



SLIATE

SRI LANKA INSTITUTE OF ADVANCED TECHNOLOGICAL EDUCATION

(Established in the Ministry of Higher Education, vide in Act No. 29 of 1995)

Higher National Diploma in Information Technology

First Year, Second Semester Examination – 2015

HNDIT1212/ IT2005 - System Analysis and Design

Instructions for Candidates:

Answer any **Four(04) questions**

All questions carry equal marks

No. of questions : 05

No. of pages : 03

Time :Two(02) hours

Question: 01

- (i) Define an information system. (03 marks)
- (ii) List four (04) stakeholders of an information system. (04 marks)
- (iii) Name two (02) types of information systems used by top level management of an organization and briefly describe their usage. (06 marks)
- (iv) Briefly explain four (04) phases of system development life cycle. (08 marks)
- (v) Requirements analysis is a very important phase in software development lifecycle. Briefly describe the activities carried out in this phase. (04 marks)

(Total 25 marks)

Question: 02

- (i) Briefly explain the term “Methodology”. (03 marks)
- (ii) State three (03) problems with waterfall development approach. (06 marks)
- (iii) Briefly explain two (02) types of Prototyping techniques. (06 marks)
- (iv) Why is the Spiral model appropriate only for large-scale and mission critical applications? (04 marks)
- (v) Propose a suitable system development life cycle model for the following system and justify your answer.

“Shopping Cart is an online store that enables website owners to sell their products online. It is a web shopping cart that web enables the daily sales functions. The System helps the Customer to purchase the products with and without Credit Card Information. It includes sophisticated products and customer

management modules. This website will be useful to anyone who wants to purchase items through Internet. (06 marks)

(Total 25 marks)

Question: 03

- (i) Write down five (05) benefits of Feasibility Study. (05 marks)
- (ii) What is meant by “Identifying Requirements”? (03 marks)
- (iii) Requirements can be divided into two categories. Name them and give example for each category. (04 marks)
- (iv) Briefly explain the reasons to select the following fact finding techniques. (02x4=08 marks)
 - a) Observation of the work environment
 - b) Questionnaires
 - c) Interviewing
 - d) Brainstorming
- (v) Write the five (05) essential elements of a report of system proposal. (05 marks)

(Total 25 marks)

Question: 04

- (i) Compare Logical DFD with Physical DFD. (04 marks)
- (ii) Read the following scenario.

“Protec Computer is a computer repair company operating out of a small workshop. The owner, Amal is the only person working in the company but he hopes to expand and employ more workers in the near future.

At present, Amal keeps a lot of information about repair jobs in a filing cabinet but this is rather disorganised. He realises that a computer system would be a better method, especially as any new member of staff would also be able to access this information.

When a customer brings in a faulty computer, Amal logs the fault and the customer’s details giving him/her an estimated date for the repair to be completed. Every day he checks the list of repairs and selects the jobs to be done on that day. If he finds he doesn’t have the required parts in stock for a repair he places a purchase order with his supplier and reschedules the job to a later date. When a repair is completed and the

customer comes to collect the computer, Amal gives him/her an invoice and the customer pays immediately.

Once a week Amal checks his stock of parts, and orders required parts from his supplier.”

- a) List the processes and the external entities that you would include on a LOGICAL top level data flow diagram (DFD) of the Protec Computers. (04 marks)
 - b) Draw the context diagram for the above system. (07 Marks)
 - c) Draw the Top level DFD for the above system. (10 Marks)
- (Total 25 marks)**

Question: 05

- (i)
 - a) Briefly explain two limitations of Unit Testing. (04 marks)
 - b) Explain why Testing Team uses Black Box Test for System Testing. (02 marks)
 - c) Name two general approaches to test automation. (02 marks)
 - d) List the levels of testing which uses the White Box tests. (02 marks)
 - (ii)
 - a) List four (04) advantages of readymade software solutions. (04 marks)
 - b) What is a Bespoke package? (02 marks)
 - c) Why good IT knowledge is needed to use Amended standard package? (02 marks)
 - (iii) What is Parallel Running in File Conversion? (03 marks)
 - (iv) Briefly explain Corrective Maintenance and Adaptive Maintenance. (04 marks)
- (Total 25 marks)**