There are 10 sample questions. (There will be around 40 multiple choice questions in the live paper.)

1. The following gives part of the specifications of a personal computer:

   Intel® Pentium® III processor 733 MHz
   128 MB SDRAM
   20 GB hard disk
   3.5” 1.44 MB floppy disk drive
   4 PCI slots
   2 USB ports
   1 serial port
   1 parallel port
   2 PS/2 ports
   15-pin video port

Which of the following connections are correct?

(1) connecting a monitor to the 15-pin video port
(2) connecting a mouse to the PCI slot
(3) connecting a modem to the serial port

A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

(2002 IT II, 18)

2. What is a search engine on the Internet?

A. It is a form of hardware used to search for documents with specified keywords on the Internet.
B. It is a web page used to search for documents with specified keywords on the Internet.
C. It is an instruction used to search for documents with specified keywords on the Internet.
D. It is a program used to search for documents with specified keywords on the Internet.

(2002 IT II, 30)

3. Which part of the following address is called a domain name?

   "http://www.hkea.edu.hk/hkale-hkcee/index.html"

A. http
B. www.hkea.edu.hk
C. hkale-hkcee
D. index.html

(2002 IT II, 32)
What is the value of C when the work flow of the flowchart reaches END?

A. 2  
B. 9  
C. 10  
D. 11

5. Under which of the following condition(s) will the copyright of a licensed software item be violated?

(1) making a copy of the software for sale  
(2) making a copy of the software for a gift  
(3) using the software in public areas

A. (1) only  
B. (1) and (2) only  
C. (2) and (3) only  
D. (1), (2) and (3)

(2002 IT II, 8)

6. Which of the following statements about a client-server local area network are correct?

(1) A local area network consists of a number of workstations connected together.  
(2) Workstations of a local area network may share the same resources such as data files, application packages and printers.  
(3) A local area network requires a network operating system to control the flow of data between workstations.

A. (1) and (2) only  
B. (1) and (3) only  
C. (2) and (3) only  
D. (1), (2) and (3)

(2002 IT II, 27)

2005-CE-CIT 1A (Sample)
7. Which of the following is/are data verification?
   (1) checking to see if the data is mistyped
   (2) entering data twice by two different operators
   (3) checking to see if the data is reasonable
   (4) printing a hard copy for checking against the original data

   A. (3) only  
   B. (1) and (2) only  
   C. (1), (2) and (4) only
   D. (1), (3) and (4) only

   (2002 CS II, 8)

8. Which of the following are advantages of using electronic spreadsheets over manual spreadsheets?
   (1) The data format can be changed more easily.
   (2) Charts can be drawn more easily.
   (3) Calculations can be performed faster.

   A. (1) and (3) only
   B. (1) and (2) only
   C. (2) and (3) only
   D. (1), (2) and (3)

   (2002 CS II, 15)

9. Which of the following statements about a compiler and an assembler is correct?

   A. They take equal time to translate a program.
   B. They translate high level language programs into machine code programs.
   C. They generate a machine code program at the end of translation.
   D. They translate one instruction at a time as the program is executed.

   (2002 CS II, 33)

10. Which of the following is/are (an) example(s) of an electronic funds transfer system?

    (1) an electronic payroll transfer system
    (2) an electronic inventory system
    (3) an automatic teller machine

    A. (1) only
    B. (1) and (2) only
    C. (2) and (3) only
    D. (1) and (3) only

    (2002 CS II, 2)
### Instructions:

1. Write your Candidate Number, Centre Number and Seat Number in the spaces provided.
2. Answer all questions.
3. Write your answers in the spaces provided in this question-answer book.
4. Supplementary answer sheets will be supplied upon request. Write your Candidate Number on each sheet and fasten them with string inside this book.

<table>
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<th>Examiner's Use Only</th>
</tr>
</thead>
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<td>Examiner No.</td>
</tr>
</tbody>
</table>

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<th>Q.2</th>
<th>Q.3</th>
<th>Q.4</th>
<th>Q.5</th>
<th>Total</th>
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</tbody>
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Checker's Use Only

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<tr>
<th>Checker No.</th>
<th>Total</th>
</tr>
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</table>
A secondary school has been using several English-version office automation software packages which consist of word processing software and spreadsheet software. The word processing software is used to prepare administrative documents, teaching notes, assignments and test papers while the spreadsheet software is used to handle school accounting data and the academic records of students.

This year, the school plans to upgrade the office automation software packages to increase the use of information technology in teaching, to improve daily communication among its staff and students and to computerize its student attendance record system.

(a) Name THREE additional types of software that should be included in this upgrade exercise. State ONE corresponding application for each type of software.

- Graphic and/or presentation package/software
  - produce slides and self learning materials

- Browser
  - present teaching materials

- Database management system
  - manipulate all student attendance data, such as number of absences

(6 marks)

In addition, the school is changing its language for teaching from English to Chinese in all Secondary One classes. As a result, the school has to acquire an office automation software package which supports both Chinese and English.

(b) Some teachers have difficulty using a keyboard to input Chinese characters. Name TWO alternative methods that can be used to input Chinese characters.

- Chinese writing tablet
- Chinese speech recognition system

(2 marks)

(c) A teacher makes use of the upgraded word processing software to prepare an English test paper in school. However, he cannot open the document at home with his old English version word processing software.

(i) Explain why the teacher cannot open the document.

Files of the two packages are not compatible.

(ii) Suggest ONE method the teacher can use to avoid the problem without any additional cost.

He may use the "save as" function to save all documents in old English format after modification in school.

(4 marks)
2. Peter is an architect. He uses a computer to prepare architectural plans, to communicate with his friends through the telephone line and to search for information on the international computer network. He has decided to buy a new computer.

Below is a table comparing two types of microcomputer:

<table>
<thead>
<tr>
<th>Type</th>
<th>Notebook</th>
<th>Desktop</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU</td>
<td>2 GHz</td>
<td>2.5 GHz</td>
</tr>
<tr>
<td>Main Memory</td>
<td>512 MB</td>
<td>256 MB</td>
</tr>
<tr>
<td>Hard disk</td>
<td>20 GB</td>
<td>60 GB</td>
</tr>
<tr>
<td>Monitor</td>
<td>10.4” LCD</td>
<td>15” VGA</td>
</tr>
<tr>
<td>Modem</td>
<td>-</td>
<td>56 Kbps</td>
</tr>
<tr>
<td>Price</td>
<td>$11980</td>
<td>$8999</td>
</tr>
</tbody>
</table>

(a) After considering his needs, Peter chooses to buy the Desktop.

(i) State TWO reasons why the Desktop could better meet Peter’s needs.

- CPU runs faster
- cheaper price

(ii) State TWO functions of a modem.
- to convert digital signal into analog signal (modulation)
- to convert analog signal into digital signal (demodulation)

(b) (i) Name ONE type of output device that Peter should add to the Desktop if he wants to produce hardcopies of poster-size architectural drawings.

Plotter

(ii) Besides the keyboard, name TWO types of input device that would help Peter input text from a magazine.

voice/speech recognition device
hand-writing input device

(c) Peter sends electronic mail to his friends through the computer network. In addition to saving postage, name TWO advantages of sending information by electronic mail rather than by using the postal service.

- faster in delivering mail
- save labour
(d) There is quite a lot of ‘freeware’ (software that is distributed free of charge) on the computer network. Peter has decided to download some freeware.

(i) State TWO precautions that Peter should take to protect the files in his computer before he starts to use the freeware.

- run an anti-virus program
- backup important data and files

(ii) Peter resells the freeware to other people. Do you think this violates the copyright law? Explain.

Yes, Peter violates the copyright laws. He is not the owner of the freeware, therefore, he does not have the right to distribute the software.

(modified from 1999 CECS 1B Q1)

Mr. Wong is the owner of a large bookstore in a shopping centre in Hong Kong operating 12 hours a day. All books are sold to customers directly in the bookstore. He would like to build a web site for his bookstore to further develop his book selling business. Mary is a consultant. After talking with Mr. Wong, she proposed to establish a web site by following the steps below:

- Define the contents of the web site.
- Scan pictures and book covers.
- Compose the web pages.
- Set up a data connection line to connect to the Internet.
- Set up a web server to store the web pages.
- Set up an electronic mail server to handle electronic mail.
- Set up a database server to process customer information and enquiries.

Amy, Betty, Catherine and David are the senior assistants in the bookstore. They discussed the situation with Mr. Wong. Below are some of their comments:

Mr. Wong: ‘Amy is experienced in managing information technology (IT) projects. She should take up this new task.’

Amy: ‘I need two more IT professionals to help me compose the web pages.’

Betty: ‘We have good face-to-face enquiry customer service in our shop. I do not think we need the electronic mail service. It is redundant.’

Catherine: ‘We should not provide too many services at the very beginning. We only need to provide essential services on the web site so that the customers can enjoy the services as if they are visiting our shop.’
(a) (i) What type of software can be used to view the web pages via the Internet?

Web browser

(ii) When ordering books through the Internet, customers are afraid that their personal information may be disclosed to unknown parties during data transmission. Suggest one method to protect data from unauthorised access.

We can use data encryption to protect data from unauthorised access.

(3 marks)

(b) Mr. Wong disagreed with Betty’s opinion. Though electronic mail service cannot provide face-to-face customer service, it has some advantages for providing enquiry service. State THREE advantages.

1. Electronic mail service can provide 24-hour enquiry service.

2. Customers can make enquiries all over the world.

3. Staff can answer customers’ enquiries on batch.

(3 marks)

(c) Mr. Wong agreed with Catherine’s opinion. Suggest and describe THREE essential services that the web site should provide in addition to the electronic mail service.

1. The web site can provide a search engine for customers to search books.

2. The web site can provide online payment service for customers to order /buy books.

3. The web site can display new release books so that customers can collect more information about our store.

(6 marks)

(modified from 2002 CECS 1C Q10)
4. Peter and Mary are participating in a computer-controlled toy car maze competition. They have to complete five tasks for the competition as follows:

1. buy a toy car
2. build the interface between the car and the control computer
3. write a control program to control the movements of the car
4. write a program to guide the car to exit from a maze
5. write documentation for the competition

Peter and Mary plan to write programs in high level and low level programming languages for task 3 and task 4.

(a) Which one of the above programming languages is more suitable for writing the program for task 3? Give TWO reasons for your choice.

*Low level programming language*

- program usually runs faster and the car moves and responses faster
- controls the physical hardware directly

(3 marks)

(b) Which one of the above programming languages is more suitable for writing the program for task 4? Give TWO reasons for your choice.

*High level programming language*

- easy to program/debug
- easy to understand the source code

(3 marks)

Peter and Mary are writing a user’s manual and a programmer’s guide.

(c) (i) Name any TWO items that should be included in the user’s manual.

how to setup the car

how to setup the program

(ii) Name any TWO items that should be included in the programmer’s guide.

description of algorithms

file or database formats

(4 marks)

(d) Suggest TWO programming practices that can improve the readability of a high-level program.

use meaningful variable names

write enough comments

(2 marks)

(modified from 2000 CECS 1B Q5)
5. (a) The hardware components of a certain microcomputer are connected by a bus as shown in the diagram below:

```
<table>
<thead>
<tr>
<th>hard disk</th>
<th>random access memory (RAM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>read only memory (ROM)</td>
<td>visual display unit (VDU)</td>
</tr>
<tr>
<td>central processing unit (CPU)</td>
<td>printer</td>
</tr>
<tr>
<td></td>
<td>keyboard</td>
</tr>
</tbody>
</table>
```

(i) Which of the above hardware components are output devices?

- **VDU, printer**

(ii) Give TWO advantages of using a hard disk instead of using a floppy disk.

- **Larger storage capacity**
- **Faster speed**

(iii) A student has written a program. He wants to save his program for future use. Explain why the program should be saved

1. to the hard disk but not to RAM;
2. to the hard disk but not to ROM.

   (1) **RAM is volatile**

   (2) **ROM is read-only**

(iv) Each time the microcomputer is switched on, a program will be run to first start up the computer. Explain why this program should be stored in ROM instead of on the hard disk.

- **The CPU executes programs in the primary memory only.**

- **ROM is non-volatile and therefore the program is available in the ROM when the microcomputer is switched on.**

(8 marks)
(b) Tom has brought a new computer table as shown in Figure 1. The design of the table (labelled as ① and ②) is not suitable for Tom. What are TWO possible health problems when he works at the computer table for a long time? Explain briefly.

1. Back pain:

The design of the table in ① is too small so Tom has to bend forward to use the keyboard.

2. Leg pain:

The design of the table in ② is too high so Tom’s feet cannot firmly rest on the floor.

(modified from 1997 CECS 1B Q2)

END OF SECTION B