**Question 1:** Which of the following is considered a hallmark of Artificial General Intelligence (AGI)? a) Excelling at a specific task like playing chess. b) Demonstrating human-level cognitive ability across a wide range of tasks. c) Processing large amounts of data very quickly. d) Using deep neural networks with many layers. Answer: b) Demonstrating human-level cognitive ability across a wide range of tasks.

**Question 2:** Machine Learning is a subfield of AI that focuses on: a) Creating explicit rule-based systems for problem-solving. b) Enabling computers to learn from data without being explicitly programmed. c) Simulating the biological functions of the human brain. d) Developing algorithms for natural language understanding only. Answer: b) Enabling computers to learn from data without being explicitly programmed.

**Question 3:** What is the primary purpose of "training data" in Machine Learning? a) To evaluate the performance of a trained model. b) To deploy the model in a real-world application. c) To teach the model to recognize patterns and make predictions. d) To optimize the model's hyperparameters after training. Answer: c) To teach the model to recognize patterns and make predictions.

**Question 4:** Which of the following is a common technique used to prevent overfitting in Machine Learning models? a) Increasing the complexity of the model architecture. b) Training the model on a very small dataset. c) Using regularization techniques like L1 or L2. d) Evaluating the model only on the training data. Answer: c) Using regularization techniques like L1 or L2.

**Question 5:** Natural Language Processing (NLP) is primarily concerned with: a) Enabling computers to generate realistic images. b) Developing algorithms for robotic control. c) Enabling computers to understand, interpret, and generate human language. d) Creating expert systems for medical diagnosis. Answer: c) Enabling computers to understand, interpret, and generate human language.

**Question 6:** Which of the following AI categories is most commonly used in virtual assistants like Siri and Alexa? a) Artificial Superintelligence (ASI) b) Artificial General Intelligence (AGI) c) Artificial Narrow Intelligence (ANI) d) Strong AI Answer: c) Artificial Narrow Intelligence (ANI)

**Question 7:** Deep Learning is a subfield of Machine Learning that heavily relies on: a) Decision trees with a limited number of branches. b) Linear regression models with feature engineering. c) Artificial neural networks with multiple layers. d) Rule-based expert systems. Answer: c) Artificial neural networks with multiple layers.

**Question 8:** What does the term "generalization" refer to in the context of Machine Learning? a) The ability of a model to perform well on the training data. b) The process of simplifying a complex model. c) The ability of a model to perform well on new, unseen data. d) The optimization of model hyperparameters. Answer: c) The ability of a model to perform well on new, unseen data.

**Question 9:** Identifying and categorizing entities like names of people, organizations, and locations in text is a task within: a) Sentiment Analysis. b) Machine Translation. c) Named Entity Recognition (NER). d) Text Summarization. Answer: c) Named Entity Recognition (NER).

**Question 10:** Which of the following is a significant challenge in Natural Language Processing (NLP)? a) The deterministic nature of human language. b) The lack of large datasets for training. c) The inherent ambiguity in human language. d) The ease with which computers understand context. Answer: c) The inherent ambiguity in human language.

**Question 11:** What is the role of an "activation function" in a neural network? a) To define the architecture of the network layers. b) To introduce non-linearity into the network's output. c) To calculate the error between the predicted and actual values. d) To optimize the weights during training. Answer: b) To introduce non-linearity into the network's output.

**Question 12:** Which of the following is a common application of Computer Vision, a field closely related to AI? a) Generating realistic human speech. b) Predicting stock market prices. c) Object detection in images. d) Translating text between languages. Answer: c) Object detection in images. **Question 13:** What is the purpose of a "loss function" in Machine Learning? a) To define the model's architecture. b) To measure the difference between the model's predictions and the actual target values. c) To preprocess the training data. d) To prevent overfitting during training. Answer: b) To measure the difference between the model's predictions and the actual target values.

**Question 14:** Which of the following best describes the concept of "transfer learning" in Machine Learning? a) Training a model on a very large dataset from scratch. b) Using a model trained on one task as a starting point for a different but related task. c) Transferring data between different machine learning algorithms. d) Transferring the computational workload to a more powerful machine. Answer: b) Using a model trained on one task as a starting point for a different but related task.

**Question 15:** What is the goal of "reinforcement learning," another subfield of AI? a) To learn from explicitly labeled data. b) To learn through trial and error by interacting with an environment and receiving rewards or penalties. c) To cluster unlabeled data into distinct groups. d) To predict future values based on historical data. Answer: b) To learn through trial and error by interacting with an environment and receiving rewards or penalties.

**Question 1:** What is the primary function of a smartphone's operating system (OS)? a) To make phone calls. b) To manage the phone's hardware and software resources. c) To take high-resolution photos. d) To connect to Wi-Fi networks. Answer: b) To manage the phone's hardware and software resources.

**Question 2:** Which of the following technologies allows smartphones to connect to the internet wirelessly over short distances? a) GPS b) Bluetooth c) Wi-Fi d) NFC Answer: c) Wi-Fi

**Question 3:** What does the acronym "GPS" stand for in the context of smartphones? a) Global Positioning System b) General Packet Service c) Graphics Processing System d) Gigabytes Per Second Answer: a) Global Positioning System

**Question 4:** Which of these is a common type of connector used for charging and data transfer on smartphones? a) VGA b) HDMI c) USB-C d) Ethernet Answer: c) USB-C

**Question 5:** What is the function of a smartphone's "RAM" (Random Access Memory)? a) To store the operating system and installed applications permanently. b) To store user data like photos and videos. c) To temporarily store data that the phone is actively using, allowing for faster multitasking. d) To control the phone's screen display. Answer: c) To temporarily store data that the phone is actively using, allowing for faster multitasking.

**Question 6:** Which of the following is a key component responsible for processing data and running applications on a smartphone? a) Battery b) SIM card c) Processor (CPU) d) Speaker Answer: c) Processor (CPU)

**Question 7:** What is the purpose of a smartphone's "accelerometer"? a) To measure the phone's battery level. b) To detect the phone's orientation and movement. c) To capture images and videos. d) To play audio. Answer: b) To detect the phone's orientation and movement.

Question 8: Which technology allows for contactless payments using a smartphone? a) Bluetooth b) GPS c) NFC (Near-Field Communication) d) Wi-Fi Direct Answer: c) NFC (Near-Field Communication) **Question 9:** What is the function of a smartphone's "front-facing camera"? a) To take high-resolution photos of landscapes. b) To scan documents. c) To take selfies and for video calls. d) To measure distances. Answer: c) To take selfies and for video calls.

**Question 10:** Which of the following is a common way to unlock a smartphone using biometric authentication? a) PIN code b) Password c) Fingerprint scanner d) Pattern lock Answer: c) Fingerprint scanner

**Question 11:** What is the purpose of a smartphone's "haptic feedback"? a) To increase the screen brightness. b) To provide tactile sensations in response to user interactions. c) To improve audio quality. d) To extend battery life. Answer: b) To provide tactile sensations in response to user interactions.

**Question 12:** Which of the following is a cloud-based service commonly used for backing up data from smartphones? a) Bluetooth b) Infrared c) iCloud or Google Drive d) USB tethering Answer: c) iCloud or Google Drive

**Question 13:** What does the term "pixel density" (PPI) refer to in a smartphone display? a) The maximum brightness of the screen. b) The number of pixels per inch, affecting the sharpness and clarity of the display. c) The size of the screen in inches. d) The type of display technology (e.g., LCD, OLED). Answer: b) The number of pixels per inch, affecting the sharpness and clarity of the display.

**Question 14:** Which of the following technologies is used for wireless charging of smartphones? a) Bluetooth Low Energy b) Radio Frequency Identification (RFID) c) Inductive charging d) Infrared (IR) blaster Answer: c) Inductive charging

**Question 15:** What is the function of a smartphone's "gyroscope"? a) To measure the phone's altitude. b) To detect the phone's rotational orientation. c) To control the volume of the speakers. d) To adjust the screen brightness automatically. Answer: b) To detect the phone's rotational orientation.

**Question 1:** What is the primary function of a chatbot? a) To physically assist users with tasks. b) To automate conversations and provide information or services. c) To control hardware devices. d) To perform complex calculations and data analysis. Answer: b) To automate conversations and provide information or services.

**Question 2:** Which of the following technologies is often used in the development of chatbots? a) Quantum computing b) Biotechnology c) Natural Language Processing (NLP) d) Astrophysics Answer: c) Natural Language Processing (NLP)

**Question 3:** What is a common way for users to interact with a chatbot? a) Through physical buttons and dials. b) By writing or speaking in natural language. c) Using programming code. d) Via telepathic communication. Answer: b) By writing or speaking in natural language.

**Question 4:** Which of the following is a potential benefit of using chatbots for businesses? a) Increased manual labor costs. b) Reduced customer satisfaction. c) 24/7 availability and instant responses. d) Limited scalability during peak demand. Answer: c) 24/7 availability and instant responses.

**Question 5:** What is a "rule-based" chatbot primarily reliant on? a) Machine learning algorithms. b) A predefined set of questions and answers. c) Real-time emotional analysis of user input. d) Access to a vast database of general knowledge. Answer: b) A predefined set of questions and answers.

**Question 6:** What is a key characteristic of a more advanced, AI-powered chatbot? a) Strict adherence to a fixed script. b) Inability to understand variations in user phrasing. c) The ability to learn from conversations and improve over time. d) Requiring exact keyword matching for responses. Answer: c) The ability to learn from conversations and improve over time.

**Question 7:** In what area are chatbots commonly used? a) Surgical operations. b) Customer service and support. c) Space exploration. d) Archaeological excavations. Answer: b) Customer service and support.

**Question 8:** What is a potential limitation of some chatbots? a) They can perfectly understand and respond to all complex human emotions. b) They always provide completely accurate and unbiased information. c) They may struggle with nuanced language or unexpected questions. d) They can flawlessly replace all human interaction. Answer: c) They may struggle with nuanced language or unexpected questions.

**Question 9:**

What is the term for a chatbot designed to mimic human conversation in a realistic way? a) Algorithm b) Interface c) Conversational AI d) Protocol Answer: c) Conversational AI Question 10: Which of the following is an example of a platform where you might encounter a chatbot? a) A traditional mail service. b) A social media messaging app. c) A printed encyclopedia. d) A landline telephone. Answer: b) A social media messaging app.