بِسۡمِ اللّٰہِ الرَّحۡمٰنِ الرَّحِیۡمِ

Quran Education Point

QuranEducationPoint.Com

Class	10th	Chapter	05
Subject	Computer Science	Board	Federal

CHAPTER 5: Applications of Computer Science

Q1. Select the best answer for the following MCQs.

1. **The technology used for management of supply chain is known as:**
   - a. IoT b. **b. Blockchain** c. Cloud Computing d. AI Assistant
2. **The technology that provides automation in manufacturing industry, healthcare, home, traffic monitoring, etc. is known as:**
   - a. **a. IoT** b. Blockchain c. Cloud Computing d. Robotics
3. **The technology that is an alternative to on-premises computing in business is:**
   - a. AI Computing b. Server Computing c. **c. Cloud Computing** d. Network Computing
4. **Branch of AI that gives computer the ability to understand text and spoken words like humans is known as:**
   - a. Language Translation b. Digital Language Processing c. Robotics d. **d. Natural Language Processing**
5. **The technology that enabled the existence of Cryptocurrency is:**
   - a. Cloud Computing b. **b. Blockchain** c. Robotics d. IoT
6. **The virtual assistant developed by Microsoft is:**
   - a. **a. Cortana** b. Siri c. Alexa d. Bixby
7. **The probable next words or phrases that are displayed as we type anything in the search bar is called:**
   - a. Document Analysis b. Sentiment Analysis c. **c. Predictive Text** d. Internet Suggestion
8. **AI based realistic videos that are not genuine are known as:**
   - a. Privacy Breach Videos b. Social Manipulation Videos c. Misinformation Videos d. **d. Deepfake Videos**

بِسۡمِ اللّٰہِ الرَّحۡمٰنِ الرَّحِیۡمِ

Q2. Write answers of the following short response questions.

1. Describe how IoT can help traffic monitoring.

- **Answer:** IoT uses connected sensors, smart cameras, and GPS tracking devices installed on roads and vehicles to gather real-time data on traffic flow. This information helps authorities dynamically adjust traffic signal timings, detect accidents instantly, and route drivers around congestion via smart navigation apps.

2. Describe the benefits of using Blockchain technology in maintaining a digital ledger (database) of transactions.

- **Answer:**
  - **Decentralized Security:** Data is stored across multiple nodes rather than a single central server, making unauthorized tampering or hacking extremely difficult.
  - **Transparency:** Every transaction is permanently recorded and visible to authorized participants, establishing high trust without needing intermediaries like banks.

3. Differentiate between speech recognition and voice recognition.

- **Answer:**
  - **Speech Recognition:** Focuses on *what* is said, converting spoken human speech into textual data regardless of who is speaking.
  - **Voice Recognition:** Focuses on *who* is speaking, analyzing unique vocal patterns (biometrics) to verify a specific individual's identity for security and authentication.

4. Describe the features available in Quran memorization apps that help in the memorization of Quran.

- **Answer:** Quran memorization apps include features such as synchronized audio recitation by famous Qaris, adjustable audio playback speeds, repetition loops for specific ayat (verses), visual text highlighting, and interactive quizzes or progress trackers to test retention and Tajweed pronunciation.

5. Briefly describe how AI-based systems can cause injustice to some people.

- **Answer:** AI systems learn from historical human data that may carry hidden biases or societal prejudices. Consequently, these systems can reproduce and scale discrimination, leading to unfair decisions in areas like job recruitment, loan distribution, and criminal justice sentencing.

6. Describe how predictive text based on NLP algorithms helps in making online searches.

- **Answer:** Predictive text uses Natural Language Processing (NLP) to analyze user keystrokes and context in real-time, anticipating subsequent words or entire search queries. This accelerates typing, minimizes manual errors, and helps users locate relevant search results much faster.

نوٹس حاصل کرنے کے لیے QuranEducationPoint.com لکھ کر سرچ کریں۔

بِسۡمِ اللّٰہِ الرَّحۡمٰنِ الرَّحِیۡمِ

Q3. Write answers of the following extended response questions.

1. Briefly describe the application of IoT in the following areas:

- **a) Healthcare:** Connects medical devices (such as heart monitors and glucose meters) to cloud servers, allowing continuous remote patient monitoring, instant emergency alerts, and accurate data collection for doctors.
- **b) Hospitality:** Powers smart hotel rooms with automated climate control, intelligent lighting, smartphone keyless room entry, and app-based customized room services to improve guest comfort and energy efficiency.
- **c) Smart farming:** Utilizes soil moisture sensors and automated irrigation systems to monitor crop health, track weather conditions, and optimize water and fertilizer use to increase agricultural yields.

2. Briefly describe how Blockchain technology is useful in the following areas:

- **a) Management of supply chain:** Tracks products through every stage from production to delivery, providing transparency, reducing fraud, and quickly identifying defective batches or supply delays.
- **b) Voting:** Enables secure electronic voting where every vote is encrypted and immutably recorded, preventing ballot manipulation and boosting trust in election outcomes.
- **c) Protection of copyrighted and intellectual property:** Allows creators to log ownership of digital content (music, art, software) on a permanent ledger, preventing unauthorized duplication and verifying true authorship.

3. Describe any three benefits of cloud computing.

- **Answer:**
  - **Cost Efficiency:** Removes the high capital expense of buying and maintaining physical servers; users pay only for the storage or computing capacity they use.
  - **Accessibility:** Enables users to access files, data, and applications anytime, anywhere, and from any internet-connected device.
  - **Scalability:** Allows businesses to quickly scale storage space up or down according to changing organizational needs without altering hardware.

4. Describe the use of voice recognition for security and criminal investigation.

- **Answer:** Voice recognition serves as a biometric security measure to authenticate user identities for secure system access or banking. In criminal investigations, forensic experts analyze audio evidence (such as threatening phone calls or emergency dispatch recordings) against voice databases to identify suspects and assist law enforcement.

5. Briefly describe how NLP helps in email filtering and language translation.

- **Answer:**
  - **Email Filtering:** NLP parses the text, tone, and headers of incoming emails to detect spam, phishing, or promotional content, routing them into appropriate folders like Spam or Inbox.

نوٹس حاصل کرنے کے لیے QuranEducationPoint.com لکھ کر سرچ کریں۔

- **Language Translation:** NLP comprehends the grammar, structure, and semantic meaning of text in one human language and converts it accurately into another while preserving original context and nuance.

6. Describe two applications of robots that are not mentioned in this unit.

- **Answer:**
  - **Agricultural Robots (AgBots):** Used for automated fruit picking, crop harvesting, and targeted weed control, helping farmers overcome labor shortages.
  - **Underwater Exploration Robots (Autonomous Underwater Vehicles):** Deployed for deep-sea research, inspecting submerged pipelines, and exploring ocean floors where conditions are too hazardous for humans.

QuranEducationPoint.Com