



**NATIONAL OPEN UNIVERSITY OF NIGERIA**  
**PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI, ABUJA**  
**FACULTY OF SCIENCES**  
**DEPARTMENT OF COMPUTER SCIENCE**  
**2021\_1 EXAMINATIONS**

**COURSE CODE: CIT305**

**COURSE TITLE: NETWORKING AND COMMUNICATION TECHNOLOGY**

**COURSE CREDIT: 3 UNITS**

**TIME ALLOWED: 2½ HOURS**

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

**QUESTIONS**

- 1a (i) State four (4) purposes in which computer networks can be employed (**4 marks**)  
(ii) Briefly describe the main function of Data link in OSI model (**2 marks**)  
(iii) List types of Physical Media as applicable in the *OSI* reference model (**3 marks**)
- 1b (i) Internet Protocol is the primary layer 3 protocol in the internet suite. What is the significance of IP in the internet suite? (**3 marks**)
- 1b (ii) What do you understand by the terms network security? (**3 marks**)
- 1b (iii) Define enterprise private network (**2 marks**)
- 1c (i) Outline the three Common Digital Modulation Techniques (**3 marks**)
- 1c (ii) Describe Integrated services (**2 marks**)
- 2a Briefly analyse the following categories of ISP: (**6 marks**)  
(i) Tier 1 *ISPs*  
(ii) Tier 2 *ISPs*  
(iii) Tier 3 *ISPs*
- 2b Write short notes on the following purposes of computer networks: (**6 marks**)  
(i) Facilitating communications  
(ii) Sharing hardware  
(iii) Sharing files, data, and information
- 3a Distinguish between Virtual Private Network and Backbone network (**6 marks**)
- 3b (i) What is the major challenge in mobile communications? (**3 marks**)  
(ii) State any three categories of extranet (**3 marks**)
- 4a Outline the functions of the following OSI layers: (**6 marks**)  
(i) Application layer (ii) Presentation layer (iii) Session layer
- 4b (i) What is the key advantage of *GPRS* over *GSM* (**3 marks**)  
(ii) State three applications of *GPRS* (**3 marks**)



5. State the differences between the following pairs within the context of networking and communication technology:

(a) shielded and unshielded twisted pair cable      **(6 marks)**

(b) *thinnet* and thicknet coaxial cable **(6 marks)**

**Total Marks = 12 marks**

6a (i) State any four (4) characteristics of a network, that protocol rules guidelines can regulate

**(4 marks)**

6a (ii) How can Protocols be implemented in data communication      **(2 marks)**

6b Outline the significance of the following network protocol suites in Internetworking

communications: (i) Internet Protocol      (ii) Transmission Control Protocol      **(6 marks)**