Hong Kong Examinations and Assessment Authority
Hong Kong Certificate of Education Examination 2007
Computer and Information Technology Paper 3 (Coursework)

Module A (Algorithm and Programming): Sudoku Game

According to www.wikipedia.org, Sudoku is a logic-based placement puzzle. The aim of the puzzle is to enter numerical digits from 1 to 9 into cells so that digits in each row, column, and region are unique. An example of a Sudoku puzzle is shown below:

	8	2			7			
5						7		
	1					3	9	6
			4		9	6		
3								4
		4	3		2			
9	7	3					1	
		1						8
			1			9	3	

Candidates should study the standard game rules, standard game play and its variants.

Candidates are required to write a program for playing a Sudoku puzzle game. The coursework should include the following:

- Define game rules
- Design the layout of the game board
- Set up puzzle(s)
- Set up an interface to accept user input
- Design a method to verify user's solution

Candidates may modify the standard game rules and the standard layout of the game board so as to make the game more interesting and challenging.

In the coursework report, candidates should justify the use of any data structures and algorithms in the implementation.

Module B (Organisation of Computer): Evolution of Secondary Storage and its Impact

Candidates are required to:

(1) Study the development of secondary storage and its impact on the development of computer systems, computer applications and society. In the coursework report, outline the characteristics of different secondary storage systems, the principles of representing and storing data, the advantages and limitations, and the impact on users. Candidates may confine their discussion to three different storage technologies.

(2) Based on your own experience, discuss the use of one or more secondary storage systems in a daily application.

Suggested time allocations for Part (1) and Part (2) are 70% and 30% respectively.

Module C (Data Communications and Networking): Cyber Café in school

The Principal of a secondary school plans to establish a cyber café in his school to provide computer and network services for students.

Candidates are required to design a network environment for the cyber café. The following issues may need to be considered in the design:

- Integration of the school network and the network of the cyber café
- User identity authentication
- Information security
- Method of network connection
- Costing
- Network connection speed
- Add-on services

Candidates are required to analyze the problem and situation, identify different needs, consider the various technologies and products available, and produce a feasible design for the cyber café. Documents such as clear user instructions, simple fault diagnostic flow charts, system acceptance checklists etc. could be included, if appropriate.

Module D (Multimedia Production and Web Authoring): Personal Portals

Personal portals are gaining increasing attention from Internet content providers and surfers. A user can customize a web page hosted by a personal portal publisher (e.g. Xanga.com) to include information and materials according to his/her own needs or taste. The web page may then act as the entry point for the user to access various resources on the Internet.

Candidates are required to

(1) Discuss what features/technology should be provided by a personal portal publisher to facilitate user customization and how these features/technology should be evaluated. Study and compare the features/technology offered by two existing personal portal publishers.

(2) Suppose that your school would like to set up a personal portal for each student.
   - Propose the features/technology that should be provided for the students to design their own student personal portal. The proposed elements should contain multimedia materials and interactive features.
   - With a preset profile of two or more students, design a personal portal for each student which includes the proposed features/technology and illustrate the layout of the design in the form of web pages.

Suggested time allocations for Part (1) and Part (2) are 30% and 70% respectively.

END OF PAPER