**Instructions:**

1. This work should be done individually. But you are allowed to discuss with your colleague.
2. Mark will be given to the exercises that submit at the end of the lab session.
3. All your assumption and work (including your calculation) must be clearly stated in this lab sheet.
4. You are required to develop your report using Microsoft Words.
5. Submit hardcopy at the end of lab session.

**Questions:**

1. From the list of methodology, choose two and make a comparison between those two methods.
2. Student may include information such as:
   1. Introduction on methodology
   2. Advantage and disadvantages
   3. Situation to use methodology
   4. Sample of methodology gantt chart
   5. Source of information (reference)
3. List of methodology to choose
   1. Waterfall
   2. Spiral
   3. Rapid Application Development
   4. Extreme Programming
   5. Rational Unified Process
4. Prepare in the range of 3 to 5 pages for this lab sheet, and student are not advice to use materials from wikipedia

Question 1

Answer:

|  |  |  |
| --- | --- | --- |
|  | Process | Weakness |
| Waterfall | Each phase usually requires its own set of subject matter experts (SME) responsible for creating the deliverables to meet carefully scripted milestones. | The next phase typically cannot be started until the previous one has been completed. |
| Rational Unified Process | Establishes four phase of development : inception, elaboration, construction & transition | Each phase is organized into a number of separate iterations |

Question 2

Answer:

1. Introduction of Waterfall

The traditional software development process, is often referred to as “waterfall”, is a highly structured and sequential process that relies heavily on up-front planning and prescribed tasks that flow from one to another like a waterfall.

Introduction of Rational unified process

The Rational Unified Process is a Software Engineering Process. It provides a disciplined approach to assigning tasks and responsibilities within a development organization.

1. Advantages and disadvantages

Waterfall

|  |  |
| --- | --- |
| Advantages | Disadvantages |
| * It is linear and therefore very easy to be implemented * Required amount of resources are minimal. | * Tester role only happen in the test phase. * Waterfall model is not simultaneous. |

Rational unified process

|  |  |
| --- | --- |
| Advantages | Disadvantages |
| * This is a complete methodology in itself with an emphasis on accurate documentation * The development time required is less due to reuse of components. | * The development process is too complex and disorganized * Integration throughout the process of software development, in theory sounds a good thing. But on particularly big projects with multiple development streams it will only add to the confusion and cause more issues during the stages of testing |

1. Situation to use methodology

|  |  |
| --- | --- |
| Waterfall | Rational unified process |
| Waterfall development can work well for complex or mission-critical systems or for and for organizations that require the highest levels of fault tolerance (such as the military or aerospace) | * Manage requirements * Develop software iteratively |

1. Sample of methodology gantt chart

|  |  |
| --- | --- |
| Waterfall | Rational unified process |
|  |  |

Reference:

<http://www.ibm.com/developerworks/rational/library/5317.html>

<http://smoovejazz.wordpress.com/2011/03/02/comparing-waterfall-and-rational-unified-process/>