SLIIT ACADEMY

Foundation Certificate
in
Information Technology

Midterm Examination
Semester 2 (2022)
January Intake

System Analysis & Design (FIT204)

Duration: 1 Hour

Instructions to Candidates:

- This is a closed book examination.
- This paper contains 3 questions on 9 pages without the cover page.
- Answer all questions on the paper.
- Read all questions before answering.
- The total marks obtainable for this examination is 50.

Question 01 (20 marks)

Underline the most suitable answer for the given questions.

i. Which of the following is not a characteristic of a system?

a. operates for some purpose
b. has homogeneous components
c. has interacting components
d. operates within a boundary
e. None of the above

ii. Consider the following skills.

A. Working knowledge of Information Technologies
B. Specialized knowledge of database languages and technology
C. General problem-solving skills
D. Interpersonal communication skills

Which of the above is/are skills needed by systems analysts?

a. Only (A), (B) and (C)
b. Only (A), (B) and (D)
c. Only (C)
d. Only (A), (C) and (D)

iii. Requirement specification is carried out

a. Before requirements are determined
b. After requirements are determined
c. Simultaneously with requirements determination
d. Independent of requirements determination

iv. Consider the following software development methodologies given.

A. Waterfall / Prototyping / Iterative
B. Waterfall /Parallel / Prototyping
C. Parallel /Waterfall /V Model
D. Dynamic System Development Method / Iterative / Prototyping

Select the combination of the methodologies which includes the rapid application software development methodologies.

a. A
b. B
c. C
d. D

v. Which of the following is/are characteristics of a project?

A. Temporary
B. On-going
C. Repeated
D. Progressive Elaboration

a. A & C Only.
b. A, B & C Only.
c. A & D Only
d. A, B & D Only

vi. What is a prototype?

a. Mini model of existing system
b. Mini model of proposed system
c. Working model of existing system.
d. All the above

vii. The main objective of feasibility study is:

a. To assess whether it is possible to meet the requirements specifications.
b. To assess if it is possible to meet the requirements specified subject to constraints of budget, human resource and hardware.
c. To assist the management in implementing the desired system.
d. To remove bottlenecks in implementing the desired system.

viii. Which of the following is a true statement regarding the SDLC phases?

a. The life cycle is a sequentially ordered set of phases.
b. It is not possible to complete some activities in one phase in parallel with those of another phase.
c. The SDLC is not iterative.
d. The life cycle can be thought of as a circular process in which the end of the useful life of one system leads to the beginning of another project to develop a new version of or replace an existing system**.**

ix. The primary goal of the systems analyst is to …….

a. Acquire a working tool
b. Create a wonderful system
c. Make a significant business impact
d. Establish the three phases of the SDLC

x. The systems development life cycle (SDLC) is the process of …….

a. Building an information system
b. Delivering an information system to a client
c. Designing an information system
d. Understanding how an information system can support business needs
e. All the above

xi. The prototyping model of software development is

a. A reasonable approach when requirements are well defined.
b. A useful approach when a customer cannot define requirements clearly.
c. The best approach to use for projects with large development teams.
d. A risky model that rarely produces a meaningful product.

xii. _____is the process of examining the technical, economic, and organizational pros and cons of developing a new system.

a. System Development Life Cycle
b. Feasibility Analysis
c. Prototyping model
d. None of the above

xiii. The primary advantage of the Waterfall Development methodology is that _____.

a. A version of the system is quickly delivered into the users' hands.
b. Requirements evolve through users' feedback about the system.
c. Features and functionality of the system are explored through simple models.
d. Requirements are completely specified and held relatively constant prior to programming.
e. There is a long-time lapse prior to completion

xiv. In which phase of the software design and development project would you build a blueprint of the proposed system?

a. Analysis phase
b. Design phase
c. Requirement phase
d. Development phase

xv. Michaela is a systems analyst who is determining business requirements. What would most likely be the SDLC phase for her?

a. Planning
b. Analysis
c. Design
d. Implementation
e. Coding

xvi. Which of the following statement(s) are true?

a. Waterfall development Methodology originates in the manufacturing and construction companies.
b. The Evolutionary and Throwaway Prototyping are the approaches to prototyping.
c. One advantage of the waterfall development methodology is working system available in the early stage.
d. Both (i) & (ii)
e. All the above.

xvii. …… is a representation or model of a real system.

a. Static System
b. Physical System
c. Abstract System
d. Dynamic System

xviii. Which of the following is not a property of a system?

a. Interactive
b. Interrelated
c. Has a purpose
d. Independent

xix. Selection of particular life cycle model is based on,

a. Requirements
b. Technical knowledge of development team
c. Users
d. Project types and associated risks
e. All the above

xx. This phase of the SDLC is known as the "ongoing phase" where the system is periodically evaluated and updated as needed.

a. Preliminary Investigation
b. System Design
c. System Implementation
d. System Maintenance

Question 02 (15 marks)

a. Choose the most suitable phrase/term from those given in the bracket and fill in the blanks to make the following sentences meaningful. One phase/term should be use only once. (10 marks)

i. A _____ is a group of things collected or assembled together while a _____ is a group of things that connect & form some kind of related.

ii. Elements that enter the system are known as _____. _____ are the results generated by the system after processing.

iii. A _____ is a person who studies the problems and needs of an organization looking for improvement opportunities.

iv. A _____ is a person, group or organization that has interest or concern in the Information System.

v. _____ are technical specialists who build, test, and deliver the system.

vi. A _____is a formalized approach to implementing the SDLC.

vii. The document prepared at the analysis stage is called_____.

viii. A _____ is an initial version of a system used to demonstrate concepts and try out design options

Phrases

Procedures, inputs, stakeholder, system builders, process, methodology, outputs, system, system analyst, information system, collection, business analyst, SRS, prototype, feasibility report

b. State whether following statements are True(T) / False(F). (5 marks)

i.	Parallel Development Methodology is a RAD methodology.	
ii.	If it is very much urgent, we can bypass the stages in Waterfall methodology and come back to it later.	
iii.	Prototyping can be considered as a risk reduction activity.	
iv.	The throw-away prototype is considered as a part of the final system.	
v.	Waterfall methodology is much concerned on detailed specification & documentation.	

Question 03 (15 marks)

a). Write **your own** definition for a system. Provide suitable examples. (3 marks)

b). **"Having a sound knowledge on General business is a skill required by a System Analyst**."
Do you agree with this statement? Explain your answer. (3 marks)

c). There're 2 steps in Planning stage of SDL. Project Initiation & Project Management.
Explain the importance of **Project Management in Planning**. (3 marks)

d). **"Waterfall Methodology can be used when the requirements are very well known, clear and fixed."**

Explain the above statement. (3 marks)

e). The objective of throw-away prototyping is to ensure that the system requirements are validated and clearly understood. Explain what **throw-away prototyping** is. (3 marks)

----------End of the Question Paper----------