



**NATIONAL OPEN UNIVERSITY OF NIGERIA**  
**University Village, 91 Cadastral Zone, Nnamdi Azikwe Expressway, Jabi, Abuja**  
**FACULTY OF COMPUTING**  
**COMPUTER SCIENCE DEPARTMENT**  
**2024\_2 EXAMINATION**

**CIT 421: NET-CENTRIC COMPUTING**

**Credit: 3 units**

**INSTRUCTION: Answer Four (4) Questions.**

**Question one is Compulsory**

**TIME: 2 1/2 HOURS**

**Question 1**

- 1a. What do you understand by Mobile and wireless Computing? (2 marks)
- 1b. **Systems modeling** is the interdisciplinary study of the use of **models** to conceptualize and construct **systems** in business and **IT development**. A common type of **systems models** are **context models**, or **process models**. Define the underlined words. (7 marks)
- 1c. Examine the merits and demerits of Client-Server Computing. (7 marks)
- 1d. The benefits of the distributed systems cannot be overemphasized. It however has some challenges as well. Identify these benefits and challenges. (9 marks)

**Question 2**

- 2a. Explain the concepts of web application (Web App). (3 marks)
- 2b. A system is a simplified representation of reality. Identify systems in a real world. (4 marks)
- 2c. The challenges of distributed systems create a number of correlating risks. Examine these risks and how they affect organizations. (8 marks)

**Question 3**

- 3a. What did you understand by distributed tracing? (2 marks)
- 3b. It is important to understand basic prerequisite requirements to build a very good web application. Highlight these requirements. (3 marks)
- 3c. Distributed object paradigm provides abstractions beyond those of the message-passing model. Briefly explain the following in the context: (10 marks)
  - i. Distributed object
  - ii. State
  - iii. Operations
  - iv. Local objects
  - v. Distributed objects

- vi. Remote process
- vii. Local process
- viii. Server proxy
- ix. Object registry
- x. Object client:

#### **Question 4**

- 4a. Examine types of database use in building backend in web development. (2 marks)
- 4b. Examine the mechanisms for distributed object systems and identify the most straightforward one. (2 marks)
- 4c. As a student of web technology, highlight steps require to build a virile website. (11 marks)

#### **Question 5**

- 5a. Briefly explain the following technologies for wireless communication: (3 marks)
  - i) Radio
  - ii) Cellular
  - iii) Satellite
- 5b. Examine the development tools which provide continuous integration and web app deployment to the cloud hosting. (3 marks)
- 5c. Discuss the merits and demerits of cloud and mobile computing. (9 marks)

#### **Question 6**

- 6a. Examine the concepts of parallel system. (3 marks)
- 6b. A major requirement of cellular networks is to provide an efficient technique for multiple devices to access the wireless system. Highlight these techniques. ()
- 6c. Examine the pros and cons of Microwave Internet Service (MIS). (6 marks)