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Computer Science Grade 10 — Chapter 5

Applications of Computer Science

by Public Library

Independent practice MCQs from the supplied Class 10 Computer Science notes pack. Total: 50 questions.

A. Important / Main Topics

1. What does IoT stand for?

(A) Internet of Things
(B) Internet of Technology
(C) Integration of Things
(D) Interface of Technology

Correct Answer: A

Explanation: IoT stands for Internet of Things, an infrastructure that connects multiple devices for man-to-machine and machine-to-machine interaction.

2. Which technology is used for real-time tracking of products during their journey across the supply chain?

(A) IoT
(B) Blockchain
(C) Cloud Computing
(D) AI Assistant

Correct Answer: B

Explanation: Blockchain technology is very useful for real-time tracking of products during their journey across the supply chain.

3. What is the primary purpose of a sensor in an IoT system?

(A) To store data
(B) To process data
(C) To collect data from the environment
(D) To display data

Correct Answer: C

Explanation: Sensors are used in IoT systems to collect data from our surroundings.

4. Which of the following is NOT a foundational component of IoT?

(A) Sensors/Devices
(B) Cloud
(C) Connectivity
(D) Blockchain

Correct Answer: D

Explanation: The five foundational components of IoT are Sensors/Devices, User Interface, Cloud, Connectivity, and Data Processing. Blockchain is not one of them.

5. What is the main purpose of speech recognition?

(A) To convert human speech into text or commands
(B) To identify a person by their voice
(C) To translate languages
(D) To create voice assistants

Correct Answer: A

Explanation: Speech recognition is software that converts human speech into text form or commands that devices can understand.

6. Which branch of AI enables computers to understand text and spoken words like humans?

(A) Computer Vision
(B) Natural Language Processing (NLP)
(C) Robotics
(D) Expert Systems

Correct Answer: B

Explanation: NLP is a branch of AI that gives computers the ability to understand text and spoken words the same way humans do.

7. What is the primary purpose of robotics in healthcare?

(A) To entertain patients
(B) To manage hospital inventory only
(C) To assist in surgery and sanitization
(D) To replace all doctors

Correct Answer: C

Explanation: To assist in surgery and sanitization — this correctly answers the question.

8. What does bias in AI refer to?

(A) Fairness and equality
(B) Accuracy of AI systems
(C) Speed of AI algorithms
(D) Unfairness or discrimination against certain groups

Correct Answer: D

Explanation: Bias means unfairness or discrimination against someone based on race, ethnicity, gender, age, etc.

9. Which of the following is a responsibility of AI system designers?

(A) To ensure fairness and prevent injustice
(B) To maximize profits
(C) To ignore user privacy
(D) To create deepfake videos

Correct Answer: A

Explanation: AI system designers must ensure that the use of AI technology does not result in injustice to specific groups of people.

10. What is the primary goal of cloud computing?

(A) To store data only on local devices
(B) To deliver computing services over the internet
(C) To replace all hardware
(D) To eliminate the need for software

Correct Answer: B

Explanation: Cloud computing is the delivery of computing services such as servers, storage, database, networking, and application software over the cloud (Internet).

11. Which IoT application uses sensors to monitor soil conditions and control irrigation?

(A) Smart Home
(B) Smart Grid
(C) Smart Farming
(D) Smart Transport

Correct Answer: C

Explanation: Smart farming uses sensors that monitor light, humidity, temperature, moisture, and acidity to help farmers control irrigation.

12. What is the primary function of a smart grid?

(A) To monitor traffic
(B) To automate hotel services
(C) To track products in supply chain
(D) To manage energy production and distribution in real-time

Correct Answer: D

Explanation: To manage energy production and distribution in real-time — this correctly answers the question.

13. In an IoT system, what is the role of connectivity?

(A) To transmit data between devices and cloud
(B) To collect data
(C) To store data
(D) To analyze data

Correct Answer: A

Explanation: To transmit data between devices and cloud — this correctly answers the question.

14. Which of the following is a key feature of blockchain technology?

(A) Centralized control
(B) Immutability
(C) Single point of failure
(D) Limited transparency

Correct Answer: B

Explanation: Immutability — this correctly answers the question.

15. What is the primary purpose of cryptocurrency?

(A) To store data
(B) To track supply chain
(C) To facilitate direct payments without intermediaries
(D) To monitor patients

Correct Answer: C

Explanation: Cryptocurrency is a digital currency that facilitates direct payment without the involvement of intermediaries such as a bank.

16. Which AI technology is used in healthcare for personalized treatment recommendations based on medical imaging?

(A) NLP
(B) Robotics
(C) Speech Recognition
(D) Computer Vision

Correct Answer: D

Explanation: Computer vision is a specialized branch of AI that teaches computers to draw meaningful results from digital images, such as analyzing medical imaging.

17. What is the primary function of an AI agent like Siri or Alexa?

(A) To understand and respond to voice commands
(B) To manage databases
(C) To build websites
(D) To design hardware

Correct Answer: A

Explanation: To understand and respond to voice commands — this correctly answers the question.

18. In the context of AI, what does "deepfake" refer to?

(A) A type of deep learning
(B) Computer-created realistic fake videos
(C) A secure encryption method
(D) A data visualization technique

Correct Answer: B

Explanation: Deepfake videos are computer-created AI-based realistic fake videos that misrepresent someone.

19. What is the purpose of a chatbot in customer service?

(A) To replace all human employees

(B) To design websites
(C) To automate customer interactions and respond to queries
(D) To manage supply chain

Correct Answer: C

Explanation: To automate customer interactions and respond to queries — this correctly answers the question.

20. Which of the following is a benefit of cloud computing?

(A) Increased hardware costs
(B) Limited scalability
(C) Dependency on local servers
(D) Cost reduction and scalability

Correct Answer: D

Explanation: Cost reduction and scalability — this correctly answers the question.

21. What is the role of the cloud in an IoT system?

(A) To store, process, and manage data
(B) To collect data
(C) To transmit data
(D) To display data

Correct Answer: A

Explanation: The IoT cloud stores data collected from devices, processes it, manages it, and allows remote access.

22. Explain the difference between public and private cloud.

(A) Public cloud is for one organization; private cloud is for many
(B) Public cloud is shared by many; private cloud is dedicated to one organization
(C) Both are the same
(D) Public cloud is more secure than private cloud

Correct Answer: B

Explanation: A public cloud is shared by multiple users, while a private cloud is exclusively used by a single organization.

23. What is the difference between NLP and Computer Vision?

(A) NLP understands images; Computer Vision understands text
(B) Both are the same
(C) NLP understands text and speech; Computer Vision understands images and videos
(D) NLP is for robots; Computer Vision is for chatbots

Correct Answer: C

Explanation: NLP understands text and speech; Computer Vision understands images and videos — this correctly answers the question.

24. How does blockchain ensure security and transparency?

(A) Through centralized control
(B) By hiding all transactions
(C) By allowing one person to control the ledger
(D) Through cryptographic hashing and consensus mechanisms

Correct Answer: D

Explanation: Blockchain ensures security through cryptographic hashing and consensus mechanisms, and transparency because all transactions are visible to network participants.

25. What are the key responsibilities of AI system designers regarding privacy?

(A) To safeguard user data privacy and obtain consent
(B) To share user data freely
(C) To ignore privacy concerns
(D) To sell user data

Correct Answer: A

Explanation: AI designers must safeguard user data privacy, obtain consent for data collection, and comply with privacy laws.

B. Less Important / Secondary Topics

26. Which IoT application uses sensors to monitor soil conditions and control irrigation?

(A) Smart Farming
(B) Smart Home
(C) Smart Grid
(D) Smart Transport

Correct Answer: A

Explanation: Smart farming uses various sensors that provide detailed information about soil condition to farmers.

27. What is the primary function of a Roomba robot?

(A) To cook food
(B) To clean floors autonomously
(C) To monitor health
(D) To drive cars

Correct Answer: B

Explanation: Roomba robot is a popular autonomous vacuum cleaner capable of picking dirt, dust, and hair.

28. Which type of AI is used to identify a person based on unique voice characteristics?

(A) Speech Recognition
(B) NLP
(C) Voice Recognition
(D) Computer Vision

Correct Answer: C

Explanation: Voice Recognition — this correctly answers the question.

29. What is the main difference between speech recognition and voice recognition?

(A) Speech = person; Voice = words
(B) Both are the same
(C) Speech = text; Voice = images
(D) Speech = words; Voice = person

Correct Answer: D

Explanation: Speech recognition converts speech to text (what is being said). Voice recognition identifies the speaker (who is speaking).

30. Which of the following is a privacy breach concern in AI?

(A) Collecting personal data without consent
(B) Improving customer service
(C) Enhancing data security
(D) Increasing energy efficiency

Correct Answer: A

Explanation: Privacy breaches are concerned with the violation of protection of personal data, such as collecting data without consent.

31. What is the responsibility of AI designers regarding transparency?

(A) To hide how AI works
(B) To document how AI systems work and make decisions
(C) To avoid explaining decisions
(D) To maximize profits

Correct Answer: B

Explanation: AI designers must ensure transparency by documenting how AI systems work and make decisions.

32. Which cloud deployment model is exclusively used by a single organization?

(A) Public Cloud
(B) Hybrid Cloud
(C) Private Cloud
(D) Community Cloud

Correct Answer: C

Explanation: A private cloud is a cloud computing environment exclusively used by a single organization or entity.

33. What is the primary purpose of cybersecurity?

(A) To increase internet speed
(B) To develop new software applications
(C) To create more social media platforms
(D) To protect computer systems, networks, and data

Correct Answer: D

Explanation: Cybersecurity is the practice of protecting computer systems, networks, and data from unauthorized access, cyberattacks, and malicious activities.

34. Which of the following is a legal online activity?

(A) Developing a new mobile app
(B) Hacking into a network to steal information
(C) Tricking people through phishing scams
(D) Deploying malware to disrupt systems

Correct Answer: A

Explanation: Developing a new mobile app is a legal online.

35. Why is cybersecurity essential in the digital era?

(A) It helps in faster data transmission
(B) It ensures that personal data is protected from malicious actors
(C) It decreases the cost of internet services
(D) It reduces the need for technical support

Correct Answer: B

Explanation: Cybersecurity is essential to protect personal data, financial records, and sensitive information from malicious actors.

36. Which technology enables devices to communicate with each other and with the consumer for real-time energy management?

(A) Blockchain
(B) Cloud Computing
(C) Smart Grid
(D) NLP

Correct Answer: C

Explanation: Smart grids use IoT devices that communicate with each other and the consumer for real-time energy management.

37. What is the primary purpose of a digital ledger in blockchain?

(A) To store images
(B) To process payments only
(C) To visualize data
(D) To record transactions securely

Correct Answer: D

Explanation: A blockchain is a digital ledger or database of transactions that continuously grows and is secure.

38. In IoT, what is the role of an analytics platform?

(A) To connect, organize, visualize, and analyze data
(B) To collect data
(C) To transmit data
(D) To store data

Correct Answer: A

Explanation: To connect, organize, visualize, and analyze data — this correctly answers the question.

39. Which of the following is an example of a wearable IoT device?

(A) Smart thermostat
(B) Fitness band
(C) Smart door lock
(D) Smart light bulb

Correct Answer: B

Explanation: Fitness bands are wearable IoT devices equipped with sensors for monitoring heart rate, steps, calories, etc.

40. What is the primary function of a Roomba robot?

(A) To cook food
(B) To monitor health
(C) To clean floors autonomously
(D) To drive cars

Correct Answer: C

Explanation: Roomba robot is a popular autonomous vacuum cleaner capable of picking dirt, dust, and hair.

41. Which type of AI is used to identify a person based on unique voice characteristics?

(A) Speech Recognition
(B) NLP
(C) Computer Vision
(D) Voice Recognition

Correct Answer: D

Explanation: Voice Recognition — this correctly answers the question.

42. What is the main difference between speech recognition and voice recognition?

(A) Speech = words; Voice = person
(B) Speech = person; Voice = words
(C) Both are the same
(D) Speech = text; Voice = images

Correct Answer: A

Explanation: Speech recognition converts speech to text (what is being said). Voice recognition identifies the speaker (who is speaking).

43. Which of the following is a privacy breach concern in AI?

(A) Improving customer service
(B) Collecting personal data without consent
(C) Enhancing data security
(D) Increasing energy efficiency

Correct Answer: B

Explanation: Privacy breaches are concerned with the violation of protection of personal data, such as collecting data without consent.

44. What is the responsibility of AI designers regarding transparency?

(A) To hide how AI works
(B) To avoid explaining decisions
(C) To document how AI systems work and make decisions
(D) To maximize profits

Correct Answer: C

Explanation: AI designers must ensure transparency by documenting how AI systems work and make decisions.

45. Which cloud deployment model is exclusively used by a single organization?

(A) Public Cloud

(B) Hybrid Cloud
(C) Community Cloud
(D) Private Cloud

Correct Answer: D

Explanation: A private cloud is a cloud computing environment exclusively used by a single organization or entity.

46. What is the primary purpose of cybersecurity?

(A) To protect computer systems, networks, and data
(B) To increase internet speed
(C) To develop new software applications
(D) To create more social media platforms

Correct Answer: A

Explanation: Cybersecurity is the practice of protecting computer systems, networks, and data from unauthorized access, cyberattacks, and malicious activities.

47. Which of the following is a legal online activity?

(A) Hacking into a network to steal information
(B) Developing a new mobile app
(C) Tricking people through phishing scams
(D) Deploying malware to disrupt systems

Correct Answer: B

Explanation: Developing a new mobile app is a legal online.

48. Why is cybersecurity essential in the digital era?

(A) It helps in faster data transmission
(B) It decreases the cost of internet services
(C) It ensures that personal data is protected from malicious actors
(D) It reduces the need for technical support

Correct Answer: C

Explanation: Cybersecurity is essential to protect personal data, financial records, and sensitive information from malicious actors.

49. Which of the following is a consequence of inequitable access to information?

(A) Equal opportunities for all
(B) Improved healthcare for everyone
(C) Increased job opportunities
(D) Widening social and economic inequality

Correct Answer: D

Explanation: Widening social and economic inequality — this correctly answers the question.

50. What is the primary purpose of the digital divide solutions?

(A) To ensure equitable access to technology for all
(B) To increase inequality
(C) To limit internet access
(D) To reduce digital literacy

Correct Answer: A

Explanation: To ensure equitable access to technology for all — this correctly answers the question.