Beijing-Dublin International College

SEMESTER 2 FINAL EXAMINATION - 2017/2018

COMP3028J Software Project Management

MODULE COORDINATOR: LIU ZHAOYING

Time Allowed: 120 minutes

Instructions for Candidates

The exam paper has 3 parts on 10 pages, with a full score of 100 points.

All of the multiple choice questions carry equal marks. Full marks will be awarded for complete answer to **All** questions.

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

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

Obtained Score

Part 1: Multiple Choice. Choose the best answer to each of the following questions. (1 points each question，total 20 points）

1. Which of the following activities is Not a project?
   A. Building an extension on a house
   B. Organizing a large conference
   C. Developing an operating system
   D. Reporting to department manager for weekly work

2. 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?
   A. Initiating
   B. Planning
   C. Executing
   D. Closing

3. 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

4. Which of the following is TRUE about a work breakdown structure?
   A. It contains work packages that are described in a linear, unstructured list
   B. Each item in the WBS represents a feature in the product scope
   C. The WBS represents all of the work that must be done on the project
   D. The WBS is created by the product sponsor and stakeholders

5. You're managing a project, when your client tells you that an external problem happened, and now you have to meet an earlier deadline. Your supervisor heard that in a situation like this, you can use schedule compression by either crashing or fast-tracking the schedule, but he's not sure which is which. What do you tell him?
   A. Crashing the project adds risk, while fast-tracking adds cost.
   B. When you crash a project, it always shortens the total duration of the project.
   C. Crashing the project adds cost, while fast-tracking adds risk.
   D. When you fast-track a project, it always shortens the total duration of the project.

6. Tom is a project manager for a software company. He is contracting a long-term software project with an external company. The company charges him $20/hour per employee and $300 overhead per month. What kind of contract is he using?
   A. Fixed Price
   B. Cost Plus Incentive Fee
   C. Fixed Price Incentive Fee
   D. Time and Materials

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. If the optimistic estimate is 20 days, the pessimistic estimate is 80 days, and the most likely estimate is 35 days, which of the following is true?
   A. The expected value is 45, the standard deviation is 10, there is approximately a 68% chance of completing this activity between 35 and 55 days.
   B. The expected value is 40, the standard deviation is 10, there is approximately a 68% chance of completing this activity between 30 and 50 days.
   C. The expected value is 45, the standard deviation is 10, there is approximately a 95% chance of completing this activity between 25 and 65 days.
   D. The expected value is 40, the standard deviation is 20, there is approximately a 68% chance of completing this activity between 20 and 60 days.

9. You are working on a project with an SPI of 0.72, and a CPI of 1.1, which of the following BEST describes your project?
   A. Your project is ahead of schedule and under budget
   B. Your project is behind schedule and over budget
   C. Your project is behind schedule and under budget
   D. Your project is ahead of schedule and over budget

10. Which of the following is NOT a part of quality?
   A. Fitness to use
   B. Conformance to requirements
   C. Value to the sponsor
   D. Customer satisfaction

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. Which of the following describes Maslow's Hierarchy of Needs?
    A. You can't be good at your job if you don't have a nice office
    B. You need to feel safe and accepted to want to be good at your job
    C. Your boss's needs are more important than yours
    D. The company's needs are most important, then the boss's, then the employee's

14. Two team members are having an argument over priorities in your project. One thinks that you should write everything down before you start doing any work, the other thinks you can do the work while you finish the documentation. You sit both of them down and listen to their argument. Then you decide that you will write most of it down first but will start doing the work when you are 80% done with the documentation. What conflict resolution technique are you using?
    A. Forcing
    B. Confronting
    C. Smoothing
    D. Compromise

15. You are writing a Performance Assessment for your team, which process are you in?
    A. Develop Project Team
    B. Acquire Project Team
    C. Manage Project Team
    D. Human Resource Planning

16. You're a project manager on an industrial design project. You've set up a reward system, but you're surprised to find out that the team is actually less motivated than before. You realize that it's because your rewards are impossible to achieve, so the team doesn't expect to ever get them. What motivational theory does this demonstrate?
    A. Herzberg's Hygiene Theory
    B. Maslow's Hierarchy of Needs
    C. MacGregor's Theory of X and Y
    D. Expectancy Theory

17. You have five people working on your team, a sponsor within your company, and a client, all of whom need to be kept informed of your project's progress. How many lines of communication are there?
    A. 21
    B. 19
    C. 28
    D. 31

18. You're managing a construction project. There's a 30% 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. -$3,600
    B. $1,000
    C. -$2,600
    D. $4,600

19. 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

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

1. What is a project? What are operations? Please describe the differences between the project and the operation.

2. What is project management? Why is software project management important? Please describe the five project management process groups, and activities typically covered by software project management.

3. What is software configuration management? What are the main functions of software configuration management?

4. What’re the six major external software quality characteristics? Why software quality management is important?

5. Please list the three types of Software process model and five software process maturity levels. Pick one of the software process model and describe its advantages and disadvantages.

Obtained Score

Part 3: Calculation questions（15 points each question，total 30 points）

1. Here's a list of nodes for a PDM network diagram:

Name	Predecessor	Duration
Start	-	-
A	start	6
B	A	5
C	B	1
D	A	2
E	D	4
F	E	8
G	start	3
H	G	3
I	H	2
J	E,I	3
Finish	F,J,C	-

Please answer the following questions:

1) Draw the diagram based on it;
2) How many paths are there? Please write down the critical path;
3) Calculate the ES, EF, LS, LF, and Float of each activity.

2. You're a project manager at an industrial design company. You expect to spend a total of $54,000 on your current project. You plan calls for six people working on the project eight hours a day, five days a week for four weeks. According to the schedule, your team should have just finished the third week of the project. When you review what the team has done so far, you find that they have completed 50% of the work, at a cost of $24,000.

   1) Based on this information, please calculate the following Earned Value numbers, and figure out if the project is behind schedule or ahead of schedule?

BAC = _____; PV =_____

AC = _____; EV = _____

SV = _____—_____= _____

CV = _____—_____= _____

SPI = _____/_____= _____

CPI = _____/_____= _____

2) Please use the EVM formulas from forecasting to calculate the EAC, ETC, VAC, and figure out will the project over budget or under budget when it's completed? How much will it be over budget or under budget?

EAC = _____/_____= _____

ETC = _____—_____= _____

VAC = _____—_____= _____