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Artificial intelligence objective questions and answers

Given article text here 1. Looking forward to seeing everyone at the meeting tomorrow and discussing our strategies. 2. What is the primary goal of Artificial Intelligence? A) To create systems that require human input to operate B) To develop systems that simulate human intelligence processes C) To replace all jobs currently performed by humans D) To enhance computer processing speeds 3. Which of the following is a key characteristic of Artificial Intelligence systems? 4. In which year was the term "Artificial Intelligence" first coined? A) 1950 B) 1960 C) 1970 D) 1980 5. What is the difference between Narrow AI and General AI? 6. Which of the following is an example of General AI? 7. In Python, which library is commonly used for AI tasks such as Natural Language Processing (NLP)? A) TensorFlow B) PyTorch C) Keras D) NLTK 8. Your AI system is making decisions based on incorrect historical data. What is the most likely cause? A) Data poisoning B) Data bias C) Model overfitting D) Insufficient training data 9. What is the first step in the problem-solving process in AI? A) Defining the problem B) Identifying relevant knowledge C) Generating potential solutions D) Evaluating solutions 10. Which of the following is a common strategy used in AI problem-solving? A) Brute force search B) Heuristic search C) Deep learning D) Reinforcement learning 11. Which AI technique involves breaking down a problem into smaller sub-problems? A) Divide and conquer B) Recursion C) Dynamic programming D) Greedy search 12. In AI, what does the term "heuristic" refer to? A) A shortcut to find a good solution B) A method for solving problems optimally C) A technique for avoiding obstacles D) A strategy for maximizing rewards 13. Which of the following is an example of a problem that can be solved using AI? A) Calculating the square root B) Solving a maze C) Recognizing images D) All of the above 14. What is the primary purpose of using a search algorithm in AI problem-solving? A) To store data efficiently B) To navigate through a solution space C) To find the optimal solution D) To avoid getting stuck in local optima 15. Which of the following is a disadvantage of using brute force search in AI? A) It is not guaranteed to find a solution B) It requires domain-specific knowledge C) It is computationally expensive D) All of the above 16. What role does backtracking play in AI problem-solving? A) It avoids revisiting already explored paths B) It guarantees finding the optimal solution C) It simplifies the problem D) It is used to store solutions 17. In Python, which algorithm would you use to solve a maze problem? A) Breadth-first search B) Depth-first search C) Dijkstra's algorithm D) A* 18. Which Python function would you use to generate all possible permutations of a list? A) itertools.permutations() B) math.factorial() C) random.shuffle() D) sys.exit() 19. How would you implement a simple brute force search to find a target element in a list in Python? A) Use a for loop to iterate through the list B) Use a while loop with break C) Use recursion D) Use a stack 20. In Python, how would you implement the A* search algorithm for pathfinding in a graph? A) Use a priority queue to store nodes B) Use a stack to store nodes C) Use recursion to explore all paths D) Use a simple list to store nodes 21. Which Python library can be used to visualize search algorithms applied to a problem? A) Matplotlib B) Seaborn C) Plotly D) Scikit-learn 22. Your AI solution is taking too long to find a solution using brute force. What is a possible solution? A) Increase the dataset size B) Switch to a heuristic-based search C) Add more processing power D) Decrease the dataset size 23. An AI model is stuck in a loop while trying to solve a problem. What is the most likely cause? A) Insufficient training data B) Model overfitting C) Data poisoning D) Algorithmic limitation 24. Your search algorithm is not finding the optimal solution. What can you do? A) Increase the dataset size B) Switch to a heuristic-based search C) Add more processing power D) Decrease the dataset size What could be the issue with the algorithm? A)The algorithm is not greedy enough, B)The heuristic function is not admissible, C)The dataset is too small, D)The algorithm is too simple. The main purpose of search algorithms in AI is to explore possible solutions. Which of the following is an example of an uninformed search algorithm? Depth-first search (DFS) uses a stack while breadth-first search (BFS) uses a queue. In which scenario is using A* search algorithm preferable? Using heuristics to guide the search requires less memory and they guarantee finding a solution, but it's not true for informed search algorithms over uninformed ones. What is the primary advantage of using informed search algorithms over uninformed ones? They use heuristics to guide the search. The heuristic refers to a practical approach or guiding principle used to solve problems efficiently. It breaks down complex tasks into simpler chunks, which are organized in a way that's easy to understand. This makes it clearer what the overall plan is and how each part fits together. Non-hierarchical planning doesn't show different levels of a plan in a structured way. The other options don't specifically talk about showing different levels within a plan. So, the correct choice that shows successive representations of different plan levels is hierarchical planning. The imitation game was originally called the "Turing Test" by its creator, Alan Turing. It's a test to see if a machine can act like a human in conversations without being noticed. If someone can't tell whether they're talking to a person or a machine based on their conversation, then the machine passes the test. Decision support programs are specifically made to help managers make decisions about business operations. They analyze data and provide information to help managers choose the best course of action. Budget projections might be part of decision-making, but these programs cover more than just budgeting. Visual presentations can come from these programs, but they're not the main purpose. Vacation schedules aren't typically what these programs are about. So, the correct choice that emphasizes the purpose of decision support programs is business decisions. Alain Colmerauer led the team at the University of Marseille in 1972 to develop PROLOG. PROLOG (Programming in Logic) is a programming language based on symbolic logic and predicate calculus, known for its use in rule-based problem-solving and reasoning. The other options don't talk about PROLOG or its development. Nicklaus Wirth designed languages like Pascal, Seymour Papert worked with Logo, and Marvin Minsky contributed to the field of AI but isn't associated with PROLOG. Given article text here The development of artificial intelligence (AI) was influenced by several key figures and technologies, including the Logo programming language. John McCarthy is recognized as one of the founders of AI and his work on LISP programming language played a significant role in its creation. The correct choice for the person who led the team that developed PROLOG is Alain Colmerauer. Programming robots involves different approaches, such as continuous-path control, contact sensing control, robot vision control, or pick-and-place control. Continuous-path control programs a robot to follow a desired trajectory by physically moving it along the path while recording positions. This approach is typically used for robotic tasks that require precise movements. The LISP system can be invoked using different keywords, such as AI, LISP, or CL (Common Lisp). These options are not mutually exclusive and can be used together. DEC's VAX computers were involved in the development of XCON, an expert system used in industrial environments. Researchers at Carnegie Mellon University developed XCON in the 1970s to configure orders for DEC's computers. Batch processing was the prevalent method of computer access prior to the invention of time-sharing systems. According to WatElectronics, June 5, 2021, the father of Artificial Intelligence is John McCarthy. Artificial Intelligence enables computers to think intelligently like humans do, and its main goals include creating expert systems and implementing human intelligence in machines. AI is primarily associated with computer functions that mimic human intelligence, such as reasoning, learning, and problem-solving. Various fields, including philosophy, biology, sociology, and mathematics, can contribute to building intelligent systems. However, geology does not play a role in this area. Computer programs with AI can indeed answer generic questions they are designed to solve. There are four types of artificial intelligence: reactive machines, limited memory, theory of mind, and self-awareness. Given text here 1. Which of the following is an application of AI in a way that makes it easily perceivable by people who provide it, as well as modifiable to correct errors? A. It should be perceivable by the people who provide it. B. It should be easily modifiable to correct errors. C. Both A and B D. None of the Above 2. What are all the applications of AI that include Gaming, Expert Systems, and Vision Systems? A. Gaming B. Expert Systems C. Vision Systems D. All of the above 3. In which year did John McCarthy coin the term Artificial Intelligence? A. 1950 B. 1953 C. 1956 D. 1959 4. At which university was the first demonstration of an AI program run? A. Carnegie Mellon University. B. Oxford University C. Cambridge University D. Stanford University 5. Which of the following is not an application of AI, specifically Content mining? A. Intelligent Robots B. Handwriting Recognition C. Speech Recognition D. Content mining 6. Who developed Expert Ease under their direction? A. John McCarthy B. Donald Michie C. Lofti Zadeh D. Alan Turing 7. How do you traditionally exit a LISP system by entering? A. quit B. exit C. bye D. ok 8. What is Artificial intelligence defined as, specifically making machines intelligent? A. Putting your intelligence into Computer B. Programming with your own intelligence C. Making a Machine intelligent D. Playing a Game 9. When a top-level function is entered in LISP, what does the processor do? A. It reads the function entered B. It evaluates the function and the function's operands C. It prints the results returned by the function D. All of the above 10. What are all the components of an expert system, including inference engine, knowledge base, and user interface? A. inference engine B. knowledge base C. user interface D. All of the above 11. What is a process that is repeated, evaluated, and refined called? A. diagnostic B. descriptive C. interpretive D. iterative Given article text here In the realm of artificial intelligence (AI), cognitive science is a term that encompasses the study of mental processes such as perception, attention, and memory. A list in AI programming typically contains cells or fields rather than pointers. Points are more commonly used to represent locations or addresses in a computer's memory. The 1956 Dartmouth University Conference, organized by John McCarthy, is widely regarded as a pivotal event in the history of artificial intelligence. Texas Instruments Incorporated produces a low-cost LISP machine called "LISP Machine" (not listed among the options). Given text: "language processing c) Virtual reality d) Robotics" Paraphrased version: "Some areas of interest include: c) Virtual reality d) Robotics Given article text here The following are types of neural networks or techniques used in natural language processing and machine learning: - Recurrent Neural Network (RNN) - Word Embedding - Part-of-Speech Tagging - Named Entity Recognition - Regularization - Gradient Descent - K-means Clustering Given text here is about Machine Learning and its types, including supervised learning algorithms for classification, reinforcement learning algorithms for stochastic environments, unsupervised learning techniques, natural language processing methods like lemmatization and tokenization, and machine learning algorithms such as principal component analysis. Deep learning techniques can be employed to prevent overfitting through several methods including early stopping, regularization, batch normalization, and dropout. However, the most effective approach is often considered to be dropout which involves randomly dropping out neurons during training in order to force the network to learn more robust features. Among the various machine learning algorithms used for classification problems with discrete output values, decision trees are a prominent choice due to their ability to recursively split data based on the most informative features. This enables them to accurately classify input data into predefined categories. Regression is a type of machine learning algorithm specifically designed for predicting continuous output values. It works by analyzing historical data and identifying patterns that can be used to forecast future outcomes, such as the price of a house based on its characteristics. Deep learning models play a crucial role in sequence-to-sequence tasks like machine translation and speech recognition. Among these, recurrent neural networks (RNNs) stand out due to their ability to process sequential data through a series of interconnected nodes or recurrent connections. Word embedding is a technique used in deep learning to represent words as vectors in high-dimensional spaces. This approach captures the semantic relationships between words, enabling machines to understand nuanced meanings and context-dependent implications. In computer vision, objects within images can be identified using various techniques. Convolutional neural networks (CNNs) are particularly effective at this task due to their ability to extract features through a series of convolutional layers, thereby facilitating object recognition. Lastly, information extraction is a critical technique in natural language processing used to derive meaningful insights from text by identifying and categorizing key elements such as entities, relationships, and events. is a method utilized in reinforcement learning for updating model parameters by minimizing discrepancies between predicted and actual rewards. Regularization techniques help reduce model complexity to prevent overfitting. Feature selection chooses essential features and cross-validation tests performance on separate datasets. Supervised learning is used for classification & regression tasks, training models on labeled data.

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