

2.2 PROGRAMMING TECHNIQUES · 2.2.2(A)–(C)

Computational methods

Original practice questions · 30 marks · about 40 minutes · spec 2.2.2(a)–(c)

Instructions. Answer all questions. Marks are shown in brackets []. The extended question assesses quality of written communication.

1 Total: 6 marks

(a) State **three** features that make a problem solvable by computational methods. [3]

(b) Give an example of a problem that is **not** solvable by computational methods, and explain why. [2]

(c) State what is meant by an *algorithm*. [1]

2 Total: 6 marks

A gym wants a program to predict its busy periods so it can schedule staff.

(a) State what is meant by *problem recognition*. [2]

(b) State **four** items of data the gym could collect to help solve this problem. [4]

3 Total: 6 marks

(a) Describe the process of *decomposition*. [2]

(b) Explain **two** reasons why decomposition helps in designing a solution. [4]

(a) Explain the difference between *problem recognition* and *decomposition*. [2]

(b) Name the type of diagram used to show how a problem has been decomposed. [1]

A city council wants a system to predict traffic flow at junctions, using data from road sensors and traffic lights.

[9]

END OF QUESTIONS