



OXFORD BROOKES UNIVERSITY
BACHELOR OF SCIENCE (HONOURS)

APRIL 2005 EXAMINATION

22nd APRIL 2005

M8748 Information Systems Analysis and Design

TIME : 2 Hours + 10 Minutes Reading

NUMBER OF PAGES : 1 Cover sheet and 3 Pages of questions

INSTRUCTIONS:

- ☐ All Questions in SECTION A are COMPULSORY and choose any TWO questions in SECTION B.
- ☐ Section A carries 40 marks.
- ☐ All questions in Section B carry 30 marks each.
- ☐ Please start every question on a new page.
- ☐ Answers will not be marked if they are illegible.
- ☐ Enter the question numbers (in the order you have attempted) in the boxes provided in the answer script.
- ☐ Write your **INDEX NUMBER** and **MODULE NUMBER** on the cover page of the answer script.

SECTION A

(Answer ALL questions)

QUESTION 1

Here is a scenario of campaign management system. In this system, campaign manager enter the clients name, select relevant campaign and selects staffs to be allocated. The system lists all campaign for that particular client, displays list of all staffs not yet allocated to any campaign, displays messages indicating their allocation. The actors are staffs, campaign manager. Campaign manager can allocate specific campaign to any staffs (those staffs are free). Those staffs are free or not assigned to any campaign job will be allocated new campaign by the manager. Campaign budget also maintained by campaign manager. Campaign manager also responsible to add new advertising, change a client contract, record completion of the advertising, record client payment etc. The responsibilities of the staffs contact include change a client contract, record completion of an advert etc.

Students may consider applying their own knowledge to the above scenario.

We want to eventually create a system that will let us define, update and report on Campaign management system.

- (a) Use appropriate graphical notations to depict the USE CASE of the campaign management system.

[12 marks]

- (b) Using the noun analysis technique discover a number of suitable classes with relationship from the description of each use case drawn in part (a) for check campaign budget. [This is open ended and you may consider to include as many relevant CLASS as you can]

[12 marks]

- (c) Use appropriate graphical notations to depict the sequence diagram for the check campaign budget system (the campaign manager checks the campaign budget). [required to draw a sequence diagram].

[10 marks]

- (d) Use appropriate graphical notations to depict the Collaboration Diagram of the campaign management system drawn from the Use Case (Q1a). [client and campaign class should be added]

[6 marks]

[TOTAL FOR QUESTION 1: 40 MARKS]

SECTION B(Answer any TWO Questions)**QUESTION 2**

During the initial analysis of an information system for a school, the following classes seemed to be appropriate - *School, Department, Student, Course* and *Instructor*.

- (a) Use CRC cards to establish the responsibilities and collaborators for these classes. [10 marks]
- (b) Draw a UML class diagram showing the relationships between these classes. [10 marks]
- (c) What are the purposes of drawing class diagrams? [4 Marks]
- (d) Use UML notation to show the relationship between:
- i) A Polygon class and a Side class;
 - ii) A Company and an Employee;
 - iii) A Company and its Departments.

[6 marks]

[TOTAL FOR QUESTION 2: 30 MARKS]

QUESTION 3

- (a) Compare between validation and verification in software testing. [13 marks]
- (b) Define the V model and the reason, when to use V model? Describe the disadvantages of Prototyping. [13 Marks]
- (c) What do you understand by "Static" and "Dynamic" testing method? [4 Marks]

[TOTAL FOR QUESTION 3: 30 MARKS]

QUESTION 4

A Publishing and magazine circulation company analyse, publish and circulate the magazine. They have their own library where librarian registers, archive and preserve the magazines copy they published. The company's secretary create circulation note and the analyst, analyse the magazine contents.

- (a) Draw a Use Case diagram for the above Magazine circulation company system. [10 marks]
- (b) Inheritance is a characteristic in Object Oriented programming. What do you understand by inheritance? Define their benefits as well. [10 marks]
- (c) State the purposes of Use Cases. Identify the limitations of Use Cases in Object Oriented methodology? [10 marks]

[TOTAL FOR QUESTION 4: 30 MARKS]

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