

UNIVERSITY OF BOLTON/CITEC MERIDIAN

**SCHOOL OF BUSINESS AND
CREATIVE TECHNOLOGIES**

MSC IT SYSTEMS DEVELOPMENT

SEMESTER 3 EXAMINATIONS 2010/2011

**OBJECT ORIENTED PROGRAMMING
APPROACHES**

MODULE NO: MIT4102

Date: 16 September 2011

Time:

2 hours

INSTRUCTIONS TO CANDIDATES:

There are **7** questions on this paper.

The case study is attached.

Section A.

You must attempt Question 1.
(20 marks)

Section B.

You should attempt 4 questions
(from 6).
(20 marks each)

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Section A. Compulsory Question 1

1. In your analysis of the Construction agency case study there will be information that you need to complete your design, which is not available to you. Make a list of questions that you would like to ask the owner of the agency and speculate on what their answer would be to each of these questions.

(20 marks)

Please turn the page

Section B. Answer 4 questions from this section

2. The design process can be looked on as Analysis (breaking the existing system down into manageable processes) and Synthesis (The creation of a new system). Discuss what steps you would take in the analysis of the Construction Agency and the Synthesis of the system design
(20 Marks)
3. From your interpretation of the Construction Agency Case Study – identify the major objects in the system and explain the processes that go into manipulating those objects.
(20 Marks)
4. Using commonality and variability analysis – identify the major parts of the system and detail the variation within each part.
(20 Marks)
5. a) Create Use Case diagrams for:
Employee Registration.
Assigning an Employee to a contract.
Creating an invoice.
- b) Create sequence diagrams for the situations you detailed in question 5a) above
(20 Marks)
6. Create an analysis matrix that shows the processes and objects (but not the design patterns) needed to process:
Employees (Permanent, Temporary, Self Employed)
Construction Contracts (Fixed Price, Agency Workers)
Invoices (Hourly, Fixed Price)
- Using the analysis matrices you created above create an implementation table including appropriate design patterns for:
Employees
Construction Contracts
Invoices
(20 Marks)

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7. Using appropriate design patterns, create a class diagram for part of the Construction agency system. E.g Creation of invoices or Employee Registration. (20 Marks)

END OF QUESTIONS