



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 (x), (e.g. x) the numbers of the questions answered.

To be completed by the candidate by marking a cross (x).	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.

<u>ANSWER IN THIS BOX</u>	
1.	<i>When there is a need to get basic functionality to market early</i>
2.	<i>When projects uses new technology</i>
3.	<i>For projects which have lengthy development schedules</i>

(09 Marks)

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

<u>ANSWER IN THIS BOX</u>	
1.	<i>XP</i>
2.	<i>Unified process</i>
3.	<i>RUP</i>

(06 Marks)

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

<u>ANSWER IN THIS BOX</u>	
1.	<i>Good communication and better understandings among developers and customers</i>
2.	<i>Prototypes can provide early training for users of the system</i>
3.	<i>Incomplete or inconsistent requirements can be identified</i>

(09 Marks)

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

<u>ANSWER IN THIS BOX</u>	
<i>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.</i>	
<i>Advantage: Lot of functionality can be implemented quickly at a very low cost.</i>	

(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?

<u>ANSWER IN THIS BOX</u>	
<i>Overly optimistic scheduling</i>	

(03 Marks)

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

<u>ANSWER IN THIS BOX</u>	
<i>1. External immovable deadlines</i>	
<i>2. Underestimating the project</i>	
	Continued..

4. <i>project managers believe that developers will work harder for ambitious schedules</i>

(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. <i>Poor quality planning</i>	
2. <i>leads to premature convergence</i>	
3. <i>motivation decreases rapidly among the developers</i>	

(09 Marks)

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

ANSWER IN THIS BOX	
1. <i>Product owner</i>	
2. <i>Team</i>	
3. <i>Scrum master</i>	

(06 marks)

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

ANSWER IN THIS BOX	

Continued..

<i>Product owner:</i>
<i>create projects initial overall requirements, ROI objectives, release plans are ensure that most valuable functionality is produced first using</i>
<i>Team:</i>
<i>develop functionality</i>
<i>Scrum master:</i>
<i>Ensure everyone follows scrum rules and practices.</i>

(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
<i>Face-face communication</i>
<i>Daily scrum meeting</i>

(04 Marks)

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

ANSWER IN THIS BOX	
<i>Burndown chart</i>	

(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:	<i>NetBeans</i>
Reasons:	
<i>Easy to use</i>	
<i>Free and open source</i>	

(06 Marks)

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

ANSWER IN THIS BOX	
<i>JUnit testing</i>	
<i>run the application in the IDE's debugger to check for errors.</i>	

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)
