

**NATIONAL OPEN UNIVERSITY OF NIGERIA,**

**PLOT 91 CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI – ABUJA**

**FACULTY OF SCIENCES**

**APRIL 2019 EXAMINATION**

**COURSE CODE: CIT 305**

**COURSE CREDIT: 3**

**COURSE TITLE: NETWORKING AND COMMUNICATION TECHNOLOGY**

**TIME ALLOWED: 2½ HOURS**

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

**QUESTIONS**

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1a.You have just been invited for an interview in a University that requires

Students’ for industrial training. In the course of your discussion with the panellists,

you are required to recommend the key steps you would adopt to ensure the effective

planning and design of the University’s network.

1. Write down the key steps you will consider in order to ensure the effective

planning and design of the University’s network (9 marks)

1. Give a brief explanation of the network planning and design methodology

(4 marks)

1b. Name and briefly describe the roles of the three (3) core protocols for the *IPv4*

Internet layer. (6 marks)

1c. Enumerate the three (3) common forms of impairment within the context of

Networking and Communications Technology. (3 Marks)

**[Total = 22 marks]**

2a. A common model adopted by application developers in establishing applications in

networks is the OSI model. Write down the two (2) categories of the OSI model and

their corresponding roles. (**4 marks)**

2b. Generally a telecommunication circuit can be described in different ways. Give the

description of the telecommunication circuit in terms of the following:

1. An electronic path
2. A number of linked conductors ) 2 marks each; 2x4 = **8 marks**
3. An electronic closed loop path
4. The complete path between two terminals

**[Total = 12 marks]**

3a. State three (3) major functions of the Data link layer. (**3 Marks)**

3b. Write down and briefly explain with the aid of a common example, the three (3) main

categories of data- link configurations that are commonly employed.(**9 Marks)**

**[Total = 12 marks]**

4a. Describe how an enterprise network is configured within the context of IP addresses.

(3 Marks)

4b.Based on the assumption that you have successfully gone through all the modules of

the course material in Networking and Communication Technology and that you

recently been deployed to an IT firm, on industrial training. Outline and briefly

describe any three (3) forms of threat you would advise the network administrator in

that firm to guard against. (9 Marks)

**[Total = 12 marks]**

5a. You have been deployed to Glo Nigeria as a Network Administrator.

In the event where you are asked to make a proposal to the management on the

techniques for ensuring efficient network security, name and briefly explain any six

(6) techniques for achieving this goal. (9 marks)

5b.The IEEE 802 standard is typical in Networking and Communication Technology.

State the implication of this standard. (3 marks)

**[Total = 12 marks]**

6a. Give a short description of the concept of ‘network protocol’. **(4 Marks)**

6b. Complete the table below, stating the cable type and topology of the listed protocols:

|  |  |  |  |
| --- | --- | --- | --- |
| S/N | Protocol | Cable | Topology |
| i. | ATM |  |  |
| ii. | Ethernet |  |  |
| iii. | LocalTalk |  |  |
| iv. | Token Ring |  |  |

**(8 marks)**

**[Total = 12 marks]**