



FINAL
Examination Paper

(COVER PAGE)

Session : AUGUST 2017

Programme : Diploma In Information And Communication Technology (DICTN)

Course : ICT1106: System Analysis And Design

Date of Examination : 13 December, 2017 (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) : Shahriman Mohd Sid and Tan Kok Cheng

Moderator : Professor Dr. Abdullah Gani

This paper consists of 6 printed pages, including the cover page

DIPLOMA IN INFORMATION AND COMMUNICATIONS TECHNOLOGY PROGRAMME
(DICTN)
ICT1106: SYSTEM ANALYSIS AND DESIGN
FINAL EXAMINATION: AUGUST 2017 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*. Briefly describe *Transaction Processing System (TPS)* and *Management Information System (MIS)*.
(7 marks)
- (b) Briefly describe the **FOUR (4)** layers of an organization structure and state **ONE (1)** example of the information systems used by each layer.
(8 marks)
- (c) Explain **TWO (2)** ways a company can obtain a new information system. Discuss **ONE (1)** advantage and **ONE (1)** disadvantage for each of the two ways suggested.
(10 marks)

Question 2

- (a) Explain the **FOUR (4)** internal factors that can influence the creation of software projects.
(10 marks)
- (b) Briefly explain the **THREE (3)** feasibility studies that must be conducted before an approval for the software development project is given.
(9 marks)
- (c) Explain the terms tangible benefit and intangible benefit and give **ONE (1)** example of each benefit.
(6 marks)

Question 3

- (a) Briefly explain any **FIVE (5)** fact finding techniques used by a system analyst to gather user requirements for a system development. (10 marks)
- (b) Briefly explain the **THREE (3)** types of questions a System Analyst can design to capture user requirements. Give an example to illustrate these question types. Explain the **THREE (3)** reasons why an interview with users can fail (15 marks)

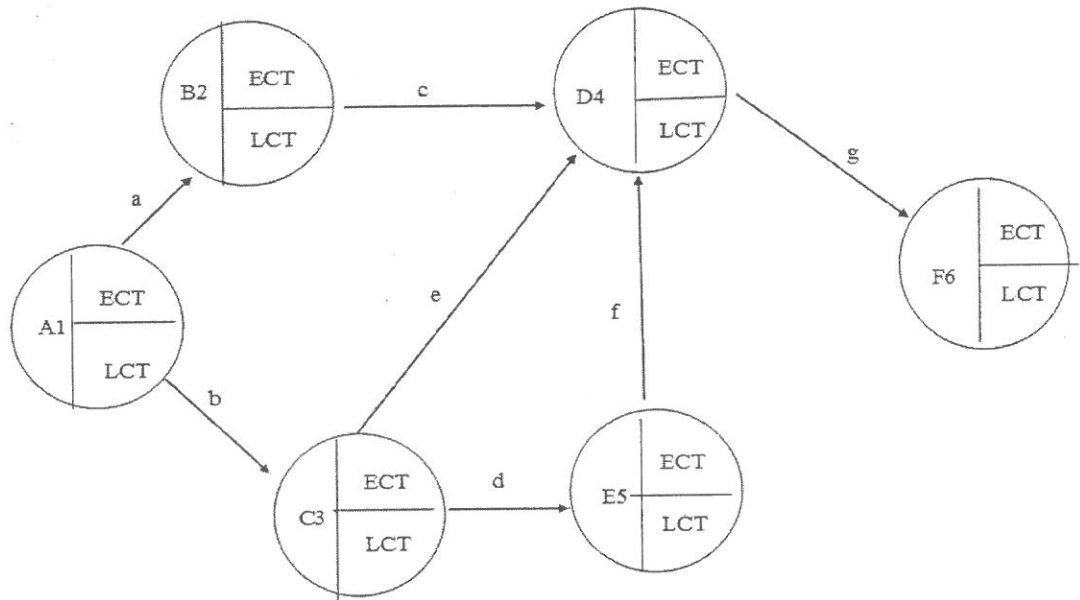
Question 4

- (a) The following table describes the costs and benefits of developing and operating a new system for the next five years. Determine when the payback period for Project A (hint: no graph is required) and calculate its present value return on investment (ROI) at Year 5. The company has a policy that every software project must pay back by itself on its third year of operation and has a ROI of 120% at the end of 5 years. Would the company management approve this Project A?

Project A	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
COST (RM)	85k	5k	7k	10k	13k	15k
BENEFIT (RM)	0	35k	90k	120k	150k	150k

(12 marks)

(b) Consider the following network of activities as shown in Diagram 1 below.



You are required to complete the details of this given PERT/CPM diagram with the information given in Table 1 below.

Table 1

Activity Name	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 required to do the following:

- i. Identify the formula you use to determine the duration of every activity indicated above and then calculate the value of the duration of these activities. (4 marks)

- ii. Determine all the possible paths and decide on which path is the critical path for this project. Explain your reason for the critical path selection. (3 marks)

- iii. Determine the Earliest Completion Time (ECT) and Latest Completion Time (LCT) for each node. (6 marks)

Question 5

- (a) Understand the following system requirement created for HomeMovies Sdn. Bhd., a chain of stores that offer movies rentals.

A customer can visit any of its stores to rent a DVD movie for a fixed period.

Based on the above requirement statements, identify at least **THREE (3)** objects. Sketch these objects with at least 2 attributes and 1 method

(9 marks)

- (b) Based on the case given below, draw a *use case* for the Lab Booking System. Your use case should have <<include>> and <<extend>>.

The Lab Booking System is a booking system that can be used by students and lecturers to book a lab. This is done by requesting a booking via the website.

Basically, the student will have to create a new account, and the administrator will either approve or reject the request based on the validity of the information provided. As for the lecturer, the administrator will create an account once a new lecturer is appointed.

Inside the booking page, the user can search for available labs on certain dates. Once the list is shown, the user can select the lab and date, and give a purpose for the booking. Once the booking is done, the user will have to wait for an admin to approve the booking request. The admin will either approve or reject the booking, in addition to that the admin will provide a reason for approving or rejecting.

The user can also view his/her profile and modify the profile information.

The admin can add or remove lab, Moreover, the admin can book a lab without the need to go through the booking request procedures. At the end of the month, the manager will generate the room booking report.

(16 marks)

Question 6

(a) Give any **TWO (2)** reasons why documentation is important in a given software development? Briefly discuss any **TWO (2)** types of documentation created in a given system development life cycle. (11 marks)

(b) What is a *chargeback method*? Explain the **FOUR (4)** methods used in chargeback. (14 marks)

~THE END~
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