Chhetri Academy

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GCSE COMPUTER SCIENCE

2.5

OCR J277 | Specification point 2.5.2

The Integrated Development Environment (IDE)

Untiered

Past paper question booklet

3	2016-2025	Untiered
question groups	available papers	tier

Before you begin

1. Show working and use units where appropriate.
2. Use extra paper if you need more space.
3. Print at actual size (100%) for measurement questions.

Name _____ **Date** _____

Whole questions are retained for context; some parts cover other points. Legacy sources are labelled.

4 Joseph is an author and programmer, and he needs to estimate how many pages his new book will have.

Each page has an average of 300 words. Each chapter starts with a chapter title page.
The number of pages is estimated by;

- dividing the number of words by 300
- ignoring the decimal part of the division
- adding the number of chapters to this total.

Joseph uses the algorithm below to estimate the number of pages, but his algorithm does not give the correct result.

```
01  INPUT numberOfWords
02  INPUT numberOfChapters
03  CONST wordsPerPage = 300
04  numberOfPages = RoundDown(numberOfWords / wordsPerPage)
05  numberOfPages = numberOfWords + numberOfChapters
06  OUTPUT numberOfPages
```

Joseph has used a `RoundDown` function to remove the decimal part of the division, e.g. `RoundDown(6.2)` would return 6, `RoundDown(7.8)` would return 7.

(a) State whether this algorithm uses selection, sequence or iteration.

..... **[1]**

(b) Line 03 defines a constant. Describe what is meant by a constant.

.....

.....

..... **[2]**

(c) There is an error in line `05` of the algorithm.

Write a corrected line of code to replace line `05`.

..... **[1]**

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(d) Identify the most appropriate data type for the following variable `numberOfWords`. Give a reason for your choice.

Data type .....

Reason .....
[2]

(e) Joseph is changing his algorithm and needs to store the name and price of his book in new variables. State the most appropriate data type(s) for these variables.

Name .....

Price .....
[2]

Joseph is using an Integrated Development Environment (IDE) to produce the program.

(f) One tool in an IDE that Joseph uses is a translator.

Describe **two** additional tools in an IDE that Joseph could use to help him produce his program.

Tool 1 name: .....

Tool 1 description: .....

.....

Tool 2 name: .....

Tool 2 description: .....

.....
[4]

(g) Joseph's IDE allows him to use both a compiler and an interpreter.

Describe how Joseph could make use of a compiler and an interpreter when producing his program.

Compiler: .....

.....

.....

.....

Interpreter: .....

.....

.....

.....
[4]

7 Victoria is writing a program using a high level language to display the meaning of computer science acronyms that are entered. The code for her first attempt at this program is shown below.

```
01  a = input("Enter an acronym")
02  if a == "LAN" then
03        print("Local Area Network")
04  elseif a == "WAN" then
05        print("Wide Area Network")
06  .....
07  .....
08  endif
```

(a) **(i)** Complete the code above to print out an "unknown" message if any other acronym is entered by the user. **[2]**

(ii) Describe what is meant by a "high level language".

.....

.....

..... **[2]**

(b) Victoria creates her program using an Integrated Development Environment (IDE).

Describe two tools or facilities that an IDE commonly provides.

.....

.....

.....

.....

.....

..... **[4]**

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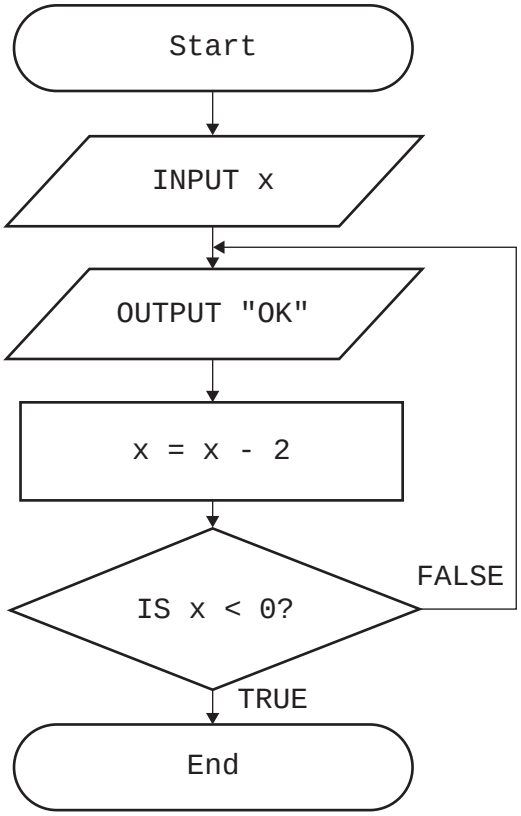
2 This flowchart uses iteration.



(a) Complete the table by identifying how many times "OK" will be output for when each value is input.

Input value	Number of times "OK" is output
3	
10	

[2]

(b) Iteration is a programming construct.

(i) Identify **and** describe **two** different examples of iteration that can be used in a high-level language.

1 .....

.....

.....

2 .....

.....

.....

[4]

(ii) Give the names of **two** other programming constructs that are used in a high-level language.

1 .....

2 .....

[2]

(c) A programmer implements the flowchart as a program in a high-level language using an Integrated Development Environment (IDE).

Identify and describe **two** tools that the programmer could use in the IDE to create a program from the flowchart.

Tool 1 .....

Description .....

.....

Tool 2 .....

Description .....

.....

[4]

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