



**NATIONAL OPEN UNIVERSITY OF NIGERIA  
14-16 AHMADU BELLO WAY, VICTORIA ISLAND LAGOS  
SCHOOL OF SCIENCE AND TECHNOLOGY  
MAY/JUNE 2012 EXAMINATION**

**CIT752: Data Communication and Networks  
TIME ALLOWED: 3Hours**

**INSTRUCTION(S): Attempt any Five (5) questions**

**Question 1**

- i) What is a Computer Network? – 5 marks**
- ii) Computer networks are generally classified according to their structure and the area they are localized in as;**
  - a) LAN – 5 marks**
  - b) MAN – 5 marks**
  - c) WAN – 5 marks**

Write briefly on these three classifications.

**Question 2**

What are the following?

- a)**
  - i) Topology – 5 marks**
  - ii) Protocol – 5 marks**
- b) Enumerate the advantages and disadvantages of the Star Topology – 10 marks**

**Question 3**

- i) List the Layers of OSI reference Model in the right order. -**7 marks**
- ii) Write on any five of the layers of the Model - **13 marks**

#### **Question 4**

Contrast between OSI reference Model and TCP/IP Reference Model - **20 marks**

#### **Question 5**

- i) What is Data Transmission? - **4 marks**
- ii) Contrast between the following;
  - a) Parallel and Serial Communication. - **4 marks**
  - b) Asynchronous, Synchronous and Isochronous Communication.- **6 marks**
  - c) Simplex, Half duplex and Full duplex Communication. - **6 marks**

#### **Question 6**

- i) Write briefly on Rivest-Shamir-Adelman Algorithm (RSA) (**5 marks**)
- ii) Enumerate any other five public key cryptography Algorithms (**15 marks**)

#### **Question 7**

Illustrate the RSA Key Generation Algorithm. (**20 marks**)