



CRAWFORD UNIVERSITY, FAITH CITY IGBESA
COLLEGE OF NATURAL AND APPLIED SCIENCES
DEPARTMENT OF COMPUTER AND MATHEMATICAL SCIENCES
RAIN SEMESTER SESSION: 2020/2021

COURSE CODE: ICT 416

TITLE: TELECOMMUNICATION SYSTEM

UNITS: 3

DURATION: 3 HOURS

INSTRUCTION: ANSWER QUESTION 1 AND ANY OTHER THREE

QUESTION ONE (24 marks)

- (A) (i) Define Telecommunication (2mrks)
- (ii) Discuss the major components of a typical telecommunication system (4mrks)
- (iii) Discuss GSM and identify the features that accounts for its popularity and wide acceptance (4mrks)
- (iv) Briefly discuss the steps involved in digitizing analog signals (4mrks)
- (B) Briefly discuss the following telecommunications concepts:
 - (i) VPN (4mrks)
 - (ii) Multiple Access Techniques (6mrks)

QUESTION TWO (12marks)

- (A) (i) The OSI reference model has seven layers, each having its own well-defined function. Discuss the model briefly (5mrks)
- (ii) Differentiate between PDH and SDH/SONET (3mrks)
- (B) Discuss the features of modern public telecommunication networks (4mrks)

QUESTION THREE (12marks)

- (A) Differentiate between:
 - (i) Packet-switched and cell-switched networks (2mrks)
 - (ii) Switching modes and transmission modes (2mrks)
- (B) Highlight the advantages and disadvantages each of the following communication media:
 - (i) Twisted pair (2mrks)
 - (ii) Coaxial cable (2mrks)
 - (iii) Fibre-optics (2mrks)
 - (iv) Satellite (2mrks)

QUESTION FOUR (12marks)

- (A) (i) Support for Quality of Service (QoS) remains a core issue in telecommunication. Briefly discuss four (4) QoS parameters (4mrks)
- (iii) Briefly discuss the components needed for QoS (4mrks)
- (B) Discuss ATM QoS categories (4mrks)

QUESTION FIVE (12marks)

- (A) (i) Diagrammatically describe the GSM network Architecture (4mrks)
- (ii) Discuss briefly the subsystems of the GSM Architecture (4mrks)
- (B) (i) Discuss the evolution of Mobile communication from 1G to 4G (4mrks)

QUESTION SIX (12marks)

(A) Differentiate between the following:

- (i) X.25 and Frame Relay (3mrks)
- (ii) Switching and Routing (3mrks)

(B) Briefly discuss the following telecommunication elements: (6mrks)

- (i) Circuit
- (ii) Channel
- (iii) Trunk

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