AQA Computer Science A-Level
4.11.1 Big Data
Past Paper Questions

Additional Specimen Paper 2

0 7   One characteristic of a data set that might result in it being classified as Big Data is that it contains a very large volume of data.

0 7 . 1   Describe **two** other characteristics that might also result in a data set being classified as Big Data.

[2 marks]

Characteristic 1 _____

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Characteristic 2 _____

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0 7 . 2   Big data is usually processed using parallel or distributed computer architectures.

Explain why functional programming is one appropriate method to use when this is the case.

[2 marks]

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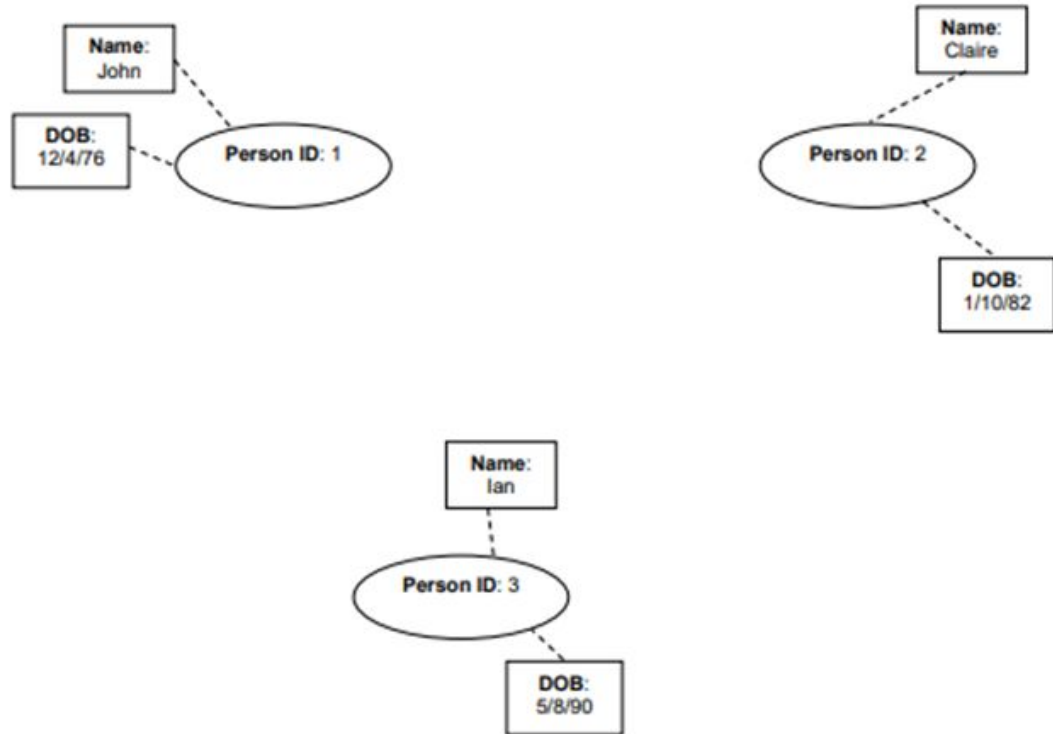**0 7 . 3** Big Data can be represented using graph schema. **Figure 6** shows part of a graph schema for employees of a company.

Figure 6

Complete the graph schema to represent the following facts:

a) John and Ian both work for the Finance department.
b) Claire works for the HR department.
c) Ian is John's manager.
d) John also has the extra role of First Aider.
e) Ian and Claire are married.

[3 marks]

0	4

The phrase "Internet of Things" is used to describe the connection of many everyday devices such as home heating controls, utility meters, cars and environmental sensors to the Internet. It is believed that tens of billions of devices will be connected to the Internet of Things by the end of the decade.

One anticipated use of the Internet of Things is to monitor the food that consumers have inside their fridges. This data could be gathered automatically from consumers' devices by retailers who sell food. Retailers could use the data to analyse consumer consumption habits or automatically prepare deliveries for customers.

In the context of an Internet connected fridge, discuss the technologies that will be required to make the Internet of Things work.

You may wish to consider how the data might be captured, how networking technologies are changing to provide the necessary infrastructure, and how the data gathered by retailers could be stored and processed, from a hardware and software viewpoint.

[12 marks]

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