ANSWER 1 QUESTION FROM PART I, AND 2 QUESTIONS FROM PART II

PART I

1. Soft Systems Method (SSM)

(a) Name the elements of *root definitions* in SSM, and briefly explain what are.

[6 marks]

(b) Explain the function of *root definitions* in SSM. Explain the difference between *primary-task* and *issue-based root definions*, and discuss which elements are most like to vary between *primary-task* and *issue-based root definitions* drawn up for the same subsystem.

[14 marks]

(c) Describe how the *conceptual model* can be used as a framework which integrates different systems analysis and modelling techniques in a software development project.

[10 marks]

(d) The *conceptual model* produced at Stage 4 of a Soft Systems Analysis is rarely implemented in its entirety in a software development project, nor will all parts of the new system be implemented as prescribed in the conceptual model. What is the purpose of developing such a model?

[10 marks]

[Total 40 Marks]

2. Semiotic Analysis

(a) Norms guide general behaviour of individuals and groups in organisations, and the interpretation of information in particular. Name and describe the five types of norms, and explain how relevant norms identified by the analyst can be incorporated in a system specification.

[15 marks]

(b) Explain why groups in the workplace develop jargon. Why does a systems analyst have to recognise this, and which techniques could be used to identify terms used in this way.

[10 marks]

(c) All languages have a vocabulary, syntax and grammar. Compare vocabulary, syntax and grammar of natural and formal languages, and explain why the difference is relevant to the process of writing a system specification.

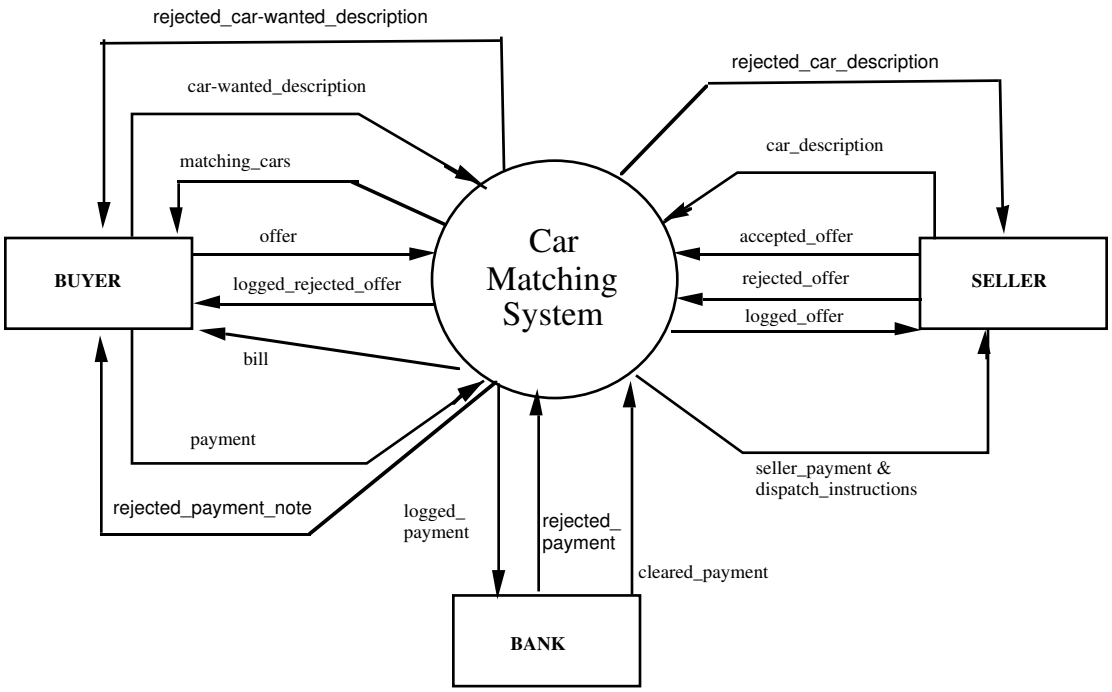
[15 marks]

[Total 40 Marks]

PART II

3. Dataflow diagrams (DFD)

The context diagram below shows a system commissioned by an agency, which matches buyers and sellers of second-hand cars. Owners and potential buyers of cars submit descriptions of cars offered/wanted. The agency sends buyers a list of all cars matching their description. Buyers can submit offers on cars, which are logged by the agency and forwarded to sellers, who inform the agency whether they accept or reject the offer. The agency sends the buyer a bill for accepted offers, processes payments received, and sends dispatch instruction with the car to the seller. All interactions between buyers and sellers, except for the final delivery of the car to the buyer, have to be conducted via the agency, to ensure that it receives commission on sales.



(a) Draw a top-level dataflow diagram for this system.

[22 marks]

(b) Most processes in your top-level DFD could be decomposed further. Explain what *balancing* dataflows means in this context, and when you would stop decomposing.

[8 marks]

[Total 30 Marks]