

Semester Two of Academic Year (2015---2016) of BDIC

《 Software Project Management》

Module Code: COMP3028J

Exam Paper A

Exam Instructions: Answer ALL Questions

Honesty Pledge:

I have read and clearly understand the Examination Rules of Beijing University of Technology and University College Dublin and am aware of the Punishment for Violating the Rules of Beijing University of Technology and University College Dublin. I hereby promise to abide by the relevant rules and regulations by not giving or receiving any help during the exam. If caught violating the rules, I would accept the punishment thereof.

Pledger: _____

Class No: _____

BJUT Student ID: _____

UCD Student ID _____

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Notes:

The exam paper has 3 parts on 3 pages, with a full score of 100 points. You are required to use the given Examination Book only.

Instructions for Candidates

Full marks will be awarded for complete answer to **All** questions.

Instructions for Invigilators

It is the closed book exam. Candidates are allowed to use dictionary and non-programmable calculators during this examination.

Obtained score

Part 1: Answer the following questions (10 points each question, total 50 points)

1. Why is software project management important? What activities should be covered by software project management?
2. Please describe all the cost estimation methods and the characteristics of each method.
3. How do the schedule and cost affect software quality? What are common metrics to evaluate software quality?
4. What is software configuration management? What are main functions of software configuration management?
5. Please describe the characteristics of each maturity level in CMMI.

Obtained score

Part 2: (total 30 points)

1. Figure 1 is the activity network for a project using activity-on-arrow network convention. The project starts at node 1 and ends at node 6. Table 1 provides additional activity duration estimates for the network shown in Figure 1.
 - (1) Please calculate the expected duration for each activity with PERT method. (6 points)
 - (2) Please use your calculated expected activity durations to carry out a forward path, and then identify the critical path and calculate expected completion date of the project. (9 points)

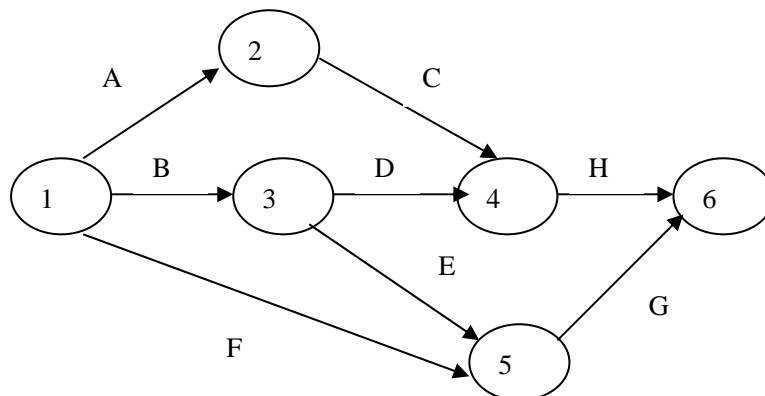


Figure 1

Table 1:

Activity	Activity durations (weeks)		
	Optimistic (O)	Most likely (M)	Pessimistic (P)
A	5	6	8
B	3	4	5
C	2	3	3
D	3.5	4	5
E	1	3	4
F	8	10	15
G	2	3	4
H	2	2	2.5

2. Please use decision tree risk analysis technique to analyze the following two schemes to decide which scheme you will choose. You are required to draw a decision tree. (15 points)
- Scheme A: randomly throw coins two times, and if the head shows up two times, you will get 10 Yuan; you need to pay 1.5 Yuan each time the tail shows up, for example, if the tail shows up two times, you should pay 3.0 Yuan.
- Scheme B: randomly throw coins two times, you need to pay 2 Yuan; if the head shows up two times, you will get 10 Yuan.

Obtained score

Part 3: Case study (total 20 points)

Zhang is the CTO of a company. The company's CEO recently asked him to be responsible for the development of an e-commerce platform. Due to the company's business development needs, CEO was eager to establish e-commerce platform, therefore asked Zhang to start the project as soon as possible. Zhang need organize staff to work on the project at the fastest speed. At the first project team meeting, the project team identified the main tasks of the project. The first task is to study the existing e-commerce platform. Once the research task is completed, it is required to submit the project plan and project definition document to the top management for approval. When the project team is approved by the management, the work can be started. Project team need finish requirements analysis and design. After the design is completed, there are three tasks that must be carried out at the same time: 1. the development of electronic commerce platform database; 2. development and preparation of web page code; 3. development and preparation of electronic commerce platform form code. Finally, the entire e-commerce platform should be tested.

- (1) Please identify all the activities. (5 points)
- (2) Identify all the possible risks. (5 points)
- (3) If you are the project manager, how do you manage this project? (10 points)