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**NATIONAL OPEN UNIVERSITY OF NIGERIA**

**14-16 AHMADU BELLO WAY, VICTORIA ISLAND LAGOS**

**MARCH/APRIL 2016 EXAMINATION**

**SCHOOL OF SCIENCE AND TECHNOLOGY**

**COURSE CODE: CIT723**

**COURSE TITLE: Operating System Design and Programming**

**Time: 2½ hours**

**Instruction: *Answer any five questions each question carries 14 marks***

1. (a) Briefly explain what you understand by network architecture? *(3 marks)*

(b) What are protocols? *(2 marks)*

(c) Enumerate the three points to keep in mind when you think about protocols in a network environment *(6 marks)*

(d) State any three benefits of networking. *(3 marks)*

2a) What do you understand by OSI reference model? Diagrammatically represent its layers. *(5 marks)*

b) Write short notes on any three of the OSI layers *(9 marks)*

3a) Briefly describe how protocols work. *(7 marks)*

b) Enumerate the steps taken by the protocols at both the sending and receiving computer. *(4 marks)*

c) State the file types that uses the following typical extensions: *(3 marks)*

1. .ps
2. .mpg
3. .dvi
4. .jpg
5. .gif
6. .pdf

4a) Write short notes on the following:

1. User Datagram Protocol (UDP) *(4 marks)*
2. Internetwork Packet Exchange and Sequenced Packet Exchange (IPX/SPX) *(5 marks)*
3. Media Access Protocols *(5 marks)*

5) Describe the architecture of the Linux operating system enumerating its various components *(14 marks)*

6a) Explain CRC error checking *(3 marks)*

b) Write short notes on the following:

1. Protocol Stacks *(3 marks)*
2. The Binding Process *(3 marks*

c) Describe Network Load Balancing *(5 marks)*

7a) What are network protocols? *(2 marks)*

b) Write short notes on the following describing and stating their functions:

1. Internet Protocol (IP) *(6 marks)*
2. Transmission control protocol (TCP). *(6 marks)*