Question 1

What does TRL stand for?

Options:

A- Technical Robotic Level.

B- Transform Reinforced Learning

C- Technology Readiness Level.

D- Transport Ready Level.

Answer:

C

Explanation:

Technology Readiness Level(TRL) Technology Readiness Levels (TRL) are a method of estimating the technology maturity of Critical Technology Elements (CTE) of a program during the acquisition process.

TRL stands for Technology Readiness Level and is a measure of how close a technology is to being ready for use in a real-world environment. TRL is used to assess the progress of research and development of a technology, ranging from basic research (TRL 1) to fully operational (TRL 9). TRL is used to help determine the level of completion of a technology and its potential success in a real-world environment.

Question 2

Question Type: MultipleChoice

Healthcare can benefit from AI, and in particular Machine Learning, an example of which is?

Options:

A- Autonomous wheelchairs.

B- Automated blood sampling.

C- Autonomous vehicles.

D- Diagnostic image analysis

Answer:

D

Explanation:

Healthcare can benefit from AI, and in particular Machine Learning, in a number of ways. One example is diagnostic image analysis, which can help to automatically identify and classify abnormalities in medical images such as X-rays, CT scans, and MRI scans. Machine Learning algorithms can be used to detect patterns in the data which can be used to accurately diagnose diseases and illnesses.

Question 3

Question Type: MultipleChoice

The Scrum Master is part of which team?

Options:

A- Software development team.

B- Data preparation team

C- Agile project team.

D- Management team

Answer:

C

Explanation:

https://www.techtarget.com/whatis/definition/scrum-master#:~:text=A%20Scrum%20Master%20is%20a,in%20accordance%20with%20Agile%20principles.

The Scrum Master is part of the agile project team, and is responsible for ensuring that the team is following the Scrum process. The Scrum Master is the facilitator of the team, ensuring that the team is working together and following the Scrum principles. They are also responsible for protecting the team from any external influences and helping resolve any issues that may arise.

Question 4

Question Type: **MultipleChoice**

Collaboration, learning and iterative are terms used to describe what?

Options:

A- Waterfall projects.

B- Rapid software development.

C- Trustworthy AI.

D- Agile projects

Answer:

D

Explanation:

Collaboration, learning, and iterative are terms used to describe agile projects. Agile projects are designed to be adaptive and flexible, allowing teams to incorporate feedback and learn from their mistakes. This process encourages collaboration between team members, and emphasizes the importance of iterative development and continual improvement. Agile projects focus on delivering value quickly and efficiently, allowing teams to make changes and adapt to changing customer needs.

Question 5

What does Prof David Chalmers describe the hard consciousness problem to be as comples as?

Options:

A- Psychology.

B- Turbulence.

C- Quantum mechanics.

D- The universe.

Answer:

D

Explanation:

Prof David Chalmers describes the hard consciousness problem to be as complex as the universe. He argues that understanding consciousness is as hard as understanding the universe itself, due to the number of variables and dimensions involved. He has compared the complexity of the problem to that of turbulence, quantum mechanics, and psychology, but believes that the problem of

consciousness is even more complex than all of these.

Question 6

Question Type: **MultipleChoice**

If AI undertakes routine and monotonous tasks and takes these away from humans, what will humans do?

Options:

A- Higher value work.

B- Leisure activities

C- Change jobs.

D- Sabotage the AI.

Answer:

A

Explanation:

AI is designed to take on routine and monotonous tasks, freeing up humans to take on more complex, higher value work. This can include tasks such as research, problem-solving, and decision-making. This shift in work roles is expected to increase productivity and efficiency, allowing humans to focus on more creative and innovative tasks. For example, robots can be used to automate mundane manufacturing processes, freeing up human workers to take on jobs that require more creative thinking and problem-solving.

Question 7

Question Type: MultipleChoice

Professor David Chalmers described consciousness as having two questions. What were these?

Options:

A- An easy one and a hard one.

B- What is the sub conscious and what is the conscious?

C- Can we integrate our knowledge to form consciousness and can we simulate consciousness?

D- Are only humans conscious and are machines always unconscious?

Answer:

B

Explanation:

Professor David Chalmers described consciousness as having two questions: 'What is it like to be conscious?' and 'Can machines be conscious?'. The first question, 'What is it like to be conscious?', is an attempt to understand what it is like to experience the subjective aspects of consciousness, such as feeling, emotion, and perception. The second question, 'Can machines be conscious?', is an attempt to understand whether or not machines can have the same kinds of subjective experiences as humans. For more information, please see the BCS Foundation Certificate In Artificial Intelligence Study Guide or the resources listed above.

Question 8

Question Type: MultipleChoice

What are monotonous and repetitive tasks, that require accuracy BEST suited to?

Options:

A- Human plus machine.

B- Machine.

C- Human.

D- Artificial General Intelligence.

Answer:
B

Explanation:
Monotonous and repetitive tasks that require accuracy are best suited to machines. Machines are able to accurately and quickly perform tasks that require little to no creativity, such as data entry or image recognition. This is because machines are able to process large amounts of data quickly and accurately, and are less likely to make mistakes than humans. Additionally, machines are able to process large amounts of data without becoming bored or distracted, making them ideal for tasks that require consistent accuracy. For more information, please see the BCS Foundation Certificate In Artificial Intelligence Study Guide or the resources listed above.

Search results: BCS Foundation Certificate in Artificial Intelligence Study Guide, Chapter 4: Machine Learning:https://www.bcs.org/category/19669

Question 9

What technique can be adopted when a weak learners hypothesis accuracy is only slightly better than 50%?

Options:

A- Over-fitting

B- Activation.

C- Iteration.

D- Boosting.

Answer:

D

Explanation:

Weak Learner: Colloquially, a model that performs slightly better than a naive model.

More formally, the notion has been generalized to multi-class classification and has a different meaning beyond better than 50 percent accuracy.

For binary classification, it is well known that the exact requirement for weak learners is to be better than random guess. [...] Notice that requiring base learners to be better than random guess is too weak for multi-class problems, yet requiring better than 50% accuracy is too stringent.

--- Page 46,Ensemble Methods, 2012.

It is based on formal computational learning theory that proposes a class of learning methods that possess weakly learnability, meaning that they perform better than random guessing. Weak learnability is proposed as a simplification of the more desirable strong learnability, where a learnable achieved arbitrary good classification accuracy.

A weaker model of learnability, called weak learnability, drops the requirement that the learner be able to achieve arbitrarily high accuracy; a weak learning algorithm needs only output an hypothesis that performs slightly better (by an inverse polynomial) than random guessing.

---The Strength of Weak Learnability, 1990.

It is a useful concept as it is often used to describe the capabilities of contributing members of ensemble learning algorithms. For example, sometimes members of a bootstrap aggregation are referred to as weak learners as opposed to strong, at least in the colloquial meaning of the term.

More specifically, weak learners are the basis for the boosting class of ensemble learning algorithms.

The term boosting refers to a family of algorithms that are able to convert weak learners to strong learners.

https://machinelearningmastery.com/strong-learners-vs-weak-learners-for-ensemble-learning/

The best technique to adopt when a weak learner's hypothesis accuracy is only slightly better than 50% is boosting. Boosting is an ensemble learning technique that combines multiple weak learners (i.e., models with a low accuracy) to create a more powerful model.

Boosting works by iteratively learning a series of weak learners, each of which is slightly better than random guessing. The output of each weak learner is then combined to form a more accurate model. Boosting is a powerful technique that has been proven to improve the accuracy of a wide range of machine learning tasks. For more information, please see the BCS Foundation Certificate In Artificial Intelligence Study Guide or the resources listed above.