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# Computer Science Grade 9 — Chapter 5

Applications of Computer Science

by Public Library

*Independent practice MCQs from the supplied Class 9 Computer Science notes pack. Total: 50 questions. Each item has four options, the correct letter, and a short explanation.*

## A. Important / Main Topics

**1. What is Artificial Intelligence (AI)?**

(A) A branch of computer science that makes machines perform human-like tasks
(B) A type of hardware
(C) A programming language
(D) A network protocol

**Correct Answer: A**

*Explanation: AI is a branch of computer science to make computer-controlled machines that can intelligently perform human-like tasks.*

**2. What is Machine Learning (ML)?**

(A) A type of computer virus
(B) A field within AI that teaches computers to learn from data
(C) A hardware component
(D) A network topology

**Correct Answer: B**

*Explanation: Machine learning is a field within Artificial Intelligence that teaches computers to learn from data inputs and experience like humans without direct programming.*

**3. Which type of machine learning uses labeled data?**

(A) Unsupervised Learning
(B) Reinforcement Learning
(C) Supervised Learning
(D) Deep Learning

**Correct Answer: C**

*Explanation: Supervised Learning — this correctly answers the question.*

**4. What is the primary goal of the fifth generation of computers?**

(A) Faster speed
(B) Enhanced memory
(C) Smaller size
(D) Artificial Intelligence and Natural Language Processing

**Correct Answer: D**

*Explanation: Artificial Intelligence and Natural Language Processing — this correctly answers the question.*

**5. Which AI area deals with understanding spoken and written words?**

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

**Correct Answer: A**

*Explanation: NLP is about giving computers the ability to understand spoken and written words just like we do.*

**6. What is the purpose of an expert system?**

(A) To play games
(B) To solve complex problems using knowledge and reasoning

(C) To browse the internet
(D) To store data

**Correct Answer: B**

*Explanation: An expert system is an interactive AI-based computer program designed to solve complex problems using knowledge and reasoning.*

**7. Which cloud computing model is owned and operated by a cloud service provider?**

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

**Correct Answer: C**

*Explanation: In the public cloud model, resources are owned and operated by a cloud service provider.*

**8. What does the term "Chatbot" refer to?**

(A) A robot that cleans
(B) A type of hardware
(C) A programming language
(D) A computer program that combines AI with natural language to answer questions

**Correct Answer: D**

*Explanation: A chatbot is a computer program that combines AI with natural language to provide instant answers to website visitors' questions.*

**9. Which of the following is an application of AI in healthcare?**

(A) Diagnosing diseases like cancer
(B) Playing music
(C) Editing photos
(D) Sending emails

**Correct Answer: A**

*Explanation: AI-based software is fed into machines used in hospitals to help in diagnosis of diseases such as cancer.*

**10. What is the primary characteristic of self-driving cars?**

(A) They only work at night
(B) They use AI software, sensors, cameras, and radars
(C) They require a driver at all times
(D) They cannot detect obstacles

**Correct Answer: B**

*Explanation: Self-driving cars use AI software connected with devices such as sensors, cameras, and radars to travel without a driver.*

**11. Which type of machine learning is used when the goal is to group customers with similar buying habits without predefined labels?**

(A) Supervised Learning
(B) Reinforcement Learning
(C) Unsupervised Learning
(D) Deep Learning

**Correct Answer: C**

*Explanation: Unsupervised learning uses unlabeled data to find hidden patterns through clustering.*

**12. Which cloud computing model is dedicated to a single organization and provides more control?**

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

**Correct Answer: D**

*Explanation: In the private cloud model, resources are owned by and used inside a single organization.*

**13. A self-driving car uses sensors and cameras to navigate. Which AI area does this primarily rely on?**

(A) Computer Vision
(B) NLP
(C) Expert Systems
(D) Speech Recognition

**Correct Answer: A**

*Explanation: Computer vision enables computer systems to obtain meaningful information from digital images and videos.*

**14. A company uses AI to analyze customer reviews and determine if they are positive, negative, or neutral. What is this technique called?**

(A) Data Mining
(B) Sentiment Analysis
(C) Predictive Analysis
(D) Data Visualization

**Correct Answer: B**

*Explanation: Sentiment Analysis — this correctly answers the question.*

**15. Which of the following is a benefit of cloud computing?**

(A) High upfront infrastructure costs
(B) Limited scalability
(C) Cost efficiency and scalability
(D) Requires physical servers on-site

**Correct Answer: C**

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

**16. A doctor uses an AI system that asks questions and provides a diagnosis based on rules and knowledge. What type of AI system is this?**

(A) Chatbot
(B) Virtual Assistant
(C) Self-driving Car
(D) Expert System

**Correct Answer: D**

*Explanation: Expert System — this correctly answers the question.*

**17. Which AI tool is used for correcting spelling and grammar mistakes in documents?**

(A) Grammarly
(B) ChatGPT
(C) Lovo ai
(D) Google Assistant

**Correct Answer: A**

*Explanation: Grammarly is an AI tool for correcting spelling and grammar mistakes in documents.*

**18. What is the primary purpose of Natural Language Processing (NLP)?**

(A) To understand images
(B) To enable easy communication between computers and humans using natural language
(C) To control robots
(D) To store data

**Correct Answer: B**

*Explanation: The purpose of NLP is to provide easy communication between computers and humans by using natural language.*

**19. Which of the following is an application of AI in agriculture?**

(A) Playing music

(B) Editing photos
(C) Scanning images of insects to detect disease
(D) Sending emails

**Correct Answer: C**

*Explanation: AI is used for scanning images of insects that attack crops and livestock to detect and prevent spread of disease.*

**20. Which cloud computing model is a combination of public and private cloud?**

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

**Correct Answer: D**

*Explanation: Hybrid cloud is a combination of public and private cloud.*

**21. A bank wants to detect fraudulent transactions in real-time. Which AI technique should they use?**

(A) Machine Learning
(B) Natural Language Processing
(C) Computer Vision
(D) Speech Recognition

**Correct Answer: A**

*Explanation: Machine Learning is used to detect fraud in banking transactions by recognizing patterns.*

**22. A hospital wants to analyze X-ray images to detect tumors. Which AI area is most suitable?**

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

**Correct Answer: B**

*Explanation: Computer Vision — this correctly answers the question.*

**23. A company wants to build a chatbot that can answer customer questions. Which AI area is essential?**

(A) Computer Vision
(B) Robotics
(C) Natural Language Processing
(D) Speech Recognition

**Correct Answer: C**

*Explanation: Natural Language Processing — this correctly answers the question.*

**24. Which type of machine learning is used to predict car prices based on features like engine type and number of seats?**

(A) Unsupervised Learning
(B) Reinforcement Learning
(C) Deep Learning
(D) Supervised Learning

**Correct Answer: D**

*Explanation: Supervised learning uses labeled data (known input and output) to predict car prices.*

**25. What is the primary benefit of cloud computing for businesses?**

(A) Scalability and cost efficiency
(B) High upfront costs
(C) Limited accessibility
(D) Requires on-site servers

**Correct Answer: A**

*Explanation: Scalability and cost efficiency — this correctly answers the question.*

## B. Less Important / Secondary Topics

**26. What is the difference between supervised and unsupervised learning?**

(A) Supervised uses labeled data; unsupervised uses unlabeled data
(B) Supervised uses unlabeled data; unsupervised uses labeled data
(C) Both use labeled data
(D) Both use unlabeled data

**Correct Answer: A**

*Explanation: Supervised learning uses labeled data (known input and output), while unsupervised learning uses unlabeled data.*

**27. Which of the following is a feature of the fifth generation of computers?**

(A) Use of vacuum tubes
(B) Capable of learning, reasoning, and solving problems autonomously
(C) Use of transistors
(D) Use of integrated circuits

**Correct Answer: B**

*Explanation: Fifth-generation computers are capable of learning, reasoning, and solving problems autonomously.*

**28. What is the purpose of the `prompt()` function in JavaScript?**

(A) To display an alert box
(B) To change the background color
(C) To take user input
(D) To create a loop

**Correct Answer: C**

*Explanation: The `prompt()` function pops up a message window that takes input from the user.*

**29. Which of the following is a characteristic of supervised learning?**

(A) Finds hidden patterns
(B) Uses clustering
(C) No predefined categories
(D) Uses labeled data

**Correct Answer: D**

*Explanation: Supervised learning uses labeled data (known input and output) to build a model.*

**30. What is the primary goal of cloud computing?**

(A) To deliver computing services over the Internet
(B) To store data locally
(C) To increase hardware costs
(D) To reduce accessibility

**Correct Answer: A**

*Explanation: Cloud computing refers to the delivery of computing services over the Internet.*

**31. A company wants to use AI to recommend products to customers based on their browsing and purchase history. Which AI application is this?**

(A) Chatbot
(B) Recommendation System
(C) Self-driving Car
(D) Expert System

**Correct Answer: B**

*Explanation: Recommendation System — this correctly answers the question.*

**32. Which of the following is an example of unsupervised learning?**

(A) Predicting car prices

(B) Classifying emails as spam or not spam
(C) Grouping customers with similar buying habits
(D) Recognizing handwritten digits

**Correct Answer: C**

*Explanation: Unsupervised learning uses clustering to group data without predefined labels.*

**33. What is the primary purpose of an expert system?**

(A) To play games
(B) To browse the internet
(C) To store data
(D) To solve complex problems using knowledge and reasoning

**Correct Answer: D**

*Explanation: An expert system is an interactive AI-based computer program designed to solve complex problems using knowledge and reasoning.*

**34. Which AI area is used in self-driving cars to detect obstacles?**

(A) Computer Vision
(B) Natural Language Processing
(C) Speech Recognition
(D) Expert Systems

**Correct Answer: A**

*Explanation: Computer Vision — this correctly answers the question.*

**35. What is the main advantage of cloud computing for data storage?**

(A) Limited storage capacity
(B) Scalable and accessible from anywhere
(C) High upfront costs
(D) Requires physical servers on-site

**Correct Answer: B**

*Explanation: Cloud computing offers scalable storage that is accessible from anywhere with an internet connection.*

**36. A hospital wants to use AI to improve patient care. Which of the following is an AI application in healthcare?**

(A) Playing music
(B) Editing photos
(C) Diagnosing diseases like cancer
(D) Sending emails

**Correct Answer: C**

*Explanation: AI is used in healthcare to diagnose diseases like cancer at an early stage.*

**37. A farmer wants to use AI to improve crop production. Which AI application is most suitable?**

(A) Playing music
(B) Editing photos
(C) Sending emails
(D) Scanning images of insects to detect disease

**Correct Answer: D**

*Explanation: AI scans images of insects that attack crops to detect and prevent disease.*

**38. A company wants to reduce its IT infrastructure costs and scale resources up or down based on demand. Which cloud computing model should they choose?**

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

**Correct Answer: A**

*Explanation: Public Cloud — this correctly answers the question.*

**39. A student wants to build a chatbot for their school website. Which AI technology enables the chatbot to understand user questions?**

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

**Correct Answer: B**

*Explanation: Natural Language Processing — this correctly answers the question.*

**40. Which of the following best describes the difference between AI and Machine Learning?**

(A) AI is a subset of ML
(B) They are the same thing
(C) ML is a subset of AI
(D) AI and ML are unrelated

**Correct Answer: C**

*Explanation: Machine Learning is a field within Artificial Intelligence.*

**41. A company wants to analyze customer reviews to determine if they are positive, negative, or neutral. Which AI technique should they use?**

(A) Data Mining
(B) Predictive Analysis
(C) Data Visualization
(D) Sentiment Analysis

**Correct Answer: D**

*Explanation: Sentiment Analysis — this correctly answers the question.*

**42. Which of the following is a challenge of AI?**

(A) All of the above
(B) Bias in algorithms
(C) Job losses due to automation
(D) Lack of transparency

**Correct Answer: A**

*Explanation: All of the above — this correctly answers the question.*

**43. A company wants to use AI to detect fraudulent transactions. Which type of machine learning is most suitable?**

(A) Unsupervised Learning
(B) Supervised Learning
(C) Reinforcement Learning
(D) Deep Learning

**Correct Answer: B**

*Explanation: Supervised learning uses labeled data (fraudulent vs. legitimate) to build a fraud detection model.*

**44. Which of the following is an ethical issue associated with ChatGPT?**

(A) Misinformation
(B) Cheating and plagiarism
(C) All of the above
(D) Data privacy

**Correct Answer: C**

*Explanation: All of the above — this correctly answers the question.*

**45. What is the primary benefit of cloud computing for a small business?**

(A) High upfront costs
(B) Limited accessibility

(C) Requires on-site servers
(D) Cost efficiency and scalability

**Correct Answer: D**

*Explanation: Cloud computing offers cost efficiency, scalability, and accessibility for small businesses.*

**46. A company wants to use AI to recommend products to customers based on their purchase history. Which AI application is this?**

(A) Recommendation System
(B) Chatbot
(C) Self-driving Car
(D) Expert System

**Correct Answer: A**

*Explanation: Recommendation System — this correctly answers the question.*

**47. Which of the following is a characteristic of the fifth generation of computers?**

(A) Use of vacuum tubes
(B) Focus on AI and NLP
(C) Use of transistors
(D) Use of integrated circuits

**Correct Answer: B**

*Explanation: Focus on AI and NLP — this correctly answers the question.*

**48. A company wants to use AI to analyze customer feedback from social media. Which AI technique is most suitable?**

(A) Computer Vision
(B) Speech Recognition
(C) Natural Language Processing
(D) Robotics

**Correct Answer: C**

*Explanation: NLP is used to analyze text data like social media feedback.*

**49. Which of the following is a benefit of AI in healthcare?**

(A) Early diagnosis of diseases
(B) Reduced hospital visits
(C) Personalized patient care
(D) All of the above

**Correct Answer: D**

*Explanation: All of the above — this correctly answers the question.*

**50. A company wants to use AI to detect spam emails. Which type of machine learning is most suitable?**

(A) Supervised Learning
(B) Unsupervised Learning
(C) Reinforcement Learning
(D) Deep Learning

**Correct Answer: A**

*Explanation: Supervised learning uses labeled data (spam vs. not spam) to build a spam detection model.*