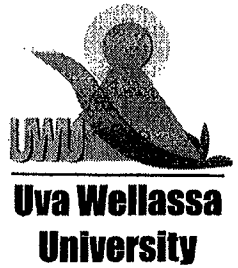


Uva Wellassa University, Sri Lanka
Faculty of Science and Technology
End Semester Examination –August/September 2011
CST204-2 Software Engineering & Quality Assurance (Repeat)



INSTRUCTIONS TO CANDIDATES

1. This paper contains **4** Questions in **3** pages.
2. Each Question carries **25** marks.
3. Answer **ALL** questions.
4. Time Allowed: **Two (2) Hours**.

Question 1

The Sri Lankan College of Business Studies (SCBS) was established in 1968. Since its establishment, the SCBS has aimed at achieving excellence in the services and programs it offers to clients who are drawn from both the public sector and the private sector of Sri Lanka, as well as from overseas countries.

SCBS decided to develop a web site for them and hired a web development company to get that service done. Following is a part of the conversation between the system analyst of the hired company and the director of the SCBS.

Director: I want you people to develop a nice website to promote our education and training programs and also the consultancy and advisory services. There are some other features that we need to add as well, but before doing that we have to discuss the matter in the board meeting next month. The important thing is to get the web presence as soon as possible. All of our competitors have websites and we are being left behind. As long as you can put up the basic information, we can agree on the additional features after the board meeting.

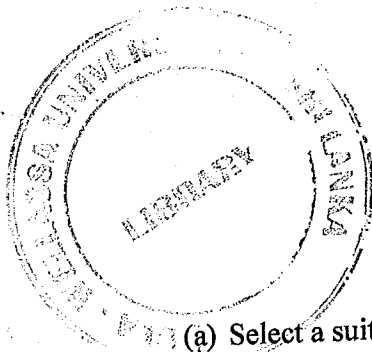
Analyst: It doesn't matter sir, I can start developing the web site with the details that you have given me earlier.

Director: That's good. Then we could show the site to the board of directors at the board meeting. That may convince them to approve the rest.

Analyst: Exactly when is the board meeting sir?

Director: Today is 8th of September, right? We have our next meeting on 4th of October. Does it give you enough time?

Analyst: Yes sir, No problem.



- (a) Select a suitable process model for the development of the web site of SCBS. Justify your selection. [4 marks]
- (b) Describe the above model you have selected, in detail. [10 marks]
- (c) Among two major software product types, what would be the software type this development belongs to? Justify your answer. [3 marks]
- (d) Identify the functional and non-functional requirements for above system. [5 marks]
- (e) What are the attributes of good software? [3 marks]

Question 2

- (a) Explain why programs that are developed using evolutionary development are likely to be difficult to maintain. [5 marks]
- (b) List four fundamental process activities common to all software process models and briefly describe each of them. [10 marks]
- (c) List down the good practices in Rational Unified Process (RUP). [5 marks]
- (d) Explain user interface design principles. [5 marks]

Question 3

- (a) "Software maintenance cost is usually greater than development cost". State whether you agree with the above statement. Justify your answer. [5 marks]
- (b) Explain followings
- i. Lehman's Laws of software evolution [5 marks]
 - ii. Quality reviews [5 marks]
 - iii. Configuration management [5 marks]
 - iv. Component-based software engineering. [5 marks]

Question 4

- (a) Using examples, explain the terms “**verification**” and “**validation**”. [4 marks]
- (b) Compare and contrast “**white box testing**” and “**black box testing**” with respect to program testing. [5 marks]
- (c) Briefly explain the followings,
- i. Stress testing [3 marks]
 - ii. Regression testing [3 marks]
 - iii. Release testing [3 marks]
- (d) Explain the importance of performing software testing from early stages of software development life cycle. [3 marks]
- (e) State the advantages of software inspection over software testing. [4 marks]

End of the paper