



UNIVERSITY OF COLOMBO, SRI LANKA

UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING

DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY (EXTERNAL)

Academic Year 2010/2011 – 2nd Year Examination – Semester 4

IT4304: Rapid Software Development
PART 2 - Structured Question Paper

7th August, 2011
(ONE HOUR)

To be completed by the candidate

BIT Examination Index No: _____

Important Instructions:

- The duration of the paper is **1 (one) hour**.
- The medium of instruction and questions is English.
- This paper has 4 **questions** and **08 pages**.
- **Answer all questions.** All questions **do not** carry equal marks.
- **Write your answers** in English using the space provided **in this question paper**.
- Do not tear off any part of this answer book.
- Under no circumstances may this book, used or unused, be removed from the Examination Hall by a candidate.
- Note that questions appear on both sides of the paper.
If a page is not printed, please inform the supervisor immediately.

Questions Answered

Indicate by a cross (×), (e.g. ☐) the numbers of the questions answered.

To be completed by the candidate by marking a cross (×).	Question numbers			
	1	2	3	4
To be completed by the examiners:				

- 1) (a) Give 3 (three) situations that would benefit from using iterative and incremental development methods for software development.

ANSWER IN THIS BOX

1. *When there is a need to get basic functionality to market early*

2. *When projects uses new technology*

3. *For projects which have lengthy development schedules*

(09 Marks)

- (b) Name 3 (three) iterative development methods.

ANSWER IN THIS BOX

1. *XP*

2. *Unified process*

3. *RUP*

(06 Marks)

- (c) Give 3 (three) benefits of using prototyping approach.

ANSWER IN THIS BOX

1. *Good communication and better understandings among developers and customers*

2. *Prototypes can provide early training for users of the system*

3. *Incomplete or inconsistent requirements can be identified*

(09 Marks)

- (d) What is COTS based approach in Rapid Application Development? Give an advantage of COTS based approach.

ANSWER IN THIS BOX

Commercial Off the Shelf Development. Reuses components that are complete application systems. For example a prototype can be created by linking a database, a word processor, a spreadsheet etc. and written code to find relationships between the components.

Advantage: Lot of functionality can be implemented quickly at a very low cost.

(05 Marks)

2)

“WinWord” project took five years for development, consumed 660 man-months of development effort and produced a system of 249,000 lines of code. This project’s initial schedule was 1-year even though the shortest possible schedule for a project of its kind is 26 months (or 460 days). The final 5-year schedule was approximately five times more than the originally planned schedule.

- (a) What was the mistake done during planning and scheduling the “WinWord” project?

ANSWER IN THIS BOX

Overly optimistic scheduling

(03 Marks)

- (b) What could be the root causes for the mistakes committed during planning and scheduling the project? Name 3 root causes.

ANSWER IN THIS BOX

- 1. External immovable deadlines*
- 2. Underestimating the project*

Continued..

4. *project managers believe that developers
will work harder for ambitious schedules*

(09 Marks)

- (c) What could be the other negative effects that could have occurred in “WinWord” project due to poor planning and scheduling? Name 3(three) negative effects.

ANSWER IN THIS BOX

1. *Poor quality planning*

2. *leads to premature convergence*

3. *motivation decreases rapidly among the developers*

(09 Marks)

3.
(a) Name 3 (three) roles in Scrum methodology.

ANSWER IN THIS BOX

1. *Product owner*

2. *Team*

3. *Scrum master*

(06 marks)

- (b) Give responsibilities of each of the scrum roles mentioned above.

ANSWER IN THIS BOX

Continued..

Product owner:

create projects initial overall requirements, ROI objectives, release plans are ensure that most valuable functionality is produced first using

Team:

develop functionality

Scrum master:

Ensure everyone follows scrum rules and practices.

(06 Marks)

- (c) List the activities involved in Scrum project planning.

ANSWER IN THIS BOX

Product Selected

Sprint

Backlog ----→ Product Backlog -----

→ Backlog--→Demonstration of

New

functionality

(05 Marks)

- (d) How is the information communicated in Scrum projects?

ANSWER IN THIS BOX

Face-face communication

Daily scrum meeting

(04 Marks)

- (e) How is the project progress reported in Scrum project?

ANSWER IN THIS BOX

Burndown chart

(04 Marks)

4.

- (a) Name an IDE for rapid development by giving two (2) reasons for one to select it.

ANSWER IN THIS BOX

IDE:

NetBeans

Reasons:

Easy to use

Free and open source

(06 Marks)

- (b) Briefly describe how to test and debug the applications with the IDE mentioned in 4(a) above.

ANSWER IN THIS BOX

JUnit testing

run the application in the IDE's debugger to check for errors.

Continued

(05 Marks)

(c) Give 1 (one) popular example for each of the following agile tool categories.

1. Iteration planning/Release planning
2. Version controlling and integration

<u>ANSWER IN THIS BOX</u>		
1. Iteration planning/Release planningJIRA.....	..
2. Version controlling and integration:SVN.....	..

(04 Marks)

(d) Briefly describe each of the following in relation to a Content Management System(CMS) of your choice.

- (i) Organizing content
- (ii) Theming
- (iii) Optimizing the CMS

<u>ANSWER IN THIS BOX</u>		
Name of the Content Management System:	Drupal
Organizing content:		
<i>As Pages and Stories</i>		
Continued.		

Theming:

- *can do more with a theme than change the appearance of an entire site.*
- *It is also possible to "theme" only certain sections of a site, select types of content, or even individual pages.*
- *For example, theme could specify a different look for just the front page of your site*

Optimizing the CMS:

- *enable the caching system of Drupal application*
- *disable all the modules/blocks that you are not actually using*
optimize Drupal database
- *reducing the content displayed on front page. Too much links/images/scripts on page can significantly increase the time needs to load.*

(10 Marks)
