17277

BRAINWARE UNIVERSITY

Term End Examination 2025-2026
Programme – B.Tech.(CSE)-AIML-2021/B.Tech.(CSE)-AIML-2022/B.Tech.(CSE)-AIML-2023
Course Name – Artificial Intelligence for Real World Application
Course Code - PCC-CSM503
(Semester V)

Full Marks : 60 **Time : 2:30 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question) 1 x 15=15

1. *Choose the correct alternative from the following :*

(i) Identify which instruments are used for perceiving and acting upon the environment?

a) Perceiver
b) Sensors
c) Sensors and Actuators
d) None of these

(ii) Identify where the next state and the action of an agent of the environment is fully obtained based on the current state?

a) Deterministic environment
b) Episodic environment
c) Non-deterministic environment
d) None of these

(iii) Identify which of the following is an application of Artificial Intelligence?

a) It helps to exploit vulnerabilities to secure the firm
b) Easy to create a website
c) Language understanding and problem-solving (Text analytics and NLP)
d) Repairing a computer

(iv) Associate with the appropriate way the value of alpha-beta search gets updated

a) Along the path of search
b) Initial state itself
c) At the end
d) None of the mentioned

(v) Choose which one is the A* heuristic evaluation function

a) f(x)=h(x)+ g(x)
b) f(x)=h(x)
c) f(x)=g(x)
d) None of the mentioned

(vi) Identify which algorithm applied on game tree for making decision of win/lose.

a) DFS/BFS Search
b) Heuristic Search Algorithms
c) Greedy Search Algorithms
d) MIN/MAX Algorithms

(vii) 'John is very intelligent' – relate the method by which this statement can be completely represented

a) FOPL
b) Default logic
c) Fuzzy logic
d) Propositional logic

(viii) Interpret that the statement "The room temperature is hot" here the 'hot' can be represented by

a) Fuzzy set
b) Crisp set
c) Both fuzzy and crisp set
d) None of these

(ix) Choose the statement that defines "Bayesian Network" accurately.

a) A special case of a neural network that makes use of bayes' theorem
b) The network variant of bayes theorem, assuming independent features
c) A probabilistic model of which naive bayes is a special case
d) A network of probabilistic learning functions, connected by bayes' rule

(x) Identify statistical measure that is commonly used to assess the trend in time series data?

a) Mean
b) Median
c) Mode
d) Standard deviation

(xi) Identify transformation that is commonly used to stabilize the variance in time series data?

a) Exponential transformation
b) Log transformation
c) Square root transformation
d) Reciprocal transformation

(xii) Seasonal decomposition of time series can help to identify:

a) Cyclical patterns
b) Trend patterns
c) Noise patterns
d) All of these

(xiii) Determine which of the following is a popular open-source machine learning framework used for implementing regression and clustering methods?

a) TensorFlow
b) SciKit-Learn
c) PyTorch
d) Keras

(xiv) Choose which version of TensorFlow provides a high-level API for building and training machine learning models with ease?

a) TensorFlow 1.x
b) TensorFlow 2.x
c) TensorFlow Lite
d) TensorFlow Extended (TFX)

(xv) Determine what does a loss function measure in the context of regression In TensorFlow

a) The error between predicted and actual values
b) The accuracy of the model
c) The regularization term
d) The gradient of the model

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Write the contribution of AI in Healthcare. (3)
3. Explain Best First Search briefly in AI. (3)
4. Explain the confusion matrix with an example (3)
5. Explain Back propagation algorithm. (3)
6. Assesss How does TensorFlow facilitate implementing regression models in machine learning. (3)

OR

Decide How can TensorFlow be utilized for clustering methods in machine learning (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Explain syllogism in the context of deductive reasoning (5)
8. Explain the role of conditional independence in belief networks. (5)
9. Explain the concept of a Markov blanket in a Bayesian network (5)
10. Conclude the effectiveness of feed-back ANNs. (5)

11. Justify with example that Overfitting is leading to misclassification. (5)
12. Choose the best option between Random Forest and Naive-Baise Classifier. (5)

OR

Evaluate support vector machine (SVM). (5)

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