



FINAL
Examination Paper

(COVER PAGE)

Session : January 2014

Programme : Diploma In Information And Communication Technology
(DICTN/DICTI)

Course : ICT1106 / CSC1106 : System Analysis And Design

Date of Examination : March 11, 2014

Time : 2:00pm – 4:00pm Reading Time: Nil

Duration : 2 Hours

Special Instructions :

Answer any **FOUR (4)** questions.

Materials permitted : Nil

Materials provided : Nil

Examiner (s) : Mr. Tan Kok Cheng, Mugunthan Kandasamy.

Moderator : Associate Professor Dr. Abdullah Gani

This paper consists of 4 printed pages, including the cover page.

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DIPLOMA IN INFORMATION AND COMMUNICATIONS TECHNOLOGY (DICTN)
 ICT1106: SYSTEM ANALYSIS AND DESIGN
 FINAL EXAMINATION: JANUARY 2014 SESSION

Instructions: This paper consists of **SIX (6)** questions. Answer any **FOUR (4)** questions in the answer booklet provided. All questions carry equal marks.

Question 1

- (a) Define *information system*. Explain **THREE (3)** advantages of using information system. (8 marks)
- (b) Explain **SIX (6)** types of traditional information systems (IS). (9 marks)
- (c) Explain briefly the **FOUR (4)** different types of application software. (8 marks)

Question 2

- (a) Consider the following information for a given project:

Activity	Dependent	Best Case (weeks)	Probable Case (weeks)	Worst Case (weeks)
A	-	3	4	5
B	-	3	4	11
C	A	2	3	4
D	A	1	2	3
E	B	2	4	6
F	C	1	3	5
G	D,E	1	2	3
H	E	1	1	1
I	H	2	3	4

Determine the duration of each project activity and identify the formula used.

- (5 marks)
- (b) Draw the PERT/CPM Chart based on the table given above and determine the critical path for the project. State a reason for your critical path selection. (12 marks)
- (c) List out the values of Earliest Completion Time (ECT) and Latest Completion Time (LCT) for all events in the PERT/CPM chart in (b) in a suitable table. (8 marks)

Question 3

- (a) Explain briefly **FOUR (4)** reasons for a company to raise a system request. (8 marks)
- (b) Define *economic feasibility*. State any **SIX (6)** areas the analyst needs to estimate the cost. (8 marks)
- (c) What is a questionnaire? Why is a questionnaire created? State any **SIX (6)** rules that can be used to guide in the design of a questionnaire. (9 marks)

Question 4

- (a) What is a *system requirement*? Explain **FIVE (5)** categories of questions that are used to identify and describe system requirements. (9 marks)
- (b) Draw an appropriate diagram that shows correctly labelled relationships between these various shapes of rectangle, circle, triangle and square. Identify the common relationship that these objects belong. (7 marks)
- (c) Based on the scenario describe below, sketch a suitable use case diagram to illustrate the processes involved. You may suggest assumptions if necessary.

“An owner of a cloud based Point of Sales company has to manage the inventory for his entire range of branches spread throughout the country. As the owner, a person is entitled to add branches, edit branches. Once a new branch is added, the system will generate a new branch programmatically so that the specific branch is ready to use.

The manager of each branch on the other hand, will only be able to add, edit, and delete products from his branch’s inventory. A branch will also have their own sales representative, who will be able to scan products, and print a receipt (optional). To scan a product, the sales representative will use a qr code reader to scan the barcode on the item. This can also be done by the manager of the particular branch. The manager of the branch will be able to see a sales report of his branch, but the owner will be able to see the sales report of all the branches.”

(9 marks)

Question 5

- (a) What is a *chargeback*? Briefly describe the **FOUR (4)** methods of chargeback. (9 marks)
- (b) Explain the **FOUR (4)** factors an IT system analyst should consider when developing the time and cost estimates for a given software development project. (8 marks)
- (c) Sketch a proper Gantt chart with **FOUR (4)** activities and illustrate how these activities are monitored as the project is executed midway. (8 marks)

Question 6

- (a) Explain any **TWO (2)** methods used in a system changeover. (8 marks)
- (b) Briefly explain the **FOUR (4)** types of system maintenance. State **TWO (2)** examples for each of the four types of the system maintenance. (8 marks)
- (c) State **THREE (3)** reasons to support the importance of documentation. Briefly explain **FOUR (4)** basic facts about system documentation. (9 marks)

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