**NATIONAL OPEN UNVERSITY OF NIGERIA**

**University Village, Plot 91, Cadastral Zone, NnamdiAzikiwe Express Way, Jabi, Abuja**

**FACULTY OF SCIENCES**

JULY 2017 EXAMINATION

**Course Title:**CIT305: Networking and Communication Technology **Credit Unit:** 3

**Instruction:** Answer question one and three others **Time:**3hrs

Q1a. In explicit terms discuss the concept of a Computer Network. **3marks**.

b.Using appropriate illustrations explain the common types of computer networks stated below:

1. LAN **2 marks**
2. PAN **2 marks**
3. HAN **2 marks**

c.You have been recently engaged as a computer network consultant for an educational institution and there is urgent need to establish network connectivity for the institution. List the important aspects that should be kept in mind while planning and designing anetwork? **4marks**

d. Briefly describe the following:-

i. Internetwork **2 marks**

ii. Backbone Network **2 marks**

iii. Intranet **2 marks**

iv. Virtual Private Network **2 marks**

v.Global area network **2 marks**

vi.Overlay network **2 marks**

Q2a. What do you understand by the term data link? 5 **marks**

b. State some protocols that are defined by the data link layer 5 **marks**

c. Mention seven layers of OSl model **5 marks**

Q3a. In clear terms, explain how fiber optic medium is better than coaxial cable 5 **marks**

b.What is Digital Subscriber Line (*DSL)*? **5 marks**

c. What are the advantages and disadvantages of *DSL*. **5 marks**

Q4ai. What do you understand by the term “wi-fi?” **3 marks**

ii. what are the advantages of Phase-Shift Keying (PSK)**3 marks**

iii. Explain the *TCP/IP* model of networking **4 marks**

b. What are the differences between the Class *A*, Class *B* and Class*C IP* networks? **5 marks**

Q5a. List three common types of threats- especially when the enterprise network isconnected to the internet. **3 marks**

b. With valid examples, explain the concept of Star topology. **5 marks**

c. Define the term “modem” and explain the concept of modulation. **7 marks**

Q6a. Explain Time-Division Multiplexing (TDM). **4 marks**

b. Write short note on the different types of impairment listed below:

1. Attenuation **2 marks**
2. Delay distortion **2 marks**
3. Noise **2 marks**

c. Explain how the concept of *DSL* works **5 marks**