



Beijing-Dublin International College



SEMESTER 2 FINAL EXAMINATION - 2020/2021

(COMP3028J) Software Project Management

MODULE COORDINATOR: ZHANG XIAODAN

Time Allowed: 95 minutes

Instructions for Candidates

BJUT Student ID: _____ **UCD Student ID:** _____

I have read and clearly understand the Examination Rules of both Beijing University of Technology and University College Dublin. I am aware of the Punishment for Violating the Rules of Beijing University of Technology and/or 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 accept the punishment thereof.

Honesty Pledge: _____ **(Signature)**

Instructions for Invigilators

Candidates are allowed to use non-programmable calculators during this examination.

Obtained Score

**Part 1: Multiple Choice. Choose the best answer to each of the following questions.
(2 points each question, total 40 points)**

- Which of the following activities is NOT a project?
 - Building an extension on a house
 - Organizing a large conference
 - Developing an operating system
 - Reporting to department manager for weekly work
- You're a project manager working on a software engineering project. The programmers have started building the software, and the testers have started to create the test environment. Which process group includes these activities?
 - Initiating
 - Planning
 - Executing
 - Closing
- You're managing a project with one client sponsor, and you have a five-person team reporting to you. You've been given a budget increase, which allowed you to increase your team size by 40%. How many lines of communication were added?

A. 6	1	1
B. 15	1	1
C. 9	5	5+2=7
D. 7	7	9
	$7*6/2=21$	$9*8/2=36$
- Which of the following is TRUE about a work breakdown structure?
 - It contains work packages that are described in a linear, unstructured list
 - Each item in the WBS represents a feature in the product scope
 - The WBS represents all of the work that must be done on the project
 - The WBS is created by the product sponsor and stakeholders
- _____ refers to non-random data points that are grouped together on one side of the mean of a control chart.
 - Flowcharts
 - Fishbone diagrams
 - Rule of seven
 - 6 sigma

6. “I don’t really have time for this--let’s just do it your way and forget I ever brought up the problem.” Which kind of conflict management style is used?

- A. Withdraw
- B. Compromise
- C. Force
- D. Collaborate

7. Using the WBS shown below, which one is a typical work package?

- 1. **Software development**
 - 1.1 Systems design
 - 1.1.1 Requirement Analysis
 - 1.1.2 Flowcharting
 - 1.2 Coding
 - 1.2.1 Language selection

- A. Software development
- B. Coding
- C. Flowcharting
- D. Systems design

8. A cause and effect diagram is also a:

- A. Flowchart
- B. Fishbone diagram
- C. Control chart
- D. Pareto chart

9. A list of risks for additional items (such as category and priority) is an output of:

- A. Identify Risks.
- B. Plan Risk Management.
- C. Perform Qualitative Risk Analysis.
- D. Perform Quantitative Risk Analysis.

10. Joe is the project manager of a large software project. When it’s time to identify risks on his project, he contracts a team of experts and has them all come up with a list and send it in anonymously. What technique is Joe using?

- A. SWOT
- B. Ishikawa diagramming
- C. Brainstorming
- D. Delphi

11. Which of the following is NOT an example of Cost of Quality?

- A. Having team members spend extra time reviewing requirements with the stakeholders
 - B.** Paying extra programmers to help meet a deadline
 - C. Hiring extra inspectors to look for defects
 - D. Sending a crew to repair a defective product that was delivered to the client
12. Which of the following tools and techniques is used to show which categories of defects are most common?
- A. Control charts
 - B. Scatter charts
 - C. Flow charts
 - D.** Pareto charts
13. You're the project manager for an industrial design project. Your team members report to you, and you're responsible for creating the budget, building the schedule, and assigning the tasks. When the project is complete, you release the team so they can work on other projects for the company. What kind of organization do you work in?
- A. Functional
 - B. Weak Matrix
 - C. Strong Matrix
 - D.** Projectized
14. A project manager has discovered that a team member has gold plated the work done in an activity. In order to discover this, the project manager must have been performing:
- A. Time management
 - B.** Scope management
 - C. Cost management
 - D. Staffing management
15. You've just received a change request. This means:
- A. The project charter is complete, but the work cannot begin yet because you need to make a change to the preliminary scope statement.
 - B. You are in the Direct and Manage Execution process, and you can implement the change now.
 - C.** The change needs to be approved before it can be implemented.
 - D. There is a defect in a deliverable that must to be repaired.
16. You are holding a formal, approved document that defines how the project is executed, monitored and controlled. You are holding:
- A.** The project management plan
 - B. The preliminary scope statement
 - C. The project charter
 - D. The work breakdown structure

17. Alice is estimating cost for a software project using **Delphi** technique, with two experts filling out the estimation form. The first expert provides a three point estimating: the optimistic estimate is 1,000 dollars, the pessimistic estimate is 9,000 dollars, and the most likely estimate is 8,000 dollars. The second expert provides an estimating with the same optimistic estimate and pessimistic estimate, but the most likely estimate is 2,000 dollars. What is the expected cost of this estimating?
- A. 2,000 dollars
 B. 3,000 dollars
C. 5,000 dollars
 D. 7,000 dollars
18. You're managing a construction project. There's a 50% chance that weather will cause a three-day delay, costing \$12,000. There's also a 20% chance that the price of your building materials will drop, which will save \$5,000. What's the EMV for both of these?
- A. -\$7,000
 B. \$7,000
C. -\$5,000
 D. \$5,000
19. A project manager has increased project costs by US \$100,000, but completed the project three weeks earlier than planned. What activity is BEST described here?
- A. Resource levelling
B. Schedule compression *Crash*
 C. Critical chain
 D. Adjusting leads and lags
20. Susan is project manager on a construction project. When she hears that her project has run into a snag due to weeks of bad weather on the job site, she says "No problem, we have insurance that covers cost overruns due to weather." What risk response strategy did she use?
- A. Exploit
B. Transfer
 C. Mitigate
 D. Avoid

Obtained Score

Part 2: True or False (2 points each question, total 10 points)

- Milestones are similar to activities, but they have zero duration. ✓
- Function Point is a measurement of source code program length. ✗
- Enterprise Environmental Factors are under the control of project. ✗
- Control Quality is generally performed before Validate Scope, although the two processes may be performed in parallel. ✗ ✓
- A waterfall model is best suited for projects that have high levels of uncertainty. ✗

Obtained Score

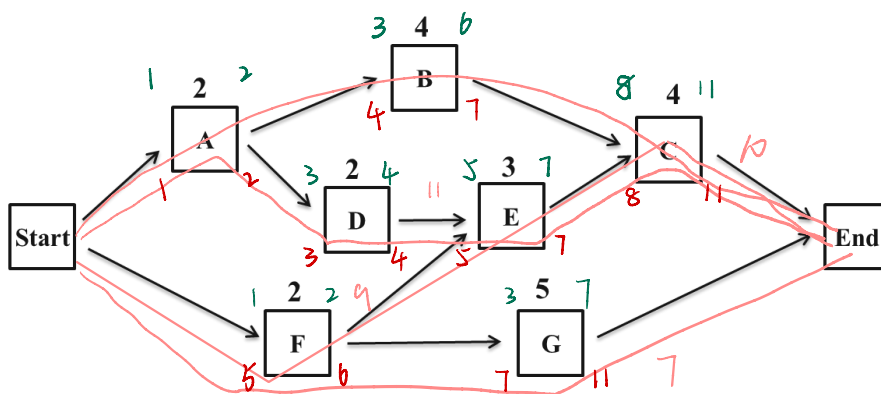
Part 3: Answer the following questions (10 points each question, total 20 points)

1. What is project? What is Project management? What is Software Project Management?
2. Please list the five process groups and ten knowledge areas of project management.

Obtained Score

Part 4: Calculation questions (15 points each question, total 30 points)

1. Here's a PDM network diagram: (the number means the duration of each activity in terms of days)



	ES	EF	LS	LF	Float
A	1	2	1	2	0
B	3	6	4	7	1
C	8	11	8	11	0
D	3	4	3	4	0
E	5	7	5	7	0
F	1	2	5	6	2
G	3	7	7	11	4

Please answer the following questions:

Start → A → D → E → C → End

- 1) How many paths are there? Please write down the critical path.
- 2) Calculate the ES, EF, LS, LF, and Float of each activity.

$$\begin{aligned}
 BAC &= \$5000 & CV &= EV - AC = \$1400 & ETC &= EAC - AC = \$4250 \\
 AC &= \$2000 & EAC &= \frac{BAC}{CPI} = \$6250 & VAC &= BAC - EAC = \$1250 > 0 \\
 CPI &= 0.8 = \frac{EV}{AC} \Rightarrow EV &= AC \cdot CPI = \$1600 & & \text{over budget } \$1250
 \end{aligned}$$

2. You're a project manager working on a large project schedule to last for two years.

- 1) It's six months into your project. The total budget for your project is \$5,000. You've spent \$2,000 so far, and you've got a CPI of 0.8. Please figure out the BAC, AC. And please use the EVM formulas from forecasting to calculate the EV, CV, EAC, ETC, VAC, and figure out will the project over budget or under budget when it's completed? How much will the project be over or under budget?
- 2) Now it's six months later, and your project looks very difficult. You need to work out a new forecast for what your budget situation will be like at project completion. You've now spent \$2,500. You look at all of the activities done by the team, and you find the project is 60% complete. Please figure out the BAC, AC, EV, CPI, EAC, ETC, VAC, will this project over or under budget at completion? How much will the project be over or under budget?

$$\begin{aligned}
 BAC &= \$5000 & ETC &= EAC - AC = \$1666.667 \\
 AC &= \$2500 & VAC &= BAC - EAC = \$833.333 > 0 \\
 EV &= 60\% \times BAC = \$3000 & & \text{under budget } \$833.333 \\
 CPI &= \frac{EV}{AC} = 1.2 & & \\
 EAC &= \frac{BAC}{CPI} = \$4166.667
 \end{aligned}$$