University of Colombo, Sri Lanka

UCSC *University of Colombo School of Computing*

BACHELOR OF SCIENCE IN INFORMATION SYSTEMS

Academic Year 2014/2015 — Second Year Examination — Semester 1— 2016

IS2001 — Software Engineering

(Two (2) Hours)

Answer 3 Questions including Question 1

Number of Pages = 15 Number of Questions = 4

To be completed by the candidate

Index Number | | | | | | | | |

Important Instructions to candidates:

- The medium of instruction and questions is **English**.
- Note that questions appear on both sides of the paper. If a page is not printed, please inform the supervisor immediately.
- Write your index number on each and every page of the question paper.
- The duration of the paper is **Two (2)** Hours.
- This paper has **4** questions on **15** pages.
- Answer **question 1** and **any 2** of the remaining 3 questions.
- Question **1** carries exactly **40 marks** and each of other **3** questions carries exactly **30 marks**.
- **Write your answers on the space provided** on this question paper.
- Any electronic device capable of storing and retrieving text including electronic dictionaries and mobile phones are **not allowed**.

To be completed by the examiners

1	
2	
3	
4	
Total	

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1. (a). How software engineering differ from computer science?

[2 marks]

(b). How software projects differ from other projects? Describe three (3) differences.

[6 marks]

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(c). What is the need to learn software engineering concepts when you know programming?

[4 marks]

(d). State the difference between functional requirements and non-functional requirements.

[4 marks]

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(e). Requirement engineering is the hardest process in software engineering. Explain your views on this statement with three (3) reasons.

[6 marks]

(f). State whether you are agree or not with the following statements. Give reasons for your answer.

[18 marks]

i. If a software production gets behind schedule, one can add more programmers and catch up.

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ii. The only deliverable work product for a successful project is the working program.

iii. Inability of expressing requirements is one of the major cause of failed software projects.

iv. Process adopted for one software project is same as the process adopted from another project.

v. There are more defects in the design phase than in the coding phase.

vi. User requirements are expressed as scenarios in Extreme Programming.

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2. (a). Briefly describe four (4) generic activities in a software process.

[6 marks]

(b). What is Agile software Development? Briefly describe three (3) features of agile process.

[8 marks]

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(c). How software architecture different from software design?

[4 marks]

(d). Compare and contrast Repository Model with Client Server Model. Provide an example for each model.

[6 marks]

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(e). Briefly describe three (3) Object Oriented concepts.

[6 marks]

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3. (a). What is "Code Reviews". Briefly describe two types of code reviews.

[6 marks]

(b). State two (2) differences Between Black Box Testing and White Box Testing.

[4 marks]

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(c). Briefly explain Unit Testing, Integration Testing, System Testing and Acceptance Testing.

[8 marks]

(d). What is the difference between a *defect* and a *failure*?

[4 marks]

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(e). Why software maintenance is important? Describe four (4) reasons.

[8 marks]

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4. (a). Sate the difference between *Evolution* and *Servicing*.

[4 marks]

(b). Briefly describe three (3) risk categories. Which of the risk is the failure of a purchased component to perform as expected?

[4 marks]

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(c). Why do projects always seem to cost more than expected?

[4 marks]

(d). Why do we need "Software Project Management". State two reasons.

[4 marks]

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(e). Briefly explain following software quality attributes.

i. Reliability

[2 marks]

ii. Robustness

[2 marks]

iii. Reusability

[2 marks]

iv. Scalability

[2 marks]

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(f). Briefly explain two (2) problems with Standards.

[6 marks]

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