

Revision Sheet

A-Level Computer Science · Unit 16 System Software

12 vocabulary items · 24 marks of exam questions (4 questions)

Part 1 · Vocabulary review (12 items). The terms this unit is examined on most. Mark it yourself from the answer key.

Section A · Chinese to English

Write the English word.

- | | | |
|-----|---|-----|
| 1. | | [1] |
| 2. | | [1] |
| 3. | | [1] |
| 4. | | [1] |
| 5. | | [1] |
| 6. | | [1] |
| 7. | | [1] |
| 8. | | [1] |
| 9. | - | [1] |
| 10. | | [1] |
| 11. | | [1] |
| 12. | | [1] |

Part 2 · Exam questions (24 marks, 4 questions) begins on the next page. They are ordered easy to difficult and none of them has been set before.

13 Draw **one** line to connect each stage of compilation to its **most appropriate** description.

Stage of compilation

Lexical analysis

Syntax analysis

Code generation

Optimisation

Description

minimising a program's execution time and memory requirement

converting an intermediate representation of source code into an executable form

converting a sequence of characters into a sequence of tokens

directly executing instructions written in a scripting language

using parsing algorithms to interpret the meaning of a sequence of tokens

[4]

14 Lexical analysis and syntax analysis are stages in the compilation of a program.

(a) Identify **two other** stages that take place during the compilation of a program.

1

.....

2

.....

[2]

(b) Outline the purpose of syntax analysis.

.....

.....

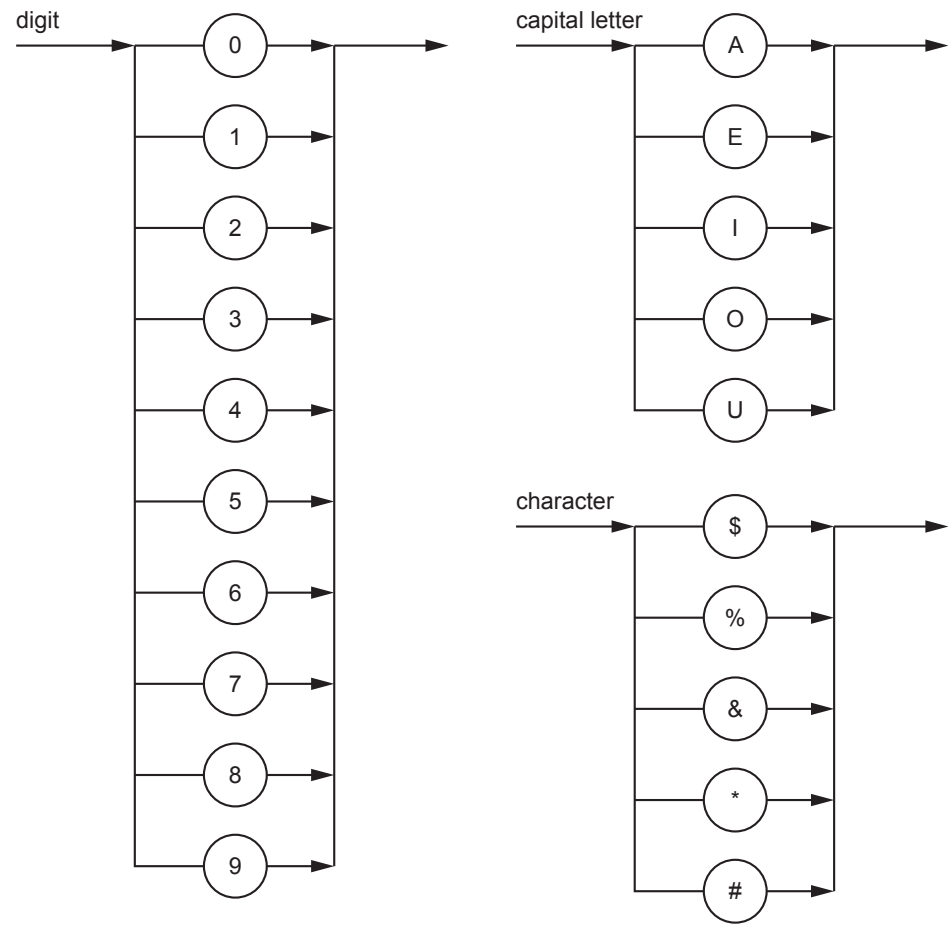
.....

.....

[2]

15 The following syntax diagrams for a particular programming language show the syntax of:

- a digit
- a capital letter
- a character.



(a) Write the Backus-Naur Form (BNF) notation of the syntax diagram for character.

.....

.....

.....

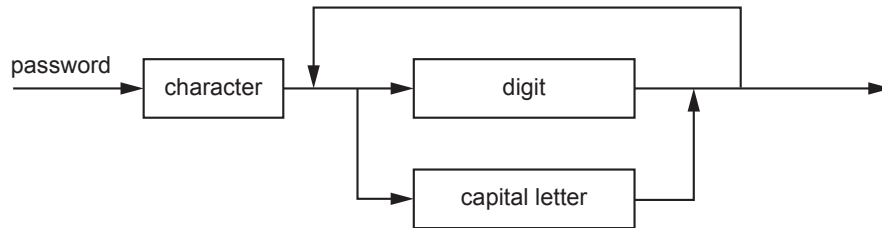
[2]

(b) A password must begin with a character and be followed by one or more digits or capital letters.

(i) State an example of a valid password.

..... [1]

(ii) A valid password is represented by the syntax diagram:



Write the BNF notation of the syntax diagram for password.

.....

 [4]

16 (a) Draw **one** line to connect each **Operating System (OS)** term to the **most appropriate** description about it.

OS term	Description
Multi-tasking	Using secondary storage to simulate additional main memory
Paging	Managing the processes running on the CPU
Interrupt handling	Managing the execution of many programs that appear to run at the same time
Scheduling	Locating non-contiguous blocks of data and relocating them
Virtual memory	Transferring control to another routine when a service is required
	Reading/writing same-size blocks of data from/to secondary storage when required

[5]

(b) Explain how an interpreter executes a program without producing a complete translated version of it.

.....

 [4]