



**FINAL**  
Examination Paper

(COVER PAGE)

Session : August 2014

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

Course : ICT1106 / CSC1106 : System Analysis And Design

Date of Examination : December 8, 2014

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

Duration : 2 Hours

Special Instructions :

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

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Materials permitted : Non-Programmable Calculator

Materials provided : Graph paper

Examiner (s) : Mr. Tan Kok Cheng, Shahrman Mohd Said.

Moderator : Associate Professor Dr. Abdullah Gani

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

INTI INTERNATIONAL COLLEGE SUBANG

DIPLOMA IN INFORMATION AND COMMUNICATIONS TECHNOLOGY (DICTN)  
ICT1106: SYSTEMS ANALYSIS AND DESIGN  
FINAL EXAMINATION: AUGUST 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) Explain the **FOUR (4)** layers of an organization structure. With the aid of a diagram, suggest the types of systems each layers of an organization is expected to use. (10 marks)
- (b) Describe the phases of System Development Life Cycle (SDLC). Draw a suitable diagram to illustrate this SDLC. (15 marks)

**Question 2**

- (a) Explain **FIVE (5)** reasons for a development of new software. (10 marks)
- (b) Explain **FIVE (5)** issues you need to consider when you desire to develop specific time and cost estimates for a software development project. (10 marks)
- (c) List any **FIVE (5)** external factors that can affect the software development project. (5 marks)

**Question 3**

- (a) Explain **FIVE (5)** typical questions you should ask when you are gathering information or requirement from end users. (10 marks)
- (b) Explain the goal of using a questionnaire in information gathering. List any of the **EIGHT (8)** rules that govern the design of a questionnaire. (10 marks)
- (c) Briefly explain the information gathering technique called observation. What is the Hawthorne Effect? (5 marks)

**Question 5**

- (a) Describe below are the scenarios of an Airline System. Draw a use case diagram to denote the processes involved.

“In this Airline System, the Ticketing Clerk will add the reservation of a passenger into the system. This reservation can be cancelled by the clerk when instructed. At the airport, the Check-in Clerk will weigh the luggage presented to him at the counter. He will then proceed to assign either an aisle or a window seat to the passenger.

(7 marks)

- (b) AmOL is an online bookstore. It requires customers to login in order to place an order with the company. This online bookstore provides shopping carts for their customers to add items into their order. The items that are available for customer ordering are books, music CDs and software. Draw the required class diagram.

(11 marks)

- (c) What is inheritance? Explain this concept using **TWO (2)** suitable examples.

(7 marks)

**Question 6**

- (a) Briefly explain any **FIVE (5)** different types of testing that are carried out during the system development.

(10 marks)

- (b) Briefly explain any **THREE (3)** types of system changeover that can be used to replace an obsolete system with a newly developed system.

(15 marks)

**--THE END--**

ICT1106 (F) Aug14/TanKC/290814

## Question 4

Consider the following information for a given software development project:

Activity	Dependent	Time Estimated (weeks)
A	-	2
B	-	4
C	A	3
D	B	3
E	A	5
F	C,D	4
G	B	3
H	F,G	4
I	E,H	2
J	F,G	5

- (a) Draw the PERT/CPM diagram based on the table of information given above and determine the critical path for the project. State a reason for your critical path selection  
(10 marks)
- (b) List out the values of Earliest Completion Time (ECT) and Latest Completion Time (LCT) for all events in the PERT/CPM diagram in (b) in a suitable table.  
(7 marks)
- (c) a) Given below is a table of costs and benefits for the software development project as described in Q3. Using the information provided,
- Determine the estimate time for the payback period of this project. Give a reason to explain your estimated payback period.
  - Calculate the overall Return on Investment (ROI) for this project.

What can you conclude from the values determined above?

Year	Costs (RM)	Benefits (RM)
0	60,000	3,000
1	17,000	28,000
2	18,500	41,000
3	19,200	34,000
4	21,000	36,000
5	22,000	39,000

(8 marks)