



CRAWFORD UNIVERSITY, FAITH CITY IGBESA
COLLEGE OF NATURAL AND APPLIED SCIENCES
DEPARTMENT OF COMPUTER AND MATHEMATICAL SCIENCES

HARMATTAN SEMESTER
COURSE CODE: ICT 323
UNITS: 3

SESSION: 2021/2022
COURSE TITLE: SWITCHING SYSTEM
TIME: 2.5 HOURS

INSTRUCTION: ANSWER ANY FOUR QUESTIONS

QUESTION ONE (15 MARKS)

- (A) Define switching, justify the need for switching, and briefly discuss the classification of switching system. (5mrks)
- (B) Discuss the major components of a typical telecommunication switching system. (5mrks)
- (C) Identify and discuss the essential practical requirements for a switching system to provide efficient service to subscribers. (5mrks)

QUESTION TWO (15 MARKS)

- (A) Discuss briefly, the criteria for design of telecommunication switching systems (4mrks)
- (B) Write short notes on the following in relation to switching systems:
- (i) GOS (3mrks)
 - (ii) Traffic Pattern (4mrks)
- (C) Discuss the different phases involved in circuit-switched networking of signals among multiple nodes (4mrks)

QUESTION THREE (15 MARKS)

- (A) Explain with neat diagrams, centralized switching and distributed switching (5mrks)
- (B) Traffic Engineering provides the basis for analysis and design of Telecom Networks. Discuss the statistical parameters that can be used to model such networks. (5mrks)
- (C) Describe with an appropriate annotated diagram, the ATM reference model (5mrks)

QUESTION FOUR (15 MARKS)

- (A) What is a State Transition Diagram (S.T.D)? Identify and describe its components. (5mrks)
- (B) Draw the state transition diagram (S.T.D.) for originating calls only (6mrks)
- (C) Illustrate the structure of frames use in packet switching, explaining the functions of the constituent parts (4mrks)

QUESTION FIVE (15 MARKS)

- (A) Differentiate between the three (3) traditional methods of switching (3mrks). What is the most important feature of each of the methods? (6mrks)
- (B) Describe the basic signal exchange for call processing and briefly discuss the possible difficulties that could be encountered. (4mrks)
- (C) Discuss the two types of Frame Relay circuits. Describe the frame format for Frame Relay (5mrks)

QUESTION SIX (15 MARKS)

- (A) Differentiate between centralized and distributed SPC switching systems (4mrks)
- (B) A centralized dual-processor SPC can operate in three (3) modes. Discuss (3mrks)
- (C) (i) Briefly discuss ATM Interfaces (3mrks)
- (ii) The X.25 standard defines three basic levels in line with the OSI layer. Discuss (5mrks)

*Noted
Crawford
09/02/2023*