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**University Examinations 2014/2015**

FIRST YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF BUSINESS INFORMATION TECHNOLOGY

AND

FIRST YEAR SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF BUSINESS INFORMATION TECHNOLOGY

**CIT 3200: COMPUTER OPERATING SYSTEMS**

 **DATE: APRIL 2015 TIME: 2 HOURS**

**INSTRUCTIONS:** *Answer question* ***one*** *and any other* ***two*** *questions*

**QUESTION ONE (30 MARKS)**

1. With reference to the evolution of computer operating systems, discuss the goal of abstraction and evident in the three computing eras (4 Marks)
2. Discuss John Von Neumann’s contribution to operating systems (4 Marks)
3. Define the following terms as used in operating system
4. Operating system (2 Marks)
5. Device controllers (2 Marks)
6. Deadlock (2 Marks)
7. Explain the three main goals of an operating system (3 Marks)
8. With aid of a well labeled diagram describe the five state model (4 Marks)
9. Distinguish between the following OS terms:
10. GUI versus command line (2 Marks)
11. Single verses multiprogramming (2 Marks)
12. Single verses multitasking (2 Marks)
13. Discuss the services of an operating systems with regard to error handling (2 Marks)

**QUESTION TWO (20 MARKS)**

1. State three goals/objectives of I/O device management (3 Marks)
2. Differentiate between external and internal fragmentation (2 Marks)
3. State and explain the three ways of structuring files (6 Marks)
4. Explain four conditions that must hold for a deadlock to occur (4 Marks)

 **QUESTION THREE (20 MARKS)**

1. In a distributed system explain how the operating system manages the integrity of information being processed (4 Marks)
2. A variable partition memory system has at some point in the time the following hole sizes in the given order

8K 16K 24K 32K 40K 48K

 A new process is to be loaded of size 8K. Which hole size would be filled using best fit, worst fit and first fit (4 Marks)

1. Explain four conditions that must hold for a deadlock to occur (4 Marks)
2. After a process has been created, it starts running and does whatever its job is. However, nothing last forever, not even processes. Sooner or later the new process will terminate. State four conditions that will warrant process termination (4 Marks)
3. Explain the usage of the following MS-DOS command:
4. cd (1 Mark)
5. mkdir (1 Mark)
6. del (1 Mark)
7. cls (1 Mark)
8. dir (1 Mark)

**QUESTION FOUR (20 MARKS)**

1. Identify and explain the process states (4 Marks)
2. With the use of a diagram discuss the computer architecture (4 Marks)
3. What is a process? (2 Marks)
4. Comment on the role of an operating system as concerns the following:
5. File management (2 Marks)
6. Process management (2 Marks)
7. Resource management (2 Marks)
8. What is the relationship between a process and a thread? (4 Marks)

**QUESTION FIVE (20 MARKS)**

1. Discuss the main information components processes in the PCB (6 Marks)
2. With a well labeled diagram, explain the resources used in the creation of threads and processes (4 Marks)
3. Briefly outline the goals of CPU Process Scheduling (6 Marks)
4. Distinguish between Pre-emptive versus Non-preemptive Scheduling (4 Marks)