

EXAM CODE 01



UNIVERSITY OF CAPE COAST

COLLEGE OF DISTANCE EDUCATION

END OF SEMESTER II EXAMINATION - 2023/2024 ACADEMIC YEAR

BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY) YEAR 3

B.SC. (IT) YR 3

INF308D - NETWORK COMPUTING II

EXAM CODE: 01



SIGNATURE:

REGISTRATION NO.: TIME ALLOWED: 2 HOURS

Instructions:

1. Provide your EXAM CODE at the front page of the answer booklet. Failure to write your EXAM CODE will result in a score of zero for section A.
2. Answer ALL Questions in Section "A" in the answer booklet.
3. Answer any two Questions in Section "B", in the answer booklet.

SECTION A [Answer ALL Questions in this Section] (20 MARKS)

1. What is the Internet of Things (IoT)? A
 - A. global network of interconnected computers
 - B. network of physical devices connected to the internet
 - C. new type of social media
 - D. type of cloud computing technology
2. Which of the following is **not** a characteristic of IoT devices?
 - A. Connectivity
 - B. Autonomy
 - C. Inability to collect data
 - D. Remote control capability
3. In IoT, which protocol is widely used for short-range, low-power wireless communication?
 - A. HTTP
 - B. Wi-Fi
 - C. Bluetooth Low Energy (BLE)
 - D. SMTP

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4. What is a "smart home" in the context of IoT? A home _____
 - A. with a fast internet connection
 - B. equipped with internet-connected devices to automate tasks
 - C. that has a personal computer in every room
 - D. that uses only renewable energy

5. Which of the following technologies is commonly used in IoT for long-range communication?
 - A. Bluetooth
 - B. LoRaWAN
 - C. Wi-Fi
 - D. USB

6. Which of the following is an example of an IoT device? A _____
 - A. traditional desktop computer
 - B. refrigerator with sensors and internet connectivity
 - C. non-smart television
 - D. regular digital camera without wireless capability

7. What is the main function of an IoT gateway? To _____
 - A. block unauthorized users from accessing the network
 - B. collect and process data from IoT devices before sending it to the cloud
 - C. control all IoT devices in a network directly
 - D. serve as a backup power source for IoT devices

8. Which of the following is a key security concern in IoT?
 - A. Lack of internet connectivity
 - B. Limited data storage capacity
 - C. Data privacy and unauthorized access
 - D. High-power requirements of devices

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 INFORMATION SYSTEMS UNIT

14. Which of the following is a common benefit of network virtualization?
- Reduced internet bandwidth requirements
 - Improved flexibility and scalability in managing network resources
 - Increased physical network cabling
 - Elimination of all hardware devices in a network
15. Which of the following technologies is commonly used to create virtual networks within network virtualization?
- Firewalls
 - Virtual LANs (VLANs) and Virtual Private Networks (VPNs)
 - Routers and switches only
 - Personal computers
16. What is "noise" in the context of computer networks?
- An increase in network speed
 - Any unwanted signal that interferes with the transmission of data
 - The intentional blocking of network traffic
 - Data being sent at a higher frequency
17. Which type of noise is caused by electromagnetic interference from nearby devices?
- Thermal noise
 - Crosstalk
 - White noise
 - Gaussian noise
18. Which of the following is a primary function of a network operating system (NOS)?
- Managing files and folders on a single computer
 - Controlling network resources and enabling multiple devices to communicate and share resources
 - Running applications without internet connectivity
 - Providing power management for individual devices

19. Which Windows Server 2012 feature allows administrators to manage multiple servers from a single interface?
- Server Manager
 - Task Scheduler
 - Control Panel
 - Windows Defender
20. What is a primary function of a data center in an organization?
- Storing and managing large amounts of data and supporting business applications
 - Increasing the internet speed for individual devices
 - Designing user interfaces for applications
 - Providing antivirus protection to all company computers

SECTION B

Answer **four** questions Only from this section

- Discuss the impact of IoT in the healthcare industry, particularly in remote patient monitoring. (10 marks)
- Explain the layered architecture of the Internet of Things (IoT) and discuss the role of each layer in enabling IoT functionality. (10 marks)
- Explain the concept of network virtualization and discuss one key advantage it provides in modern networking. (10 marks)

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4. What is noise in computer networks, and how does it impact data transmission quality? (10 marks)
5. Explain how a Network Operating System (NOS) enhances network security. (10 marks)
6. What is a distributed system, and how does it differ from a centralized system? (10 marks)

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EXAMINATIONS UNIT

Application
Data processing
Network
Perception

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9. Which layer in the IoT architecture is responsible for data processing and analytics? _____ layer
A. Perception
B. Network
C. Application
D. Physical
10. What is "edge computing" in IoT? A _____
A. method of processing data at or near the data source rather than in a centralized data center
B. way to connect IoT devices to the internet
C. type of IoT device that consumes very low power
D. security measure used to protect IoT devices
11. Which of the following IoT technologies is commonly used for precision agriculture?
A. Cloud computing
B. Drones and sensors
C. Virtual reality
D. Machine learning algorithms
12. Which of the following best describes the role of IoT in healthcare?
A. Enhancing in-hospital communication between doctors
B. Providing remote patient monitoring and diagnostics through connected devices
C. Offering more online consultations between doctors and patients
D. Increasing patient access to medical journals
13. Connected cars use IoT to _____
A. improve fuel efficiency through real-time monitoring
B. provide high-speed internet access in remote areas
C. help cars operate independently with less driver input
D. store fuel for extended trips