

FINAL
Examination Paper

(COVER PAGE)

Session : January 2016

Programme : Diploma In Information And Communication Technology (DICTN)

Course : ICT1106: System Analysis And Design

Date of Examination : March 11, 2016 (Friday)

Time : 11.00am – 1.00pm Reading Time : Nil

Duration : 2 Hours

Special Instructions :

Answer any FOUR (4) questions.

Materials permitted : Non-Programmable Calculator

Materials provided : Nil

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

Moderator : Professor Dr. Abdullah Gani

This paper consists of 5 printed pages, including the cover page

DIPLOMA IN INFORMATION AND COMMUNICATIONS TECHNOLOGY
ICT1106: SYSTEM ANALYSIS AND DESIGN
FINAL EXAMINATION: JANUARY 2016 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) List the **THREE (3)** advantages of using information system. Briefly describe any **THREE (3)** examples of information systems and their use. (15 marks)
- (b) List any **FOUR (4)** skills that system analysts must possess in order to carry out their responsibilities effectively. Explain the **THREE (3)** responsibilities of a system analyst. (10 marks)

Question 2

- (a) Explain the term, *technical feasibility*. State the **FIVE (5)** factors you need to consider when you are evaluating this type of feasibility. Identify who will evaluate this feasibility study? (10 marks)
- (b) Briefly explain any **THREE (3)** internal factors and any **TWO (2)** external factors that can affect system development projects. (15 marks)

Question 3

- (a) What is a *system requirement*? These requirements can be broadly grouped into five categories. List all these **FIVE (5)** categories and give at least **TWO (2)** examples for each of category identified. (12 marks)
- (b) Identify and briefly explain briefly the **FIVE (5)** fact finding techniques used in system investigation. Arrange these techniques in the best order of execution when you do your fact-finding. Explain your order of execution. (13 marks)

Question 4

- (a) Understand the following system requirements for an online shopping system.

A customer can search for products within the system. He can make a purchase order online. The customer is required to make payment before the order can be processed.

Based on the above requirement statements, identify the **FOUR (4)** objects. Sketch these objects with at least 2 attributes and 2 methods.

(8 marks)

- (b) What is *polymorphism*? Give **TWO (2)** examples to illustrate polymorphism. You are required to show at least **THREE (3)** objects in each of your example.

(8 marks)

- (c) The following table describes the costs and benefits of developing and operating a new system for the next several years. Using this table information, determine the return on investment (ROI) at Year 6. What can you conclude from this ROI?

| | YEAR 0 | YEAR 1 | YEAR 2 | YEAR 3 | YEAR 4 | YEAR 5 | YEAR 6 |
|---------------------|--------|--------|--------|--------|--------|--------|--------|
| COST (RM) | 60,000 | 17,000 | 18,500 | 19,200 | 21,000 | 22,000 | 23,300 |
| BENEFIT (RM) | 3,000 | 28,000 | 31,000 | 34,000 | 36,000 | 39,000 | 42,000 |

(9 marks)

Question 5

- (a) List any **TWO (2)** reasons why documentation is important in a given software development? Briefly discuss the *system documentation* and the *user documentation* that were created in a given system development life cycle.

(6 marks)

- (b) What is ISO definition of a *software quality*? Briefly explain the concept of *system testing*. List **TWO (2)** types of system testing that are normally used in a software development life cycle.

(6 marks)

- (c) The following is a description of RZy Company's Online Shopping System.

An online customer can enter into this online system to view the products offered for sale by the company. The online customer may decide to purchase some of the products he has just viewed.

Before he purchases the products, this customer should register his personal information with this online system. This system allows customer to review his personal information when he desires to do so. This shopping system also allows any of its customers to write reviews on its products.

Once the online customer purchases the products, the company's back-end computer system, the payment processing system, will accept his payment immediately. When the payment is finalized, the company's warehouse clerk will proceed to fulfil the customer's order and have the products delivered to the customer at his home address.

To ensure the products are always available for sale and delivery, the warehouse manager will constantly manage and check on the products' inventory level within this system.

The Marketing Executive also interacts with this system by managing the information and pictures of products for sales. He also generates reports on product sales.

Based on the description given above, draw a suitable use case diagram.

(13 marks)

Question 6

- (a) Briefly describe the **FOUR (4)** methods used in chargeback.

(12 marks)

- (b) Consider a software development project with the following network of activities as shown in Diagram 1. Please note that the duration of the activities is measured in weeks.

Using the information in Diagram 1, you are required to do the following:

- (i) Determine the Earliest Completion Time (ECT) and Latest Completion Time (LCT) for each node.
- (ii) Determine all the paths and decide on which path is the critical path for this project. Give a reason for your answer.
- (iii) Can Activity "C" be delayed without causing the entire project to be delayed? Give a reason to support your answer.

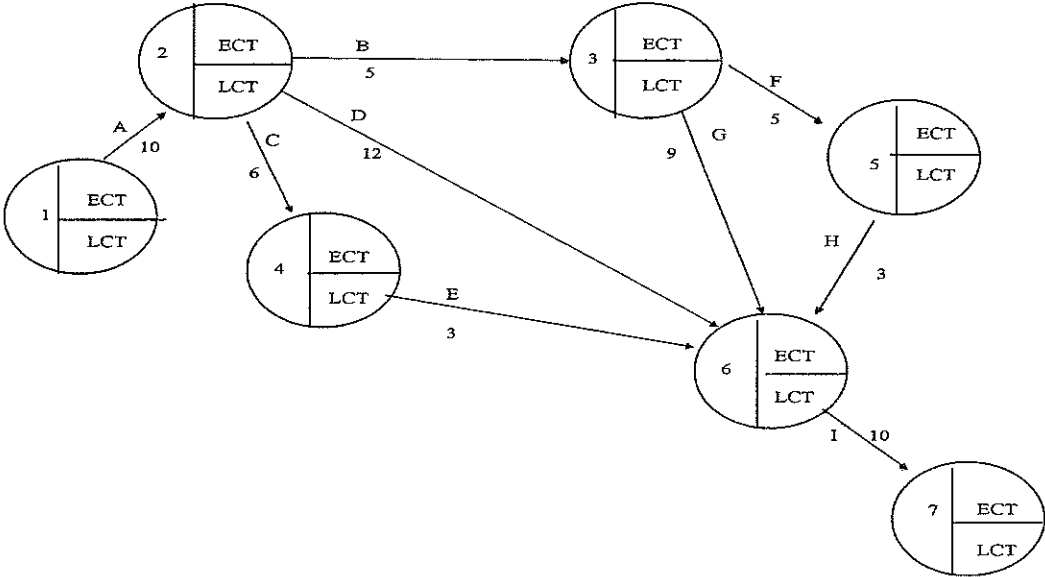


Diagram 1

(13 marks)

~THE END~
ICT1106(F) January 2016

