



## THE UNIVERSITY OF THE WEST INDIES

Semester I ☒ Semester II ☐ Supplemental/Summer School ☐

**Examinations of December** ☒ /April/May ☐ /July ☐ 2017

Originating Campus: Cave Hill ☐ Mona ☒ St. Augustine ☐

Mode: On Campus ☒ By Distance ☐

Course Code and Title: SWEN3130-Software Project Management

Date: Thursday, December 14, 2017

Time: 9:00 a.m.

Duration: 2 Hours.

Paper No:

**Materials required:**

Answer booklet: Normal ☒ Special ☐ Not required ☐

Calculator: Programmable ☐ Non Programmable ☒  
(where applicable)

Multiple Choice answer sheets: numerical ☐ alphabetical ☐ 1-20 ☐ 1-100 ☐

Auxiliary/Other material(s) – Please specify:

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Candidates are permitted to bring the following items to their desks:

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**Instructions to Candidates: This paper has 4 pages & 4 questions.**

**Complete question ONE (1) and ANY OTHER TWO (2) questions.**

**Candidates are reminded that the examiners shall take into account the proper use of the English Language in determining the mark for each response.**

**QUESTION 1(20 marks)**

- a. Explain the importance of a good project charter. [1 mark]
- b. In creating the WBS while decomposing scope, state two tests that need to be carried out while decomposing scope to another level. [1 mark]

In a software development project, it was determined that the following activities were to be carried out. The sequencing is shown in table 1.

Task ID	Description	Duration(Days)	Successors
A	Design	3	C
B	Resolve Legal Issues	4	C,D
C	Code and Test	3	E
D	Marketing	4	F
E	Installation	3	-
F	Distribution	2	-

- c. Draw a network diagram representing the project plan. [4 marks]
- d. On your graph, determine and represent appropriately the forward pass, backward pass and float. [8marks]
- e. Write down the nodes on the critical path. [2 marks]
- f. The university decides to apply its technical prowess and develop a piece of software in-house to manage its consultancy services. The estimated budget for the project is \$10,000,000, and the estimated duration is two years. The lion's share of the budget has been allocated toward the development of a mind-mapping tool that will allow individuals to share ideas. That item is projected to cost 7 million dollars and is to be completed by the end of the first year, as the first deliverable of the project. An audit is to be performed at a milestone 18 months into the project. The planned expenditure at the 18 month checkpoint is 9 million dollars.
- i. Eighteen months into the project, the audit reveals that the mind-mapping tool has just been completed, at a cost of 8 million dollars. Determine the CPI and the SPI for the project. [2 marks]
  - ii. If the variance was due to a reason that is not expected to continue such as a critical resource needing emergency leave, state the new required estimate AT completion. [1 mark]
  - iii. If the variance is due to a reason that is expected to continue, determine the new estimate at completion. [1 mark]

**QUESTION 2(10 MARKS).**

- a. Briefly explain the difference between products of high grade and products of high quality. *[1 mark]*
  
- b. You have designed an interactive role playing game. Market research tells you that there is a 40% chance of market success. If the game is successful, you will net \$12 million dollars. If you are to pursue the development, you will incur costs of \$4 million dollars due to equipment costs and license fees. In order to benefit from your design, you have two options. The first option is to stand the costs and develop the game. The second option is to sell the rights to a company that is willing to purchase for \$3 million. Show the working required to determine what option is better. *[4 marks]*
  
- c. What is the difference between Management reserves and contingency funds? *[1 mark]*
  
- d. Briefly describe the type of contract that offers
  - a. the least risk to the buyer, *[1 mark]*
  - b. the least risk to the seller. *[1 mark]*
  
- e. State two properties of a project sub-deliverable that render it suitable for outsourcing. *[1 marks]*
- f. State two properties of a project sub-deliverable that render it **unsuitable** for outsourcing. *[1 marks]*

**QUESTION 3(10 MARKS).**

- a. Draw a diagram showing the major components of the communications cycle. *[4 marks]*
- b. State two examples of barriers to communication. *[2 marks]*
- c. Evaluate the number of direct communication channels in a project of team size 10. *[2 marks]*
- d. State why it is important to consider stakeholders who are highly interested in your project even if they have few resources to impact the project. *[1 mark]*
- e. State the difference between the terms **quality** and **grade** in Project Quality Management. *[1 marks]*

**QUESTION 4(10 MARKS).**

- a. Give a brief example of dynamic scope creep. *[1 mark]*
- b. Describe one strategy to implement a strong change control process. *[2 marks]*
- c. The possibility of a new competitor emerging in the market place has resulted in a schedule change for a project that you are managing. As a result, it has become important to reduce the schedule. Crashing and fast tracking are two possible techniques that can be used. Describe each technique. *[2 marks]*
- d. Describe a useful strategy for selecting candidate tasks to be adjusted for schedule compression. *[1 mark]*
- e. Describe a risk that arises as a result of using fast tracking. *[1 mark]*
- f. The duration of one task from the list below is to be reduced (One task is to be crashed). Explain which task is the best one to crash. *[3 marks]*

Task ID	Normal Cost	Normal Duration	Crash Cost	Crash Duration
A	\$1000	4D	\$2000	3D
B	\$2000	4D	\$4000	2D
C	\$1000	9D	\$3000	4D
D	\$5000	8D	\$6000	4D