

5 A program is developed to satisfy a specific customer requirement.

The project follows a program development life cycle model. This model divides the development process into several different stages.

(a) The table lists some of the development activities.

Complete the table by writing the name of the life cycle stage for each activity:

| Activity                                                                                            | Name of life cycle stage |
|-----------------------------------------------------------------------------------------------------|--------------------------|
| a structure chart is produced                                                                       |                          |
| a program is modified to allow it to run on new hardware                                            |                          |
| the programmer identifies the customer’s requirements                                               |                          |
| an Integrated Development Environment (IDE) provides context-sensitive help such as ‘auto-complete’ |                          |

[4]

(b) Alpha and beta testing has been completed. The final testing stage is carried out by the customer.

Identify this final testing stage.

..... [1]

5 A software developer follows a program development life cycle. The life cycle divides the development process into various stages.

(a) The following table lists some development activities.

Complete the table by writing the name of the life cycle stage for each activity.

| Activity                                                          | Name of life cycle stage |
|-------------------------------------------------------------------|--------------------------|
| The walkthrough method is used.                                   |                          |
| An algorithm is implemented in a programming language.            |                          |
| The client is interviewed about problems with the current system. |                          |
| The program is modified to run on new hardware.                   |                          |
| Records and file structures are defined.                          |                          |

[5]

(b) The program contains a validation function.

(i) The function will:

- take an integer value as a parameter
- return `TRUE` if the value is within the range 24 to 37, inclusive
- otherwise return `FALSE`.

Complete the table to define a test plan to thoroughly test the operation of the function.

| Type of test data | Test data value | Expected result |
|-------------------|-----------------|-----------------|
| Normal            | 30              | TRUE            |
|                   |                 |                 |
|                   |                 |                 |
|                   |                 |                 |
|                   |                 |                 |

[4]

(ii) The function is to be tested on its own. When it is shown to work correctly the function will be combined with other modules and testing will continue.

Identify the type of testing that this represents.

5 A software developer follows a program development life cycle. The life cycle divides the development process into various stages.

(a) The following table lists some development activities.

Complete the table by writing the name of the life cycle stage for each activity.

| Activity                                                      | Name of life cycle stage |
|---------------------------------------------------------------|--------------------------|
| A compiler is used.                                           |                          |
| A program that has been released for general use is modified. |                          |
| The dry run method is used.                                   |                          |
| The program structure is specified.                           |                          |

[4]

(b) A software developer has written modules `Test_A()` and `Test_B()`. These have been written but contain errors. These modules are called from several places in the main program and testing of the main program (integration testing) has to stop.

Identify a method that can be used to continue testing the main program **before** the errors in these modules have been corrected **and** describe how this would work.

Method .....

Description .....

.....

.....

.....

[3]