**INFORMATION SYSTEM ANALYSIS**

**ANSWERS ANY TWO (2) QUESTIONS FROM THIS SECTION.**

**Questions One (1)**

1. **Explain how the waterfall model of the SDLC controls the changes during a project.**

**Answers:**

The pure waterfall attempts to specify completely the requirements during the analysis phase, and then tries to "freeze" those requirements so that things do not change. Another solution is to have a modified waterfall so that additional analysis (i.e. specifying new requirements) can be done as the project progresses. However, neither situation is well suited to handle big changes during the life of a project.

1. **Why are information systems so essential business today?**

**Answers:**

* **Operational Excellence – businesses can constantly improve their efficiency of their operations in order to achieve higher profitability. They can do this by constantly having the correct amount of stock in store so consumers can always get want they want.**
* **New product services and business models – I.S systems play a major role for businesses in creating new products and services. New business models can be created and these can describe how a company produce, create and sell their products.**
* **Customer and Supplier intimacy – the better services a company provides its consumers with more likely they are too come back to them and as result the more they will buy off the supplier therefore creating a good relationship with both parties.**
* **Improved decision making – I.S systems make it possibly for managers to use real time data when making a decision to therefore make better decisions and not have to waste time looking for information.**
* **Competitive advantage – if companies achieve any of these 6 reasons to use I.S they will generally create a competitive advantage over their rivals.**
* **Day to Day survival – business invest in these systems to make their jobs as easy as possible. an example is Citibank introduced the first ATM machine to make it easier for customers to access their money and to cut down queues in their banks.**

1. **What are the five phases of the traditional SDLC?**

**Answers:**

* Planning and Analysis
* Designing the product architecture
* Developing and coding
* Testing & Integration
* Maintenance & Operations

1. **What is the objective of each phase of the SDLC? Describe briefly.**

**Answers:**

1. **Planning and analysis:**

**This phase is the most fundamental in the**[**SDLC process**](https://www.charterglobal.com/what-are-the-5-phases-in-the-software-development-life-cycle-sdlc/)**. Business requirements are compiled and analysed by a business analyst, domain expert, and project manager. The business analyst interacts with stakeholders to develop the business requirements document. They also write use cases and share this information with the project team. The aim of the requirements analysis is for quality assurance, technical feasibility, and to identify potential risks to address in order for the software to succeed.**

1. **Designing the product architecture:**

**During the design phase, lead developers and technical architects create the initial high-level design plan for the software and system. This includes the delivery of requirements used to create the Design Document Specification (DDS). This document details database tables to be added, new transactions to be defined, security processes, as well as hardware and system requirements.**

1. **Developing and coding:**

**In this phase, the database admin creates and imports the necessary data into the database. Programming languages are defined by requirements. Developers create the interface as per the coding guidelines and conduct unit testing. This is an important phase for developers. They need to be open-minded and flexible if any changes are introduced by the business analyst.**

1. **Testing: Testers test the software against the requirements to make sure that the software is solving the needs addressed and outlined during the planning phase. All tests are conducted as functional testing, including unit testing, integration testing, system testing, acceptance testing, and non-functional testing.**
2. **Maintenance:**

**In a post-production, live software environment, the system is in maintenance mode. No matter the number of users, the sophistication of the software and rigorous QA testing, issues will occur. That’s the nature of software with managing data, integration, and security, and real world usage. Access to knowledgeable, reliable support resources is essential, as is routine maintenance and staying up to date on upgrades.**

**Questions Three (3)**

1. **List the seven reason reasons project fails.**

**Answers:**

* Lack of Communication
* Lack of project methodology
* Lock of Good resources
* Improper planning
* Improper scheduling
* Ineffective Follow up methods.
* Unrealistic project budget.

1. **Describe various types of software tests and explain how and why each is used.**

**Answers:**

There are two types of software testing and they are;

* **Manual Testing:**

Testing any software or an application according to the client's needs without using any automation tool is known as **manual testing**.

In other words, we can say that it is a procedure of verification and validation. Manual testing is used to verify the behaviour of an application or software in contradiction of requirements specification.

Manual Testing is classified into **three different types of testing**, which are as follows: White Box Testing, Black Box Testing and Grey Box Testing

* **Automation Testing:**

The most significant part of Software testing is Automation testing.

It uses specific tools to automate manual design test cases without any human interference.

Automation testing is the best way to enhance the efficiency, productivity, and coverage of Software testing.

It is used to re-run the test scenarios, which were executed manually, quickly, and repeatedly.

1. **List four types of tools the analyst needs to use to develop systems.**

**Answers:**

* Integrated Development Environment(IDE)
* Computer Aid System Engineering (Case Tools)
* Program Code Generators
* Documentation Generating Tools

1. **List the components of a traditional system and the symbols representing them on a data flow diagram.**

**Answers:**

* Process
* Data Flow
* External Agent
* Data Store
* Real-Time Link