



UNIVERSITY OF COLOMBO, SRI LANKA

UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING

DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY (EXTERNAL)

Academic Year 2004/2005 – 2nd Year Examination – Semester 4

IT4202: Software Project Management

PART 2 – Structured Question Paper

13th August, 2005
(TWO HOURS)

To be completed by the candidate

BIT Examination Index No: _____

Important Instructions:

- The duration of the paper is **2 (Two) hours**.
- The medium of instruction and questions is English.
- This paper has **4 questions** and **15 pages**.
- **Answer all 4 questions.** Question **1** carries **40 marks** and **other three** questions carry **20 marks each**.
- **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).	1	2	3	4
To be completed by the examiners:				

CASE STUDY

“ColombaKade” is a famous hardware store for supplying building construction material in the South, and dealing with both wholesale and retail business. It has several branches in the Southern cities. Mr. Sudantha, who is one son of the founder of this organization, is the current managing director and he wants to expand business activities using Information and Communication Technology (ICT).

Mr. Sudantha presented his idea to the other Directors of the business at one of the recent Board Meetings of the Directors and they agreed to allocate some money to initiate the project. However, some Directors felt that this could be a waste of money and that there be a significant benefit to the business. Since Mr. Sudantha is a busy businessman, he appointed a small team to start the project. Mr. Lasith who is an assistant accountant, was appointed as the leader of the team and he was given two other members from new recruits. In addition, Mr. Sudantha will also help the team in evaluating and finalizing decisions.

The project team was instructed to use ICT in three directions: give publicity to the business operations since many foreign NGOs are working in the area to reconstruct tsunami affected houses, streamline internal management of all branches in order to share all resources and provide supply chain management through an e-business model.

- 1) (a) Who are the stakeholders of “ColombaKade ICT” project? (Name at least five groups)
(05 marks)

ANSWER IN THIS BOX

- (b) Since the local government may provide some financial support to the project, Mr. Sudantha wanted to select someone from the accounts department as the manager of the project. Describe your views on the appointment of Mr. Lasith as the project manager considering the nature of work involved.

(08 marks)

ANSWER IN THIS BOX

Continued...

- (12 marks)**

ANSWER IN THIS BOX

3

- (d) The following table describes the projected revenue and costs of the project during the next five years. Calculate the Net Present Value (NPV), Payback Period and Return on Investment (ROI). Assume that the interest rate is 10% per annum and is fixed during the project period.

	Year 1	Year 2	Year 3	Year 4	Year 5
Revenue	0	2000	3000	4000	5000
Costs	5000	1000	1000	1000	1000

(15 marks)

ANSWER IN THIS BOX

- 2) (a) Define a suitable Work Breakdown Structure (WBS) for the “ColombaKade ICT” Project. Extend at least two level-one items to the level-three (i.e. work package level).

(12 marks)

ANSWER IN THIS BOX

Continued...

[illegible]

Continued...

- (08 marks)**

[illegible]

8

[illegible]

Continued...

- 3) (a) Suppose Mr. Lasith has provided the following brief description about the website for the ColombaKade and requested you to prepare the cost estimate for setting up the website.

“The main page of the website should contain a photo of the head office. A frame based structure should be used to present the content. A menu bar will be used to access different web pages placed. One page is allocated to present information about Board of Directors of the organization. Dynamic pages should be developed to list prices of items of different categories (both retail and wholesale prices).”

Which technique would you use for the cost estimation? Give Reasons.

What are the components which can be used to calculate object points in a web page? How do you calculate total number of object points in a website? State your assumptions in the answer.

Based on the description about the ColombaKade website, calculate the total effort in the person-months using COCOMO II early prototyping formula. Assume 20% can be supplied using exiting components and the productivity rate is 12. State your assumptions to explain/justify the object points calculation.

Hint: *COCOMO II Early prototyping formula*

$$PM = \frac{NOP * \left(1 - \frac{\% reuse}{100}\right)}{PROD}$$

PM is the effort in person-months, NOP is the number of object points and PROD is the productivity rate.

(12 marks)

ANSWER IN THIS BOX

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Continued...

- (b) If the website allows customers to place online orders and to settle their bills using credit cards, what are the key quality attributes which must be considered? Mr. Lasith has a poor knowledge about quality planning and needs your assistance. Describe what information is required as the input for the process and what the outputs would be of quality planning process.

(08 marks)

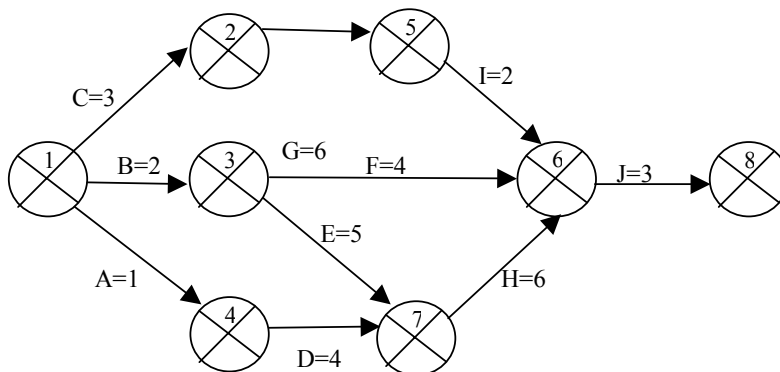
ANSWER IN THIS BOX

- 4) (a) What is the critical path in a project network? Why is it so important in the time management of a project?

(05 marks)

ANSWER IN THIS BOX

- (b) Calculate the Earliest Start (ES), Earliest Finish (EF), Latest Start (LS), Latest Finish (LF), Free Slack (FS) and Total Slack (TS) for the following network diagram. Project Start date is November 2nd which is a Monday. No work is done during weekends and there are also no holidays on workdays. Assume that the work starts in the morning of a day and finishes in the evening.



In the diagram, activity durations are given in days.

(15 marks)

ANSWER IN THIS BOX					
Activity	Earliest Start (ES)	Earliest Finish (EF)	Latest Start (LS)	Latest Finish (LF)	Free Slack(FS) / Total Slack(TS)
A					
B					
C					
D					
E					
F					
G					
H					
I					
J					
