NATIONAL OPEN UNIVERSITY OF NIGERIA

PLOT 91 CADASTRAL ZONE, NNAMDI AZIKWE EXPRESSWAY, JABI, ABUJA

FACULTY OF SCIENCES

DEPARTMENT OF COMPUTER SCIENCE

2020_2 EXAMINATIONS

COURSE CODE: CIT305

COURSE CREDIT: 3

COURSE TITLE: NETWORKING AND COMMUNICATION TECHNOLOGY

TIME ALLOWED: $2^{1}/_{2}$ HOURS

INSTRUCTION: ANSWER QUESTION ONE (1) AND ANY OTHER (4) QUESTIONS

1a) (i) Write on two commonly used wired technologies for transmitting data from one point to another ***(2 marks)***

1a (ii) Outline any two categories of basic data-link configurations as used in the second layer of Open System Interconnection (OSI) reference model ***(3 marks)***

1a (iii) What is the objective of validation process and test metrics in wireless L***AN (2 marks)***

1a (iv) Itemize the primary objectives of internet protocol as used in layer three of internet suites ***(2 marks)***

1b Briefly describe the terms "enterprise private network" in configuring access rules in computer networking ***(3 marks)***

1c (i) List any two common types of threats affecting enterprise network when connected to the internet. ***(2 marks)***

1c (ii) State any three Standard design requirements used for effective network planning and design ***(3 marks)***

1c (iii) Briefly describe the Significance of Digital Modulation in data communication ***(3 marks)***

1c (iv) State the two general types of access offers by ISDN ***(2 marks)***

2a Write short notes on the following Wireless *LAN* technologies as used in connecting devices for data transmission (i) Communications satellites (ii) Cellular and PCS systems (iii) Infrared communication ***(6 marks)***

2b The data link layer in the OSI model combine packets and bytes into frames and provides access to media using *MAC* address. Briefly describe three categories of basic data-link configurations. ***(6 marks)***

3a What is the objective of the validation process and test metrics in *WLAN* Performance Metrics? ***(6 marks)***

3b State at least three uses of TCP in wireless LAN ***(6 marks)***

4a (i) What is the major function of predefined enterprise networks? ***(3 marks)***

(ii) State three predefined enterprise networks that are created upon installation ***(3 marks)***

4b. List any six *typical project business requirements* used in Effective Network Planning and Design ***(6 marks)***

5a. Write short notes on the following common analog modulation techniques:

(i) Amplitude Modulation (AM) ***(2 marks)***

(ii) Double-Sideband Modulation (DSB) ***(2 marks)***

(iii) Single-sideband modulation (SSB, or SSB-AM), ***(2 marks)***

5b. Explain briefly the following Digital Modulation Techniques:

(i) Amplitude-Shift Keying (ASK) (ii) Frequency-Shift Keying (FSK) (iii) Phase-Shift Keying (PSK) ***(6 marks)***

6a. (i) What is Integrated Services Digital Network (ISDN)? ***(4 marks)***

(ii) State one advantage of *ISDN* over other digital communications technologies ***(2 marks)***

6b. (i) Itemize the three basic types of channels defined by *ISDN* Standards ***(4 marks)***

6b (ii) Define a *B channel as used in* Integrated Services Digital Network. ***(2 marks)***