



FINAL
Examination Paper

(COVER PAGE)

Session : August 2015

Programme : Diploma In Information And Communication Technology (DICTN)

Course : ICT1106: System Analysis And Design

Date of Examination : December 7, 2015

Time : 5.00pm – 7.00pm Reading Time : Nil

Duration : 2 Hours

Special Instructions :

Answer any **FOUR (4)** questions.

Materials permitted : Non-Programmable Calculator

Materials provided : Nil

Examiner(s) : Mr. Shahrیمان Mohd Said and Mr. Yap Soo Har

Moderator : Associate Professor Dr. Abdullah Gani

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

DIPLOMA IN INFORMATION AND COMMUNICATION TECHNOLOGY (DICTN)
ICT1106: SYSTEM ANALYSIS AND DESIGN
FINAL EXAMINATION: AUGUST 2015 SESSION

This paper consists of **SIX (6)** questions. Answer any **FOUR (4)** questions in the answer booklet provided. All questions carry equal marks. **(25 marks each)**

Question 1

- (a) A company requires a new Information System. Identify **TWO (2)** ways the company can obtain the information system. Discuss **ONE (1)** advantage and **ONE (1)** disadvantage for each of the two ways given. (8 marks)
- (b) Briefly describe Management Information System and explain **TWO (2)** of its main objectives. (6 marks)
- (c) System design is one of the phases in the System Development Life Cycle. Describe **THREE (3)** activities in system design phase. After the completion of system design, what is the next phase? (11 marks)

Question 2

- (a) Name **THREE (3)** factors that may affect systems projects. (3 marks)
- (b) In conducting a feasibility study, we take into account tangible and intangible benefits. Explain the term tangible benefits and intangible benefits and give **TWO (2)** examples of each benefit. (8 marks)
- (c) Describe **THREE (3)** issues to consider when doing a technical feasibility study. (6 marks)
- (d) Describe **FOUR (4)** preparations you must make if you are conducting an interview to gather information. (8 marks)

Question 3

- (a) Briefly describe **THREE (3)** main roles and responsibilities of a System Analyst. (6 marks)
- (b) From the table below, calculate the Cumulative Costs, Cumulative Benefits, Payback period and Return on Investment.

Year	Cost	Benefits
0	60000	3000
1	17000	28000
2	18500	31000
3	19200	34000
4	21000	36000
5	22000	39000
6	23300	42000

(10 marks)

- (c) Explain **THREE (3)** types of System Changeover methods and how each of them are implemented.

(9 marks)

Question 4

(a) Using the information given in the following table:

Activity	Predecessor	Duration (weeks)
A	-	4
B	A	1
C	A	6
D	B	2
E	D	2
F	C	3
G	D & F	5
H	E	4
J	H	2
K	G	3
L	K	4
M	J & L	5

- (i) Draw the PERT chart for the above schedule. (4 marks)
- (ii) Calculate and list the activities on the critical path. (3 marks)
- (iii) Calculate the shortest duration for this project to be completed. (2 marks)
- (iv) Show an example of a float in this project. (3 marks)
- (b) Explain the term non-functional requirements in software development. List **THREE (3)** examples of non-functional requirements. (7 marks)
- (c) Briefly explain **THREE (3)** types of testing done during the development of the system. (6 marks)

Question 5

- (a) Study the scenario given below for the major business activities of an Online Credit Card processing system (credit card payment gateway). Online Credit Card processing system is a gateway which allows the customers to make payment through the use of credit card whenever they purchase any items/services online on the merchant site. You are required to produce a **Use Case diagram** for a Merchant's system as described in the following scenario:

The merchant system will capture the credit card details and then submit the details as a request to the credit card payment gateway on behalf of a customer. The system in the bank which issued the credit card to the customer will verify the credit card details by either approving or rejecting the payment transaction based on the validity of the entered details. If transaction is approved, funds will be transferred to the merchant's bank account. Whether the transaction is approved or rejected, a certain message will be displayed on the merchant's side.

(13 marks)

- (b) A customer has a name and a company; he can make and cancel order. An order has a date, order code and amount. An order can be confirmed or modified. There are two kinds of order, a normal order cost a flat rate of 100 and a special order cost the weight of the package * 160. From the information above, draw a class diagram.

(9 marks)

- (c) State any **THREE (3)** types of documentation.

(3 marks)

Question 6

- (a) Draw a UML Class Diagram for the partial specification of the system described below:

A library loans three different kinds of items to customers: books, video tapes and compact disks. Each item has a title, and publisher. In addition, books have an author and CDs have an artist. The library may have multiple copies of the same book, video tape or compact disk. There are two different kinds of customer: students and staff. For both kinds of customer, the library has their name, gender and address. Students may borrow at most 20 items. Staff does not has any limitations on the number of borrowed items.

(12 marks)

- (b) List **THREE (3)** types of maintenance, and identify an activity conducted for each type of maintenance.

(6 marks)

- (c) Differentiate program testing with program verification.

(7 marks)

