# Birkbeck

(University of London)

BSc/FD EXAMINATION

Department of Computer Science and Information Systems

## Information Systems Management (COIY019H5)

CREDIT VALUE: 15 credits

Date of examination: 31st May, 2013
Duration of paper: 2 hours (10:00am to 12:00pm)

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

Answer only **three** of the four questions.

Each question carries **33** marks in total. Questions indicate marks for sub-questions.

If more than three questions are attempted, only marks from three questions will be reported as your examination mark.

1 extra mark is available for a well-presented paper.

No extra materials are required or allowed.

 

1. Software development process

(a) Describe the *Timeboxing* and the *MoSCoW prioritisation* approaches in DSDM Atern. (**10** marks)

(b) Explain what a *facilitated workshop* is in DSDM Atern. (**5** marks)

(c) Describe the *Extreme Programming* approach, explaining its underlying principles and its activities. (**18** marks)

2. Project Management

Consider the PERT diagram regarding the development of a project, depicted in Figure 1; tasks/activities are indicated as arc labels, and the duration is indicated in weeks.

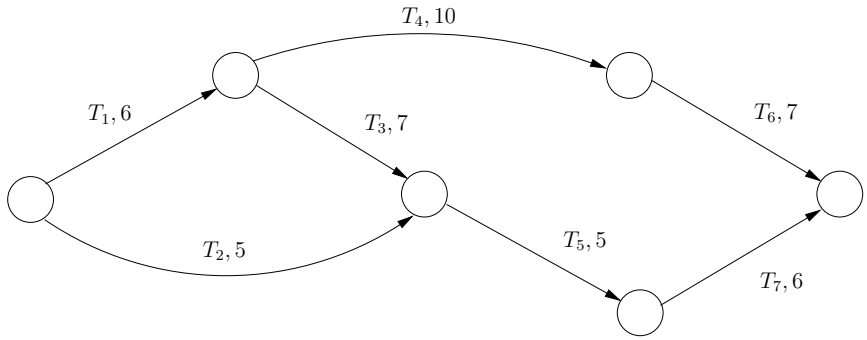


Figure 1: PERT diagram for Question 2.

(a) Identify the critical path(s) and give its (their) duration. (**3** marks)

(b) Give the earliest start time and the latest start time for $T_2$, $T_3$ and $T_4$. (**9** marks)

(c) Suppose that, due to unexpected circumstances, the execution of $T_2$ takes 7 weeks instead of 5. Is the total duration of the project affected? If it is, how? (**10** marks)

(d) Suppose you have a budget of £ 30,000 to reduce the total duration of the project, and that you can shorten the completion of any activity (possibly more than one) at a cost of £ 10,000 per each 1-week reduction. Determine how to spend the budget in the most efficient way. (**11** marks)

 

3. Data management

(a) Discuss the issues surrounding the design of a data storage layer. In particular, discuss possible solutions to locating the operations related to handling persistent data, explaining why a database broker framework is the most widely adopted solution. (**18** marks)

System design and architecture

(b) Describe the principles behind a layered architecture. Explain the difference between open and closed architecture in this context, discussing advantages and disadvantages of both. (**15** marks)

4. Detailed design

(a) Discuss the issues surrounding the design of associations (one-to-one, one-to-many, many-to-many) between classes. (**15** marks)

Design patterns

(b) Describe the *State* pattern and give an example of its application. (**18** marks)

 