of the following languages is the earliest markup language for web page design?

(a) XML

(b) HTML

(c) Javascript

(d) PHP

Question 42

If one would like to highlight the name of a book (say "Introduction to Computer Science") in italic, which of the following tag should be used?

(a) `<b>Introduction to Computer Science</b>`

(b) `<a>Introduction to Computer Science</a>`

(c) `<p>Introduction to Computer Science</p>`

(d) `<i>Introduction to Computer Science</i>`

Question 43

In the source code of a webpage, there is a segment looking like this:

```
<ol>
<li> PhD CSE CUHK
<li> MPhil CSE CUHK
<li> BENG EE PolyU
</ol>
```

Once this webpage is browsed by IE, what will we see?

(a) a. PhD CSE CUHK
    b. MPhil CSE CUHK
    c. BENG EE PolyU

(b) 1. PhD CSE CUHK
    2. MPhil CSE CUHK
    3. BENG EE PolyU

(c) o PhD CSE CUHK
   o MPhil CSE CUHK
   o BENG EE PolyU

(d) * PhD CSE CUHK
   * MPhil CSE CUHK
   * BENG EE PolyU

Question 44

In building a webpage, we can use the anchor tag

`<a href="...">...</a>`

to link to a URL. Which of the following files are allowable for this anchor tag to link to?

(a) Image file

(b) Video file

(c) Homepage

(d) All of them.

Question 45

Which of the following codes is correct?

(a) `<B><I>Computer Science</B></I>`

(b) `</B></I>Computer Science<B><I>`

(c) `<B><I>Computer Science</I></B>`

(d) `</B></I>Computer Science<B><I>`

Question 46

In HTML, the tag

`<BR>`

is used for _____,

`<P>`

is used for _____.

(a) Bold face, Big font

(b) Bold face, New paragraph

(c) Line break, Big font

(d) Line break, New paragraph

Question 47

In EXCEL, suppose we have on cell C2 an equation

`=$A$1*B2.`

If this equation is copied and pasted to cell C3, what will the equation be?

(a) `=$A$1*B2`

(b) `=$A$2*B3`

(c) `=$A$1*B3`

(d) None of the above.

Question 48

In EXCEL, suppose we want to evaluate the total of the values from B1 to B10 and display the value on B12. What should the equation be put on cell B12?

(a) `=SUM(B1:B10)`

(b) `=AVERAGE(B1:B10)`

(c) `=COUNT(B1:B10)`

(d) `=MAX(B1:B10)`

Question 49

Suppose the mid-term examination scores of the students are put in cells A1 to A10. Then, we would like to show from B1 to B10 if the student's performance is GOOD (score is above or equal to 90) or POOR (score is below 60). So, we need first to add an equation on B1 and then paste that equation to B2, B3, $\cdots$ B10. What should the equation be put on cell B1?

(a) `=IF(A1>90,"GOOD", IF(A1<60,"POOR",""))`

(b) `=IF(A1>90, "GOOD", A1<60, "POOR")`

(c) `=IF(NOT(A1>90,A1<60), "GOOD","POOR"))`

(d) `=IF(A1<60,"POOR", IF(A1>=90,"GOOD",""))`

Question 50

The values in the cells A1, A2, A3, A4, A5 and A6 are 45, 64, 44, 76, 60 and 87 respectively. Cell B2 is used for showing the number of records that are larger than 60. Which of the following statements about the equation and the value shown in B2 is correct?

(a) The equation is

```
=COUNTIF(A1:A6; >60)
```

and its value is 4.

(b) The equation is

```
=COUNTIF(A1:A6; >60)
```

and its value is 3.

(c) The equation is

```
=COUNTIF(A1:A6; ">60")
```

and its value is 4.

(d) The equation is

```
=COUNTIF(A1:A6; ">60")
```

and its value is 4.

Question 51

Suppose the values in cells A1, A2 and A3 are 1, 2 and 3 respectively. The equation in cell A4 is

```
=$A$1+$A$2+$A$3.
```

What would be the value of A4 if the content of A2 is CUT AND PASTED to cell B2.

(a) 0

(b) 4

(c) 6

(d) Not a number

Question 52

Suppose the original values in cells A1 and A2 are 13.24 and 15.30. The equation in A3 is

```
=$A$1+$A$2.
```

What will be the values shown on the spread sheet if A1, A2 and A3 are formatted to show integer only?

(a) 14, 16, 29

(b) 14, 16, 30

(c) 13, 15, 28

(d) 13, 15, 29

Question 53

In EXCEL, suppose we want to select multiple isolated cells, which key should be pressed during selection process?

(a) CTRL

(b) SHIFT

(c) ALT

(d) DEL

Question 54

Which of the following software is a database system?

(a) WORD

(b) EXCEL

(c) ACCESS

(d) Chrome

Question 55

Which of the following purpose is not a main function of database management systems?

(a) Managing data replication.

(b) Managing data security.

(c) Managing data integrity.

(d) Improve data processing efficiency.

Question 56

If a block of cells is copied from an EXCEL file and pasted onto a WORD file as a table, which of the following statement(s) is(are) correct?

(i) The formate of the block of cells including the values and equations are pasted.

(ii) While double click the table, we can edit and process the data in the same way as in the EXCEL environment.

(iii) Only the values of the cells are pasted onto the WORD file.

Answer:

(a) (i) and (ii) only.

(b) (ii) and (iii) only.

(c) (i) and (iii) only.

(d) (i), (ii) and (iii).

Question 57

In OFFICE 2003, no matter EXCEL, WORD or Powerpoint, their user interfaces look very much the same. Especially, the two leftmost buttons on the top menu bar must embrace with the characters "F" and "E". What do "F" and "E" stand for?

(a) "F" stands for "Formate" and "E" stands for "Edit".

(b) "F" stands for "File" and "E" stands for "Extra".

(c) "F" stands for "File" and "E" stands for "Edit".

(d) "F" stands for "Formate" and "E" stands for "Extra".

Question 58

Which of the following(s) is(are) the feature(s) provided by WORD for editing a paper?

(a) Grammar check

(b) Spelling check

(c) Word count

(d) All of the above

Question 59

A student has found a very useful table on the Internet. It shows the number of tourists coming to Taiwan in the last FIVE year. He would like to add these data to his EXCEL file. What do you recommend what he should do?

(a) Cut the table and paste it to the EXCEL file.

(b) Cut the table and selectively paste it to the EXCEL file.

(c) Cut the table and paste it to a NOTEPAD file. Next, edit the file so that all the redundant characters are removed. Finally, copy the text data and paste it to the EXCEL file.

(d) It is just five data. Manually copy them in the EXCEL file.

Question 60

If you use WORD to open an HTML file, what will you see?

(a) The source code of the HTML.

(b) The webpage as it is opened by IE. All images will be shown as well.

(c) The webpage as it is opened by IE. Many images will be missing.

(d) It is not possible to use WORD to open an HTML file.