



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

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Question 1

Question Type: MultipleChoice

Ensemble learning methods do what with the hypothesis space?

Options:

- A- Select a combination of hypothesis to combine their predictions
- B- Use stochastic gradient descent to optimise a network.
- C- Extract ergodic solutions.
- D- Test multiple hypotheses simultaneously.

Answer:

A

Explanation:

https://link.springer.com/referenceworkentry/10.1007/978-0-387-73003-5_293#:~:text=Definition,and%20combine%20them%20to%20use.

It works by selecting different subsets of the data, or different combinations of the hypothesis, and combining the results of each prediction in order to create a single, more accurate result. This is useful in situations where different hypothesis may be accurate in different parts of the data, or where a single hypothesis may not be accurate in all cases. Ensemble learning is used in a variety of applications, from computer vision to natural language processing.

Question 2

Question Type: MultipleChoice

With a large dataset, limited computational resources or frequent new data to learn from, we can adopt what type of machine learning?

Options:

- A- Batch learning.
- B- Big Data learning.
- C- Patchwork learning.
- D- Online learning.

Answer:

D

Explanation:

Batch learning describes learning from large data sets. All of the data are used to train and test the algorithm. The computer resources required are governed by the volume, velocity, variety and veracity of data. This learning is done offline. Online learning is undertaken with data in small or mini batches. Learning occurs as data become available – an example is a system that learns from stock market prices.

There will be two marks for this question.

Online learning is a type of machine learning that can be used when a large dataset is limited in computational resources or if the data is frequently changing. It allows the system to learn from new data as it is being presented, rather than having to re-train the entire dataset each time new data is added. This makes it more efficient and effective than batch learning, as it only needs to process the new data and not the entire dataset. Online learning is often used in applications such as fraud detection, where new data is constantly being added and needs to be analyzed quickly.

For more information, please refer to the [BCS Foundation Certificate In Artificial Intelligence Study Guide](https://www.bcs.org/upload/pdf/bcs-foundation-certificate-in-artificial-intelligence-study-guide.pdf) (<https://www.bcs.org/upload/pdf/bcs-foundation-certificate-in-artificial-intelligence-study-guide.pdf>) or the [EXIN Artificial Intelligence Foundation Certification](https://www.exin.com/en/exams/artificial-intelligence-foundation) (<https://www.exin.com/en/exams/artificial-intelligence-foundation>).

Question 3

Question Type: MultipleChoice

Tensor flow is a typical open source what?

Options:

- A- Cloud based AI application.
- B- Intelligent robot paradigm.
- C- Machine learning library.
- D- Agent based modelling application

Answer:

C

Explanation:

TensorFlow is an end-to-end open source platform for machine learning. It has a comprehensive, flexible ecosystem of tools, libraries and community resources that lets researchers push the state-of-the-art in ML and developers easily build and deploy ML powered applications.

<https://www.tensorflow.org/#:~:text=TensorFlow%20is%20an%20end%2Dto,and%20deploy%20ML%20powered%20applications.>

TensorFlow is an open source machine learning library created by Google. It is used for dataflow programming and is widely used for a variety of applications, including machine learning and deep learning. TensorFlow enables developers to build, train and deploy machine learning models easily and quickly. It has built-in support for a variety of deep learning frameworks, such as convolutional neural networks, recurrent neural networks, and autoencoders.

For more information, please refer to the [BCS Foundation Certificate In Artificial Intelligence Study Guide](https://www.bcs.org/upload/pdf/bcs-foundation-certificate-in-artificial-intelligence-study-guide.pdf) (<https://www.bcs.org/upload/pdf/bcs-foundation-certificate-in-artificial-intelligence-study-guide.pdf>) or the [EXIN Artificial Intelligence Foundation Certification](https://www.exin.com/en/exams/artificial-intelligence-foundation) (<https://www.exin.com/en/exams/artificial-intelligence-foundation>).

Question 4

Question Type: MultipleChoice

In Machine learning what are a brain's axons called?

Options:

A- Dendrites

B- Edges

C- Tetrahedra.

D- Nodes

Answer:

D

Explanation:

In Machine Learning, the brain's axons are referred to as nodes. Nodes are the components of a neural network that are responsible for processing the input data and generating the output. A node is a mathematical function that takes input data, performs a computation on it, and produces an output. Each node is connected to other nodes in the network via edges, which represent the strength of the connection between the respective nodes. The strength of the connection between two nodes is determined by the weights assigned to each edge. The weights are adjusted during the training process to generate the desired results.

For more information, please refer to the [BCS Foundation Certificate In Artificial Intelligence Study Guide](https://www.bcs.org/upload/pdf/bcs-foundation-certificate-in-artificial-intelligence-study-guide.pdf) (<https://www.bcs.org/upload/pdf/bcs-foundation-certificate-in-artificial-intelligence-study-guide.pdf>) or the [EXIN Artificial Intelligence Foundation Certification](https://www.exin.com/en/exams/artificial-intelligence-foundation) (<https://www.exin.com/en/exams/artificial-intelligence-foundation>).

Question 5

Question Type: MultipleChoice

In the 1800's the development of statistics led to _____ theorem and is used in probabilistic inference. (Select the missing word.)

Options:

- A- Boltzmann's
- B- Kolmogorov's
- C- Bayes'
- D- The central limit

Answer:

C

Explanation:

The development of statistics in the 1800s led to the development of the Bayes' theorem, named after Reverend Thomas Bayes. This theorem is used in probabilistic inference, which is the process of using data to calculate the likelihood of a hypothesis or outcome. The theorem is used for determining the probability of an event occurring given its prior probability, as well as its associated conditions. The Bayes' theorem is also used in a variety of fields, such as machine learning, artificial intelligence, economics, and medical research.

Sources:

BCS Foundation Certificate In Artificial Intelligence Study Guide:<https://www.bcs.org/category/18071>

APMG International:<https://www.apmg-international.com/en/qualifications/qualification-resources/bcs-foundation-certificate-in-artificial-intelligence/>

EXIN:<https://www.exin.com/en/certification/bcs-foundation-certificate-in-artificial-intelligence>

Question 6

Question Type: MultipleChoice

What function is used in a Neural Network?

Options:

A- Linear.

B- Activation.

C- Statistical.

D- Trigonometric.

Answer:

B

Explanation:

Activation Functions

An activation function in a neural network defines how the weighted sum of the input is transformed into an output from a node or nodes in a layer of the network.

<https://machinelearningmastery.com/choose-an-activation-function-for-deep-learning/#:~:text=An%20activation%20function%20in%20a,a%20layer%20of%20the%20network.>

An activation function is a mathematical function used in a neural network to determine the output of a neuron. Activation functions are used to transform the inputs into an output signal and can range from simple linear functions to complex non-linear functions. Activation functions are an important part of neural networks and help the network learn patterns and generalize data. Types of activation functions include sigmoid, ReLU, tanh, and softmax. Reference: BCS Foundation Certificate In Artificial Intelligence Study Guide, <https://bcs.org/certifications/foundation-certificates/artificial-intelligence/>

Question 7

Question Type: MultipleChoice

Splitting data into Training and Test data sets is part of what?

Options:

- A- Machine learning data preparation.
- B- Batch learning.
- C- Machine learning post processing.
- D- High performance computing strategy.

Answer:

A

Explanation:

Splitting data into training and test data sets is an important step in the machine learning data preparation process. This process involves splitting the data into subsets, usually in a 70:30 ratio, to create a training set and a test set. The training set is used to train the machine learning model, while the test set is used to evaluate the model's performance. This process allows for the model to be tested and evaluated on data that it has not seen before, in order to ensure that it is accurate and able to generalize to new data. Reference: BCS Foundation Certificate In Artificial Intelligence Study Guide, <https://bcs.org/certifications/foundation-certificates/artificial-intelligence/>

Question 8

Question Type: MultipleChoice

Narrow or weak AI can be useful to robots.

Which of the following is an example of narrow AI?

Options:

- A- Conscious simul-ation.
- B- Artificial General AI.
- C- Conscious integration.
- D- NLP - Natural Language Processing.

Answer:

D

Explanation:

NLP - Natural Language Processing is an example of narrow AI. It is a type of AI system that is able to understand, interpret, and generate natural language. NLP has become increasingly popular over the past few years, as it has been used to create applications such as chatbots, virtual assistants, and search engines. NLP systems are able to learn language and the context in which it is used, and they are able to understand the nuances of language and its different meanings. Reference: BCS Foundation Certificate In Artificial

Question 9

Question Type: MultipleChoice

Which of the following is an example of fitting a curve to a set of data?

Options:

- A- Python.
- B- Least squares regression.
- C- Bayesian network.
- D- Backward propagation.

Answer:

B

Explanation:

Least Squares Regression is a statistical technique used for fitting a curve to a set of data. It involves minimizing the sum of the squares of the differences between the observed data and the fitted curve. This is done by finding the line of best fit, which is the line that minimizes the sum of the squared residuals. The line of best fit is determined by finding the parameters that give the minimum sum of the squared residuals. This technique is often used in data science and machine learning to create models that can be used to make predictions. Reference: BCS Foundation Certificate In Artificial Intelligence Study Guide, <https://bcs.org/certifications/foundation-certificates/artificial-intelligence/>

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