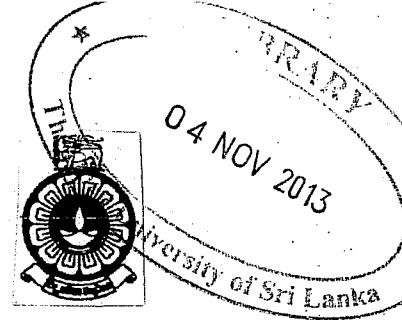THE OPEN UNIVERSITY OF SRI LANKA
DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE
B.Sc. DEGREE PROGRAMME 2012/2013
CPU2140: SYSTEM ANALYSIS AND SOFTWARE ENGINEERING
NO BOOK TEST: 01

DURATION: ONE AND HALF HOURS ONLY (1.5 HOURS)

Date: 29ᵗʰ July 2013 — Time: 4.00 p.m. to 5.30 p.m.

Answer **ALL** Questions in **Part I** and **Part II**.
Write the answers on the question paper itself.

Part I

Q1.

I. Identify the most suitable description for the following characteristics of quality software. Write them in the given space.
Dependability, Maintainability, Efficiency, Usability
   a. Software should be written in such a way that it may evolve to meet the dynamic needs of customer ....
   b. Software should not make wasteful use of system resources ....
   c. Software must be usable, without undue effort, by the type of user for whom it is designed ....

II. Which of the following is/are *correct* with respect to the *incremental development*?
   a. User requirements are prioritized and higher priority requirements are included in early increments.
   b. User can use the early increments as prototypes and gain experience that informs their requirements for later system increments.
   c. There is a higher risk of overall project failure.
   d. Risk is considered explicitly.

III. Which of the following is/are involved in *component based software engineering*?
   a. Feasibility study.
   b. Requirement specification.
   c. Development and integration.
   d. System validation.

IV. Identify the most suitable descriptions for the following explanations of the software models. Write them in the given space.
Exploratory development, Incremental development, Throw-away prototyping
   a. The development starts with the part of the system that is understood well ....
   b. The development starts with the poorly understood requirements ....

V. Write the most suitable terms for the following explanations that are related to RUP.
a. Analyze the problem domain, establish a sound architectural foundation, develop the project plan and eliminate the highest risk elements of the project................
b. All remaining components and application features are develop and integrated into the product and all features are thoroughly tested....................................
c. Establish the business case for the system and delimit the project scope.............................
d. Transition the software product to the user community................................

VI. Which of the following is/are non-functional requirements?
a. Protect privacy of student information.
b. List students under various conditions.
c. Maintain the history of each student.
d. Maximum credit limit that a student can register for an academic year.

VII. Which of the following is/are activities carried out during requirement engineering phase?
a. Prepare SRS.
b. Prepare the feasibility report.
c. Prepare the project agreement.
d. Develop system models.

VIII. Software feasibility is based on which of the following;
a. Business and marketing concerns
b. Scope, constrains, market
c. Technology, finance, time, resources
d. Technical ability of the developers

IX. Write the most suitable risk type for the following risks.
a. Experienced staff will leave the project before it is finished ....
b. The size of the system has been underestimated ....
c. A competitive product is marketed before the system is completed ....

X. Which of the following(s) is/are true?
a. System requirements are the expanded version of the user requirements.
b. Functional requirements for a system describe what the system should do.
c. Rup is normally described form three perspective, such as dynamic perspective, static perspective and practice perspective
d. The stages in the software processes are Component testing and System Testing.

Part II

Q1.

I.

a. What is *Software Engineering*?

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b. What are the two (02) types of software products and state a main difference between them?

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c. *"The most important emergent property of a critical system is dependability"* Comment on this statement.

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II.

    a.   Identify the advantages of evolutionary development compared to the waterfall model.

    b.   Assume you want to develop software by considering the risk factor. What is the model you are going to use? Describe it briefly.

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Q2).

I.

a. Why project management is needed?

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b. Why software engineering project managers are different on from other type of engineering managers?

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II.

a. What is the difference between *user requirements* and *system requirements*?

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a. What is the difference between *functional* and *non functional* requirement? Give an example for each.

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b. *"Non functional requirements are more critical than the functional requirements."* Comment on this.

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