

 **INTI** International  
University & Colleges

**FINAL**  
Examination Paper

(COVER PAGE)

Session	:	<u>AUGUST 2018</u>
Programme	:	<u>Diploma In Information And Communication Technology (DICTN)</u> <u>Diploma In Information Technology (DITN)</u>
Course	:	<u>ICT1106: System Analysis And Design</u>
Date of Examination	:	<u>8 December 2018, (Saturday)</u>
Time	:	<u>8:00am – 10:00am</u> Reading Time : <u>Nil</u>
Duration	:	<u>2 Hours</u>
Special Instructions	:	
		<u>This paper consists of SIX (6) questions. Answer any FOUR (4) questions in the answer booklet provided.</u>
Materials permitted	:	<u>Non-Programmable Calculator</u>
Materials provided	:	<u>Nil</u>
Examiner(s)	:	<u>Tan Kok Cheng and Neesha Jothi</u>
Moderator	:	<u>Professor Dr. Abdullah Gani</u>

*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 2018 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 meaning of information systems (IS) and give the **THREE (3)** benefits of IS. (5 marks)
- (b) Describe the **FOUR (4)** key questions a system analyst needs to ask in order to learn about an information system. (10 marks)
- (c) Compare and contrast the **FOUR (4)** differences between the Transaction Processing System and the Management Information System. (10 marks)

**Question 2**

- (a) Explain why a feasibility study is important. Give any **THREE (3)** project costs a system analyst is expected to estimate. (5 marks)
- (b) Describe the **FIVE (5)** reasons an organization would commonly use to request for the development of a new system. (10 marks)
- (c) Explain the **THREE (3)** types of questions a system analyst would use in developing a questionnaire for a survey. Illustrate your answer with at least **ONE (1)** example for each types of questions. Give any **FOUR (4)** types of information a system analyst would want to gather from this survey. (10 marks)

**Question 3**

- (a) Explain at least **TWO (2)** differences between *Operational Environment* and *Test Environment* (5 marks)

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

*A customer has a saving account from a particular bank branch. He performs transactions using this saving account.*

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) What is the goal of a *Post Implementation Review (PIR)*. Explain when would be the best time to conduct this PIR. Give at least **THREE (3)** types of information this PIR seeks to discover

(10 marks)

#### Question 4

- (a) This is a business process description of an online bookshop. You are to draw a suitable use case diagram to show how this online bookshop works.

On a given business day, an online customer who enters into this online bookshop can order the books he desires. After he has successfully placed an order, he will pay his order with his credit card. The credit card company will either approve or decline this credit charge while it is processing the payment.

This online customer can also cancel his order if he chooses not to purchase the books. However, once the books are paid, the online bookshop's warehouse clerk will pack and ship these books on the next business day. The company's delivery man will deliver the books to the customer soon after.

(13 marks)

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

Year	0	1	2	3	4	5
Costs (RM)	80,000	4,000	5,000	6,000	9,000	11,000
Benefits (RM)	0	35,000	65,000	70,000	75,000	80,000
Present Value Factor @6%	1.000	0.943	0.890	0.840	0.792	0.747
Present Value Costs (RM)	?	?	?	?	?	?
Present Value Benefits (RM)	?	?	?	?	?	?
Present Value Cumulative Costs (RM)	?	?	?	?	?	?
Present Value Cumulative Benefits (RM)	?	?	?	?	?	?

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

- i) Calculate the cumulative values of its present value cost and of its present value benefits.
- ii) Determine when the payback will occur for this new system.
- iii) Determine the Return of Investment (ROI) for this new system at Year5.
- iv) Sketch a chart to indicate its payback period and its ROI.

(12 marks)

**Question 5**

- (a) Explain the object relationship called *dependency*. Give any **TWO (2)** examples of this type of object relationship.

(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) and indicate the nature of the relationship using the UML notation (cardinality).

*A customer places order(s) that contains item(s) he wishes to purchase. Most customers will normally make a normal order but some may make a special order.*

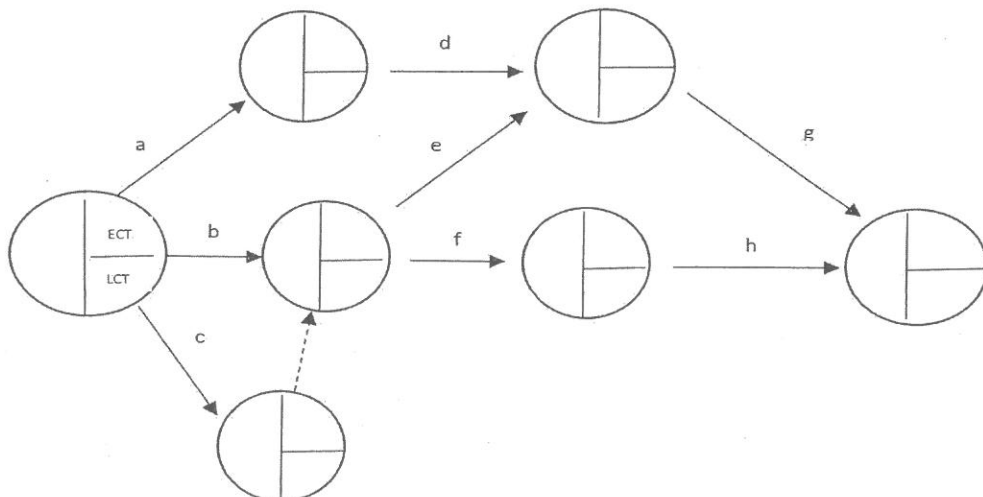
(10 marks)

- (c) Briefly discuss software change control in a given software development project. Restate the **FIVE (5)** steps in software change control.

(10 marks)

**Question 6**

- (a) Consider the following software development project with the following network of activities and its table of information.



Activity Names	Best case time, B (Weeks)	Probable case time, P (Weeks)	Worst case time, W (Weeks)	Duration (Weeks)
a	2	3	4	?
b	1	2	3	?
c	3	4	5	?
d	5	6	7	?
e	2	2	2	?
f	1	3	5	?
g	4	5	6	?

You are to do as follows:

- i. Calculate the value of the duration of these activities
- 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 discuss the differences between *Integration Testing* and *System Testing*. With the aid of a diagram, indicate where these tests are executed.

(10 marks)

**--THE END--**

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