Hong Kong Examinations and Assessment Authority
Hong Kong Certificate of Education Examination 2011
Computer and Information Technology Paper 3 (Coursework)

Module A (Algorithm and Programming): Inter-School Soccer Tournament

There are 16 school teams or more joining an Inter-School Soccer Tournament. The teams are divided into at least four groups and play soccer games in several rounds, from a group stage to a knockout stage, to win the championship.

Candidates are required to write a computer program to work out the draw of all games from the group stage to the knockout stage. The program should read the information on school teams stored in a text file. Candidates should clearly define the rules of the draw and any other system parameters such as the total number of school teams. Some possible rules of the draw are as follows:
■   ranks in previous years
■   district/region
■   seeded teams

Candidates should demonstrate that they are aware of the reusability of the program design and should justify the use of any data structures and algorithms in the implementation.

Module B (Organisation of Computer): Computer Recycling Programme in Schools

A organisation which runs a number of schools would like to introduce a computer recycling programme. The programme aims to collect and process used computers and computer accessories for reuse and recycling.

Candidates are required to write a proposal on the computer recycling programme. The proposal should include:

(1)   a list of computers and computer accessories to be collected, with detailed specifications,

(2)   a workflow for checking and reassembling the collected items, with major steps involved,

(3)   the installation procedure for basic software and a procedure for testing the software and hardware before the distribution of the used computers, and

(4)   related documents and/or video demonstrations, if appropriate.

Module C (Data Communications and Networking): Joint Schools Information Day for Primary Six Students

A school organisation would like to organise a Joint Schools Information Day for Primary Six students in a secondary school, to introduce secondary school life. Exhibition booths would be located all over the secondary school, including classrooms, halls and playgrounds. Computers and network services will be provided for Internet access and school server connection in order to facilitate demonstrations and presentations in the booths.   Students will be able to use mobile devices to vote on their favourite booths.

The following issues may need to be considered:
■   IP address management
■   data security and access control
■   network infrastructure design and its limitations
■   types of network connection
■   other special network requirements

Candidates are required to design a network environment for the Joint Schools Information Day. Documents and/or video demonstrations such as clear user instructions, log-on instructions, simple fault diagnostic flow charts, system test plan and system acceptance checklists could be included, if appropriate.

Module D (Multimedia Production and Web Authoring): Weather Forecasting Web Site

The weather forecasting agency of a city plans to develop a web site to report and broadcast weather forecasts to the public. The agency will provide 7-day weather forecast information, such as ambient temperatures and tropical cyclone track and position. It will also provide real-time weather information in different regions of the city.

Candidates are required to make a proposal to the agency, with the following requirements.

(1)   Give three examples of weather information to be reported and suggest how multimedia elements can be used to enrich the content and present information to users in a user-friendly manner.

(2)   Multimedia elements, user-friendly access mechanisms and web accessibility should be considered in order to present weather information effectively and make navigation more convenient.

Design and create the layout of some web pages of the weather forecasting web site for the agency using HTML. The layout should include at least three features that can help users grasp weather information quickly. These features should provide appropriate functions that allow users to view different weather information in different regions as well.

Suggested time allocations for Part (1) and Part (2) are 40% and 60% respectively.

END OF PAPER