

 **INTI International**
University & Colleges

FINAL
Examination Paper

(COVER PAGE)

Session : JANUARY 2018

Programme : Diploma In Information And Communication Technology (DICTN)

Course : ICT1106: System Analysis And Design

Date of Examination : 7 March, 2018 (Wednesday)

Time : 8:00 am – 10:00 am 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. All questions carry equal marks.

Materials permitted : Non-Programmable Calculator

Materials provided : Nil

Examiner(s) : Tan Kok Cheng and Paul Chin

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 2018 SESSION

Instruction: 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*. List the **THREE (3)** advantages of using information system. (5 marks)
- (b) List any **TWO (2)** responsibilities of a system analyst. Explain any **FOUR (4)** skills a system analysts must possess in order to carry out their responsibilities effectively. (10 marks)
- (c) What **FOUR (4)** reasons a business executive will apply when he requests for a new system. (10 marks)

Question 2

- (a) What is *operational feasibility*? Illustrate by listing any **THREE (3)** questions a system analyst will employ when he investigates the operational feasibility. (5 marks)
- (b) Explain these **THREE (3)** fact-finding techniques: *Interview*, *Observation* and *Document review*. Applying only these techniques, assess and arrange the sequence of investigation that you need so that you may capture the user requirements effectively. Explain your reason for your chosen order. (10 marks)
- (c) The following is a system requirement for an online shopping system.
- This system will have a shopping cart where a customer can use to shop for the various items. The customer can pay for the items using his/her credit card.*
- Translate the above requirement statements by identifying at least **FOUR (4)** objects. Sketch these objects with at least 3 attributes and 1 method. (10 marks)

Question 3

- (a) The *Waterfall Model* is one of the structured approach used in system development. Give the **FIVE (5)** phases used in this model (5 marks)
- (b) Explain the **FOUR (4)** characteristics a system analyst can learn by asking questions about the information systems (10 marks)
- (c) In many organizations, business executives will complete a request form in initiate a development of a new computer system. You are required to construct a systems request form that can be used for the above purpose. (10 marks)

Question 4

- (a) An airline company has many types of planes. These planes have different seating capacities. Almost all of them are scheduled to fly on a regular basis. However, some of these planes may be rented on request for a special flight. All flights will be assigned with a flight number.

You are to sketch a class diagram based on the above description. In this diagram, you are to identify the objects (only object names required), show the relationships among the objects, and indicate the nature of the relationship using the UML notation (cardinality).

(10 marks)

- (b) The following table describes the costs and benefits of developing and operating a new system for the next several years.

Year	0	1	2	3	4	5
Costs (RM)	80,000	9,000	8,000	9,000	10,000	14,000
Benefits (RM)	15,000	30,000	55,000	100,000	120,000	150,000

Using the information from above, you are required to construct a table to show approximately when the payback period will occur. In addition, you are also required to calculate the Return of Investment (ROI) for this new system for every year. What can you conclude from these Payback period and ROI?

(10 marks)

- (c) State the **FIVE (5)** rules the system analyst should follow when he conducts an in-house training.

(5 marks)

Question 5

- (a) This is a description of a CheckOut Subsystem for a HomeMovies Rental Company. You are to draw a suitable use case diagram to show how this subsystem works.

The customer selects the DVDs he wanted to rent from the shop. He places the products at checkout counter. The cashier picks up the DVDs and scans them. The customer proceeds to make payment for these DVDs. He pays either by cash or by debit card or by credit card.

(10 marks)

- (b) You are in charge of developing a complex computer system which is projected to take 6 months to complete. You are assigned to construct a cost estimate for this entire project. Your estimate should have **FIVE (5)** cost components. In your cost model, state and explain the cost components you have added in the cost estimate.

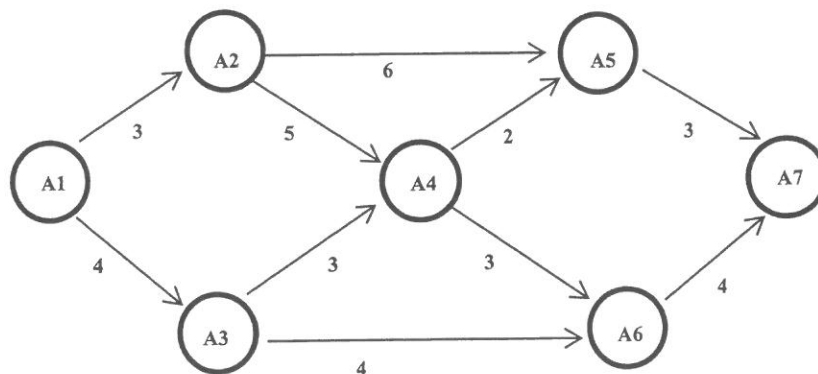
(10 marks)

- (c) What is a maintenance activity? State the **FOUR (4)** types of maintenance that may be carried out on an existing system.

(5 marks)

Question 6

- (a) Consider the following software development project with the following network of activities. The duration of the activities are measured in weeks.



You are to do as follows:

- i. Determine the critical path of this project. Give a reason for your selection.
- ii. Determine the Earliest and Latest Completion Times for each node.
- iii. Can node A3 be delayed without delaying the entire project? If yes, how many weeks can it be delayed by? Justify your answer.

(10 marks)

- (b) What are the **FOUR (4)** possible methods used in a system changeover? (10 marks)
- (c) What is a program documentation? (5 marks)

~**THE END**~
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