

**FINAL**  
Examination Paper

(COVER PAGE)

Session : AUGUST 2019

Programme : Diploma In Information And Communication Technology (DICTN)  
Diploma In Information Technology (DITN)

Course : ICT1106: System Analysis And Design

Date of Examination : December 12, 2019 (Thursday)

Time : 8:00am – 10:00am Reading Time : Nil

Duration : 2 Hours

**Special Instructions :**

This paper consists of **SIX (6)** questions. Answer any **FOUR (4)** questions in the answer booklet provided.

Materials permitted : Non-Programmable Calculator

Materials provided : Nil

Examiner(s) : Neesha Jothi and Tan Kok Cheng

Moderator : Professor Dr. Abdullah Gani

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

DIPLOMA IN INFORMATION AND COMMUNICATIONS TECHNOLOGY PROGRAMME  
(DICTN)  
DIPLOMA IN INFORMATION TECHNOLOGY PROGRAMME (DITN)  
ICT1106: SYSTEM ANALYSIS AND DESIGN  
FINAL EXAMINATION: AUGUST 2019 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) Recognize the **FOUR (4)** characteristics a system analyst can learn by asking questions about the information systems. (12 marks)

(b) Illustrate a diagram to emphasize the Waterfall model. Based on the diagram describe any **THREE (3)** phases of the said Waterfall model. (13 marks)

**(Total: 25 marks)**

**Question 2**

(a) State *technical feasibility*. List the **FIVE (5)** questions you would use to determine the technical feasibility of a proposed new system. (7 marks)

(b) List **TWO (2)** examples of *intangible cost*. Discuss the difficulty of justifying *intangible cost*. (6 marks)

(c) Define *system requirements*. List the **FIVE (5)** categories of system requirement and provide **TWO (2)** examples for each of the category identified. (12 marks)

**(Total: 25 marks)**

**Question 3**

- (a) Explain the term *inheritance*. Provide **ONE (1)** suitable example to illustrate your answer.

(5 marks)

- (b) The following is a system requirement for an inventory subsystem.

*The warehouse staff receives the products delivered by its supplier. The supplier submits the company with an invoice after its delivery.*

Interpret the above requirement statements by identifying at least **FOUR (4)** objects. Sketch these objects with at least 3 attributes and 1 method

(10 marks)

- (c) The following table describes the projected costs and benefits of developing and operating a new system for the next five years. It also includes present value factors at 6% for each year.

Year	0	1	2	3	4	5
Costs (RM)	100,000	10,000	10,000	10,000	12,000	15,000
Benefits (RM)	0	60,000	80,000	100,000	100,000	90,000
Present Value at 6%	1.000	0.943	0.890	0.840	0.792	0.747

Using the information from above, you are required to answer the following:

- i) Calculate the cumulative present values of its cost and of its benefits for all the five years.
- ii) Determine when the payback will occur for this new system.
- iii) Determine the Return of Investment (ROI) for this new system at Year5.

(10 marks)

**(Total: 25 marks)**

**Question 4**

- (a) The following is a description of a Video Rental System operated by BigMegVideo Store.

This video store requires a customer to register himself into the computer system before (s)he can rent any video.

The customer will search for the title of the video (s)he wants to rent within the system. Once the customer has finalized the video title, the system will advise the customer the exact location of the store where the video can be found.

The customer will take the video from its location within the store and bring it to the store clerk to process the video rental. The system may check for any discount offered to the rental of that particular video. It will then proceed to process the payment for the video.

On any given day, a customer may return the rented video. The store clerk will always check the video for a late return. If the video is returned past its due date, the customer will have to pay for a late return.

Based on the above description, create a suitable Use Case Diagram for this Video Rental System.

(15 marks)

- (b) Explain **TWO (2)** reasons why documentation plays an important part in system development.

(5 marks)

- (c) List the **FIVE (5)** steps you would use to implement in-house software training.

(5 marks)

**(Total: 25 marks)**

**Question 5**

- (a) List any **FIVE (5)** reasons for conducting a post implementation review on a new application system.

(5 marks)

- (b) Using the information described below, you are to sketch a class diagram. In this diagram, you are to identify the objects (only object names are required), indicate the nature of the object relationship and its cardinality (UML notation).

*In an online bookstore, a customer can add items (s)he wants to order into a shopping cart. The items that are available for customer to order are books, music CDs and software.*

(10 marks)

- (c) Briefly discuss the differences between Integration Testing and System Testing. With the illustration of a diagram, indicate where these tests are executed.  
(10 marks)

**(Total: 25 marks)**

### Question 6

- (a) Consider the following software development project with the following network.

Activity Name	Activity Duration (months)	Immediate Preceding Activity
A	2	None
B	3	None
C	3	B
D	4	A, C
E	2	B
F	1	D

You are to do as follows:

- i. Draw the PERT/CPM diagram that fits the table of description above
- ii. Determine the critical path of this project. Give a reason for your selection
- iii. Determine the Earliest and Latest Completion Times (ECT/LCT) for every node.

(15 marks)

- (b) Briefly explain the **FOUR (4)** factors that can influence the time and cost estimate of a given IT project

(10 marks)

**(Total: 25 marks)**

~The End~