

Free Questions for **Artificial-Intelligence-Foundation**

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Question 1

Question Type: MultipleChoice

Para View allows large data sets to be visualised on a parallel computer.

Which of the following is one of the techniques used?

Options:

- A- Norm calculation.
- B- Dashboard.
- C- Contour plot
- D- Eigen function analysis.

Answer:

C

Explanation:

ParaView is an open-source, multi-platform visualization application that allows large data sets to be visualized on a parallel computer. ParaView uses a variety of techniques to visualize data, including contour plots, which are useful for visualizing 3D data sets. Contour plots are created by plotting a set of curves connecting points of equal value, with each curve representing a particular value. This allows 3D data sets to be visualized in a 2D format, making it easier to understand the data.

Question 2

Question Type: MultipleChoice

A vector in vector calculus is a quantity that has magnitude and direction.

What is a vector in computer programming?

Options:

- A- An array with one dimension.
- B- A two-dimensional array of scalars.
- C- An array of complex numbers
- D- A constant

Answer:

A

Explanation:

In computer programming, a vector is a data structure that contains a collection of elements that are all of the same type. Each element in the vector has an associated index, which can be used to access and modify the element at that index. Vectors are commonly used to store collections of numerical values (e.g., integers or floating-point numbers) or strings, but they can also be used to store any type of data.

Question 3

Question Type: MultipleChoice

Which factor of a Waterfall' approach is most likely to result in the failed delivery of an AI project?

Options:

A- Takes longer to deliver all functional requirements.

- B-** Discourages collaboration and cross boundary communication.
- C-** Takes longer to complete the design phase of the project.
- D-** Discourages revisiting and revising any prior phase once it is complete.

Answer:

D

Explanation:

The Waterfall approach is a sequential design process in which each phase of development must be completed before the next phase can begin. This means that once a phase is complete, it is difficult to go back and make changes, as any changes made to the project could potentially affect all the other phases. As a result, the Waterfall approach can make it difficult to adapt to changing customer requirements or adjust to new technology. This can ultimately lead to the failed delivery of an AI project.

Question 4

Question Type: MultipleChoice

In an AI project the domain expert is the person...

Options:

- A- with technical and managerial oversight of the business plan
- B- who manages the agile project and writes the technical terms of reference
- C- who measures the trustworthiness of the AI system
- D- with special knowledge or skills in the area of endeavour and defines what is fit for purpose'

Answer:

D

Explanation:

In an AI project, a domain expert is a person with special knowledge or skills in that particular area of endeavour, and they are responsible for defining what is 'fit for purpose' for the project. The domain expert provides insights into the problem and suggests ways to address it. They also provide guidance on evaluating and validating the AI system and its outputs. The domain expert is also responsible for communicating with stakeholders and providing feedback on the progress of the project. Reference:

BCS Foundation Certificate In Artificial Intelligence Study Guide (2019), AI & People, Chapter 12.

<https://www.apmg-international.com/en/al-adoption/domain-expert/>

Question 5

Question Type: MultipleChoice

Which of the following is an advantage of a machine based system?

Options:

- A- Able to judge ambiguous and unknown situations.
- B- Capable of sympathising with humans.
- C- Undertakes monotonous tasks reliably and accurately.
- D- Can explain the output of an AI system

Answer:

C

Explanation:

One of the main advantages of a machine-based system is its ability to reliably and accurately undertake monotonous and repetitive tasks. This is especially useful for tasks that require a high level of accuracy and precision, such as data entry or analysis. Machine-based systems are also able to process large amounts of data quickly, meaning that they are able to complete tasks more quickly and

efficiently than humans. Additionally, machine-based systems can be programmed to take certain decisions and actions based on the input data, allowing them to automate certain processes without the need for human intervention. Reference:

BCS Foundation Certificate In Artificial Intelligence Study Guide (2019), AI Systems, Chapter 8.

<https://www.apmg-international.com/en/al-adoption/advantages-of-al/>

Question 6

Question Type: MultipleChoice

The EU's Ethical Guidelines use what to demonstrate trustworthy AI?

Options:

- A- A quality assurance plan.
- B- UN's sustainability goals.
- C- Customer feedback.
- D- A human-centric value system.

Answer:

D

Explanation:

The European Union's Ethical Guidelines for Trustworthy AI use a human-centric value system to demonstrate that Artificial Intelligence (AI) is trustworthy. This value system is based on human rights, autonomy, safety, privacy, transparency, accountability and fairness. The guidelines also state that AI should be designed, developed and used in a manner that respects these values. Reference:

<https://ec.europa.eu/digital-single-market/en/news/ethical-guidelines-trustworthy-ai>

BCS Foundation Certificate In Artificial Intelligence Study Guide (2019), A.I & Ethics, Chapter 5.

Question 7

Question Type: MultipleChoice

What is an intelligent robot?

Options:

- A- A robot that has consciousness
- B- A robot that acts like a human.
- C- A robot that uses AI techniques.
- D- A robot that takes the place of a human.

Answer:

C

Explanation:

An intelligent robot is one that uses AI techniques, such as machine learning and natural language processing, to perceive, plan and act on its environment. Intelligent robots are able to process large amounts of data quickly and accurately, allowing them to make decisions and carry out tasks autonomously. Intelligent robots can be used in a variety of applications, from industrial automation to healthcare.

Question 8

Question Type: MultipleChoice

An intelligent robot uses AI to do what?

Options:

- A- Sense, plan and act
- B- Plan, act and speak.
- C- Perceive, plan and act.
- D- Sense, plan and move.

Answer:

C

Explanation:

An intelligent robot uses Artificial Intelligence (AI) to perceive its environment, plan its actions and then act on them. This is sometimes referred to as the "sense, plan, act" cycle, and is at the heart of what makes a robot intelligent. By using AI, robots can sense their environment, plan their actions accordingly and then act on them in order to complete their tasks.

For more information, please refer to the [BCS Foundation Certificate in Artificial Intelligence Study Guide](https://www.bcs.org/category/18076/bcs-foundation-certificate-in-artificial-intelligence-study-guide):<https://www.bcs.org/category/18076/bcs-foundation-certificate-in-artificial-intelligence-study-guide>.

Question 9

Question Type: MultipleChoice

What is defined as a philosophy, or set of assumptions and/or techniques, which characterise an approach to a class of problems?

Options:

- A- An approach.
- B- A set
- C- A paradigm.
- D- An algorithm.

Answer:

C

Explanation:

A paradigm is defined as a philosophy, or set of assumptions and/or techniques, which characterise an approach to a class of problems. Paradigms are often used in Artificial Intelligence to provide a structure for problem solving, allowing for better understanding of the problem and providing a framework for developing a solution. For example, the logic-based approach is a paradigm that uses logical reasoning to solve problems.

For more information, please refer to the BCS Foundation Certificate in Artificial Intelligence Study Guide:<https://www.bcs.org/category/18076/bcs-foundation-certificate-in-artificial-intelligence-study-guide>.

Question 10

Question Type: MultipleChoice

What is defined as a machine that can carry out a complex series of tasks automatically?

Options:

- A- A robot
- B- A production line.
- C- A computer.
- D- An autonomous vehicle.

Answer:

C

Explanation:

<https://en.wikipedia.org/wiki/Robot#:~:text=A%20robot%20is%20a%20machine,control%20may%20be%20embedded%20within>.

A computer is defined as a machine that can carry out a complex series of tasks automatically. Computers are used in a variety of applications, including artificial intelligence (AI), robotics, production lines, and autonomous vehicles. Computers are able to carry out complex tasks thanks to their ability to process large amounts of data quickly and accurately.

For more information, please refer to the BCS Foundation Certificate in Artificial Intelligence Study Guide:<https://www.bcs.org/category/18076/bcs-foundation-certificate-in-artificial-intelligence-study-guide>.

Question 11

Question Type: MultipleChoice

How could machine learning make a robot autonomous?

Options:

A- Use OCR, optical character recognition, to read documents

- B-** Use NLP (Natural Language Processing) to listen
- C-** Use actuators to modify its environment
- D-** Learn from sensor data and plan to carry out a task.

Answer:

D

Explanation:

Machine learning can be used to make robots autonomous by allowing them to learn from sensor data and plan how to carry out a task. This involves using algorithms to analyze data from sensors and use this data to make decisions and take actions. By using machine learning, robots can learn from their environment and become more autonomous. Reference:

[1] BCS Foundation Certificate In Artificial Intelligence Study Guide, 'Robotics', p.98. [2] APMG-International.com, 'Foundations of Artificial Intelligence' [3] EXIN.com, 'Foundations of Artificial Intelligence'

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