**NATIONAL OPEN UNIVERSITY OF NIGERIA**

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

**SCHOOL OF SCIENCE AND TECHNOLOGY**

**JUNE/JULY EXAMINATION**

**COURSE CODE: CIT723**

**COURSE TITLE:OPERATING SYSTEM DESIGN AND PROGRAMMING**

**TIME ALLOWED:2*1/2* HOURS**

**INSTRUCTION: ANSWER ANY FOUR QUESTIONS IN ALL**

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* 1. List any 3 operating system views.(7.5 marks)
  2. Using examples, explain the WIMP paradigm of interaction. (10 marks)
  3. With the aid of appropriate examples, explain post-WIMP interfaces.

(10 marks)

* 1. Define the term, Network Architecture. (7.5 marks)
  2. Outline the 2 major functionalities provided by the Internet Protocol (IP).

(7.5 marks)

* 1. List 5 pieces of information about system processes that the Linux Kernel must keep track of. (10 marks)
  2. Briefly explain fault tolerant systems making reference to data redundancy.

(7.5 marks)

* 1. List 5 data redundancy alternatives offered by fault tolerant systems (10 marks)
  2. List and describe any 4 backup methods. (10 marks)
  3. Specify the Linux commands to perform the following operations:
     1. finds all lines in **hello.txt** that contain the string "dog" (2.5marks)
     2. forcefully terminate a process with PID 1515 (1.5 mark)
     3. sort the lines of **hello.txt** alphabetically and redirect the output to a file called **hello2.txt**(2 marks)
     4. remove duplicate adjacent lines from the sorted file **hello2.txt** (1 mark)and redirect the output to **hello3.txt** (1.5 marks)
  4. State and write short note on the 4 basic functions of an operating system

(10 marks)

* 1. Enumerate any 7 human acts and naturalcauses of a network disaster.

(7.5 marks)