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 – 2019
HNDIT1212-System Analysis and Design

Instructions for Candidates:
Answer four (04) questions only
Non programmable calculators are allowed

No. of questions :05
No. of pages : 03
Time : Two (02) hours

Question 01 **[Total 25 Marks]**

i. Write down the targeted management levels for the following information systems. transaction [03 Marks]
  a. TPS = Processing System
  b. MIS — management information System,
  c. DSS — Dicision support System

ii. List three (03) possible reasons for developing a new system in an organization. [06 Marks]

iii. Briefly explain "TOR" of problem definition phase. [04 Marks]

iv. List three (03) things to be done at system design phase. [06 Marks]

v. Explain the duty of the following stakeholders of a proposed information system.
  a. System designer
  b. System builder [06 Marks]

Question 02 **[Total 25 Marks]**

i. Explain the term **software tools** in software development and state two (02) reasons of using various **tools** within system development. [03 Marks]

ii. Briefly explain the spiral model for system development. [06 Marks]

iii. Will you select spiral model for developing a traditional payroll system? Give two reasons (02) for your answer. [04 Marks]

iv. Suggest suitable application environments for the following lifecycle models giving reasons. [06 Marks]
  a. Throughway prototyping model
  b. RAD model

v. List three (03) interpersonal skills and three (03) technical skills of a system analyst. [06 Marks]
  teaching

Question 03   **[Total 25 Marks]**

Suppose you are going to develop a Student Management System for SLIATE.

i.   Briefly explain three (03) fact finding techniques proposed for SLIATE student
      management system.   [03 Marks]

ii.   List three (03) functional requirements and three (03) non-functional
      requirements of Student Management System for SLIATE.   [06 Marks]

iii. Briefly explain the following feasibility study areas.   [04 Marks]
      a. Operational feasibility
      b. Legal feasibility

iv.   Cost-benefit analysis always includes both tangible and intangible items.
      a. What is meant by "Tangible items"?
      b. Give two (02) examples for tangible items in an IT project.
                                                                               [06 Marks]

v.   XYZ Company plans to invest on project A. The initial investment is
      Rs.100,000.00. The cash inflows from Years 1-5 are provided below. Find the
      Payback Period of the project A.   [06 Marks]

Year	Cash flow
Year 1	15000
Year 2	25000
Year 3	40000
Year 4	30000
Year 5	30000

Question 04   **[Total 25 Marks]**

i.   Explain the difference between logical model and physical model. [04 Marks]

ii.   Explain the following terms regarding process modelling.   [06 Marks]
      a. Process decomposition
      b. Data flow
      c. Context diagram

iii. Read the following scenario.
      In a food ordering system a customer can place an order. The order is given to the
      Order food process and then forwarded to the kitchen. All the orders are stored in
      a database. Then the inventory will be updated. A bill will be issued to the
      customer. Report generation is a part of the system. The manager receives reports
      about the inventory and orders. The manager is responsible for maintaining
      inventory. Here the inventory order is forwarded to the supplier and then the
      database is updated.

a. Identify the external entities of Food ordering system described above. [02 Marks]

b. Draw the Context Diagram for the Food ordering system [04 Marks]

iv.

a. Identify three (03) sub processes of this system. [03 Marks]
b. Identify the data stores of this system. [02 Marks]
c. Draw the Top level DFD of Food ordering system. [04 Marks]

[Total 25 Marks]

Question 05

i. What is meant by system maintenance? [03 Marks]
ii. Briefly explain **unit test** and give two (02) benefits. [06 Marks]
iii. Briefly explain the following testing types. [04 Marks]

    a. Black box testing

    b. White box testing

iv. What is meant by "Bespoke Package"? List two (02) advantages and two (02) disadvantages of bespoke package. [06 Marks]

v. There are four(04) types of file conversion methods in implementation stage in software development. Explain three(03) of them. [06 Marks]