SCOTT CHRISTIAN UNIVERSITY
EXAMINATIONS
07 APR 2025
SIGN:.....
P.O. BOX 49 - 90100, MACHAKOS.

Scott Christian
UNIVERSITY
A Dynamic Centre of Academic Excellence

SCHOOL OF EDUCATION AND BUSINESS STUDIES

INFORMATION COMMUNICATION TECHNOLOGY

UNIT CODE/NAME: BCT217/DCT 030: SYSTEM ANALYSIS AND DESIGN

JAN/APRIL 2025 - END OF SEMESTER EXAMS – TOTAL MARK – 60MKS

SECTION A - 30 MARKS

Answer all questions on these section

a) Write short notes on the following system analysis and Design concepts
   i. System Design **[1mk]**
   ii. Project planning **[1mk]**
   iii. prototyping **[1mk]**
   iv. feasibility study **[1mk]**

b) In the design phase of software development, the software architecture and system design are developed based on the requirements gathered in the previous phase, outline any **Four** activities involved in design phase. **[4marks]**

c) Software maintenance is the process of systematically managing, modifying, and updating existing software applications or systems to ensure they continue to meet their intended objectives and perform effectively over time. Name any **FOUR** types of system maintenance. **[4 marks]**

d) A system analyst is a professional who play a critical role during system analysis and design, outline any four responsibilities of a system analyst. **[4marks]**

e) High-quality system design ensures that the software system meets its intended objectives, functions efficiently, is maintainable, and provides a positive user experience. Name **four** factors that contribute to quality of a system. **[4marks]**

f) List any 4 importance of feasibility study **[4marks]**

g) A system is a set of components that are related and work together as one, Name **four** properties of a system **[4marks]**

h) Software Requirements Specification (SRS). It is a critical document in the software development process that outlines the detailed functional and non-functional requirements of a software system. Outline four importance of Software Requirements Specification. **[2marks]**

SECTION B: CHOOSE ANY TWO QUESTIONS

QUESTION TWO

a) System analysis is a systematic, interdisciplinary process of examining a complex system to understand its components, functions, and interactions in order to improve its efficiency, performance, and overall effectiveness. Explain the following Attributes of structured analysis.

   a. Graphic **[2 marks]**
   b. Logical **[2 marks]**
   c. Process division **[2 marks]**
   d. High level to lower-level approach **[2 marks]**
   e. Data dictionary **[2 marks]**

b) A system is a set of components that are related and work together as one, outline **FIVE** properties of a system. **[5marks]**

QUESTION THREE

a) During Structured Analysis, various tools and techniques are used for system Design, explain the following;

   i. Decision Tables **[1mark]**
   ii. Structured English **[1mark]**
   iii. Pseudocode **[1mark]**
   iv. Decision tree **[1mark]**

b) Software Development Life Cycle **(SDLC)** consists of a series of phases that guide the development of software applications or systems. These phases are typically followed in a sequential order, but they can also be adapted to fit different development methodologies, Describe using diagram the phases involved in **SDLC.** **[10 marks]**

QUESTION FOUR

a) System model is a *process-oriented representation that emphasizes the influences, or flow, of information between* modules, name **FIVE** types of system models. **[5 marks]**

b) Components of a system can vary depending on the context, using a diagram describe any 5 components of a system. **[10 marks]**

QUESTION FIVE

a) Software Development Life Cycle **(SDLC)** models are frameworks used in the software development process to plan, design, build, test, and deploy software systems, using diagrams describe any five models. **[10 marks]**

b) System design is a critical phase in the development of a software or information system. It involves creating a detailed plan and blueprint for the system based on the requirements and specifications. Describe any five components of system design. **(5 marks)**