SPECIMEN

GENERAL CERTIFICATE OF SECONDARY EDUCATION
COMPUTING

A453CA

Unit A453: Programming project

Specimen Controlled Assessment Material

INSTRUCTIONS TO TEACHERS

- Please refer to Section 4 of the GCSE Computing specification for instructions on completing controlled assessment tasks;
- Each task can be contextualised appropriately to suit facilities available in your centre;
- The marking criteria should be available whilst completing the tasks;
- The quality of written communication will be assessed in the testing section;
- The total number of marks for this unit is 45.

OCR is an exempt Charity

[Turn over

This scenario consists of <u>three</u> tasks

Candidates should complete all tasks.

The tasks are set so as to enable all the techniques identified in the specification to be demonstrated in their solution. The tasks provide opportunities to demonstrate a range of skills and all three tasks contribute to the overall mark awarded for this assessment. Marks are awarded for using the appropriate skills and techniques effectively and efficiently to produce a solution to these three tasks. Not all techniques will be required for each of the subtasks.

Task 1 Scratch program.   **15 marks**

Create a maze game in which a character is guided through a simple maze by the player pressing keys for left, right, up and down movements.

- The character should face in the direction of travel and should not be able to move outside the playing area, bouncing back if it touches the edge.

- If the character touches the walls of the maze then it should return to a predetermined start position.

- If the character is guided successfully around the maze to the finishing point then a message or other indication of success should be displayed.

Task 2 System password.   **15 marks**

Create a system to accept and test a password for certain characteristics.

- It should be at least 6, and no more than 12 characters long.

- The system must indicate that the password has failed and why, asking the user to re enter their choice until a successful password is entered.

- A message to indicate that the password is acceptable must be displayed.

- Password strength can be assessed against simple criteria to assess its suitability; for example a password system using only upper and lower case alphabetical characters and numeric characters could assess the password strength as:

  o WEAK if only one type used, eg all lower case or all numeric

  o MEDIUM if two types are used

  o STRONG if all three types are used.

For example

hilltop, 123471324, HAHGFD are all WEAK,

catman3 and 123456t are MEDIUM and

RTH34gd is STRONG

- A message to indicate the password strength should be displayed after an acceptable password is chosen.

Task 3 High scores database.   **15 marks**

Create a system to store and manage user names and their highest score.

The system must be able to

- create a file

- add data to a file

- locate data in the file by name and their highest score

- delete an item and it's associated data from the file

- locate and update a high score for a user

The system need only cater for 10 items