



**BOWEN UNIVERSITY, IWO, NIGERIA**  
**COLLEGE OF COMPUTING AND COMMUNICATION STUDIES**  
**COMPUTER SCIENCE PROGRAMME**  
**B.SC. (HON) COMPUTER SCIENCE**  
**FIRST SEMESTER 2023/2024 EXAMINATION**

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COURSE CODE:	CSC 205	UNIT: 3UNITS	LEVEL: 200
COURSE TITLE:	OPERATING SYSTEM		
INSTRUCTION(S):	ANSWER ANY FOUR QUESTIONS		
TIME ALLOWED:	3HOURS		

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**Question One**

- In a multi-user environment a file is required to be shared among more than one user. There are several techniques and approaches to effect this operation. Briefly describe two (2) methods. **4 marks**
- Explain three (3) management functions of Operating system. **6 marks**
- State the definition of a file. Hence, itemize seven (7) most common system calls relating to files. **10 marks**
- Explain any five (5) attributes of a file. **5 marks**

**Question Two**

- Explain what you understand by Multiprocessing operating System. Explain the three (3) main advantages of Multiprocessing operating system. **7 marks**
- Multiprocessing enables more than a single process to apparently execute simultaneously on multiple processors. How is this achieved on a uniprocessor? **5 marks**
- In a tabular form, itemize six (6) differences between multiprocessing and multiprogramming? **6 marks**
- With a well labelled diagram, concisely explain process life cycle. **7 marks**

**Question Three**

- Briefly differentiate between a program and a process **5 marks**
- Describe the various attributes of a process **6 marks**
- With the aid of a diagram, describe the various states of a process. **12 marks**
- User interface can take several forms. Itemize two (2). **2 marks**

**Question Four**

- Interrupts have highest priority than other signals, although there are many types of interrupts. State and Explain two basic type of interrupts. **10marks**
- Interrupts are handled on the computer by special software called an interrupts handler. State five (5) steps of Interrupt Handling. **10 marks**
- Describe in details how central processing unit responds to Interrupts. **5 marks**

### Question Five

- (a) To protect a system, we must take security measures at four (4) basic levels. Describe those levels that must be taken to protect our system from attacks. **8 marks**
- (b) One of the common examples of program threat is a program installed in a computer which can store and send user credentials via network to some hacker. Enumerate four (4) well-known program threats. **8 marks**
- (c) System threats refers to misuse of system services and network connections to put user in trouble. State three (3) well-known system threats that can be used to launch program threats on a complete network. **9 marks**

### Question Six

- (a) Describe the concept of One Time passwords and highlights three (3) ways of implementing one time password. **4 marks**
- (b) Describe why Authentication, Authorization and Accounting framework is important in network security. **9 marks**
- (c) Write short notes on the following security terms:
- (i) Breach of confidentiality
  - (ii) Breach of availability
  - (iii) Theft of service
  - (iv) Denial of service
- 12 marks**