Hong Kong Examinations and Assessment Authority
Hong Kong Certificate of Education Examination 2006
Computer and Information Technology Paper 3 (Coursework)

Module A (Algorithm and Programming): Seating Plan

Candidates are required to write a computer program for the school annual dinner registration. During the data collection stage, personal information of the participants is required to be input into the program, i.e. *name of participant, year of graduation, sex, age, employment, number of seats required, etc.*

The program should validate all input data and also have functions to amend the input data.

At the end of the registration period, the program should generate a seating plan of the anniversary dinner for the organising committee in a text file. Candidates should clearly define the seat allocation rules and any other system parameters such as table size. Some possible seat allocation rules are as follows:

- Grouping family members together
- Balancing male and female participants
- Grouping similar age participants
- Grouping similar employment participants

The program should consider at least TWO seat allocation rules at the same time to generate a seating plan. Candidates should note that there may not exist a perfect seating plan that satisfies all the stated rules. An approximate arrangement is acceptable.

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

Module B (Organisation of Computer): Computer Systems for People with Disabilities

The use of computers to support business operations and learning activities is essential nowadays. Yet, for people with physical disabilities, such as the visually impaired and people who have difficulties in using their fingers to type, common computer systems are not suitable for them to use.

Candidates are required to:

(1) Investigate the limitations of common computer systems that restrict their use by people with different forms of physical disability. Carry out a survey of the devices and software that can enhance computer systems to help remove or alleviate these restrictions. In the coursework report, describe the findings of the survey with appropriate illustrations.

(2) Based on your own design, propose some devices and/or software that you think can enhance the computer systems to support people with at least one form of physical disabilities. You should state clearly the functions and benefits of your proposal, BUT you are not required to implement the design. Illustrate your design with sketches or other media as appropriate.

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

Module C (Data Communications and Networking): Virtual Learning Area

Candidates are required to design a network environment for the study corner, also known as the Virtual Learning Area (VLA), of a youth centre. The VLA is a user-friendly area for collaborative learning, small group teaching and project work. The VLA may comprise, but is not limited to, the following networking facilities:

- A networked environment for computers to share resources
- Some kind of log-in system to manage the rights of users to access the network
- Network printing and Internet access facilities for all computers connected to the network
- A temporary file sharing function for users of the virtual public areas (e.g. network drives)

The networking environment should cater for the following:

(a) Users of desktop computers installed in the area;
(b) Users of bring-your-own notebooks via cable connection;
(c) Users of bring-your-own notebooks via wireless connection.

Candidates are required to analyse the problem and situation, identify different needs, consider the various technology and products available, and hence produce a feasible design for the VLA.

The VLA should be a user-friendly environment for both the administrator and users who may not have expertise in computer networks. Clear user instructions, simple fault diagnostic flow charts, etc. could be considered wherever appropriate.

Module D (Multimedia Production and Web Authoring): Vital Campus

Candidates are required to develop web pages that can be read by users with a common personal computer system. The web pages are designed for a campaign promoting healthy exercises that can be carried out by teachers and students as a part of daily school activities. The web pages must:

- Provide related background information and the benefits of the proposed exercises
- Contain at least 5 pages
- Contain multimedia information with user-friendly access mechanisms, such as hyperlinks
- Contain features for attracting more visitors

END OF PAPER