MODULE P LANGUAGES AND IDES · P1

High-level and low-level languages

Original practice questions · 20 marks · ~25 minutes · Cambridge 0478 syllabus 4.2.1

Name _____ Date _____

Instructions. Answer all questions in the spaces provided. The marks for each part are shown in brackets [ ]. The total for this worksheet is **20 marks**.

1

Total: 4 marks

Computer programs can be written in a high-level language or a low-level language.

(a) Explain what is meant by a **high-level** language. **[2]**

(b) Explain what is meant by a **low-level** language. **[2]**

2 **Total: 3 marks**

Three extracts of program code, **A**, **B** and **C**, are shown.

Extract A	Extract B	Extract C

`Count ← 0`
`WHILE Count < 10 DO`
`  OUTPUT Count`
`  Count ← Count + 1`
`ENDWHILE`
	`LOAD  40`
	`OUT`
	`INC`
	`STORE 40`
	`JUMP  6`
		`11100100`
		`01110001`
		`10100010`
		`00011011`
		`11000110`

(a) Identify the extract that is written in a high-level language. **[1]**

(b) Give **two** reasons why the code in extract A is easier for a programmer to read and write than the code in extract C. **[2]**

1

2

3 **Total: 6 marks**

A factory uses a robotic arm to lift parts onto a conveyor belt. The arm has its own processor. Sensors tell the processor the position of the arm, and the processor sends signals to the motors that move it. The section of the program that reads the sensors and controls the motors is written in a low-level language.

(a) Explain **two** advantages of writing this section of the program in a low-level language. **[4]**

(b) Describe **one** disadvantage to the programmers of writing this section of the program in a low-level language. **[2]**

4 **Total: 5 marks**

A delivery company is writing a route-planning program. The program will be used on the desktop computers in the company's office and on the tablet computers in its vans. The desktop computers and the tablet computers have different types of processor. The program is written in a high-level language.

(a) Explain why **machine independence** is an advantage for this program. **[2]**

(b) Give **one other** advantage of writing this program in a high-level language. **[1]**

(c) Explain **one** disadvantage of writing a program in a high-level language instead of a low-level language. **[2]**

5 **Total: 2 marks**

A programmer is finding and correcting the errors in a long program.

(a) Explain why this is usually easier when the program is written in a high-level language than when it is written in a low-level language. **[2]**

Total for this worksheet: 20 marks