

**BACHELOR OF COMPUTER APPLICATION
SIXTH SEMESTER
MACHINE LEARNING
BCA-601**

**SET
A**

[USE OMR FOR OBJECTIVE PART]

Full Marks: 70

Duration: 3 hrs.

(Objective)

Time: 30 min.

Marks: 20

1X20=20

Choose the correct answer from the following:

1. Machine Learning is a subset of which of the following.
 - a. Artificial Intelligence
 - b. Operating System
 - c. Database System
 - d. All of these
2. A type of machine learning that uses labelled data and learns with the help of a supervisor or teacher component is called -----
 - a. Reinforcement learning
 - b. Semi-supervised learning
 - c. Unsupervised learning
 - d. None of these.
3. The average square distance from its mean is called -----
 - a. Median
 - b. standard deviation
 - c. Mode
 - d. None of these
4. Raw facts are called -----
 - a. Knowledge
 - b. Information
 - c. Data
 - d. All of these
5. The assumption of testing of data is called a -----
 - a. Model
 - b. hypothesis
 - c. Class
 - d. All of these
6. Predictor variables are -----variable.
 - a. Dependent
 - b. independent
 - c. Normal
 - d. None of these.
7. The difference between the predicted output value and the actual output value of any learning model is called
 - a. variance error
 - b. training error
 - c. bias error
 - d. All of these
8. k-NN is an example of ----- based learning.
 - a. Instance
 - b. Model
 - c. Semi supervised
 - d. None of these

9. Following is a powerful distance matrix used by Geometric model
 - a. Manhattan distance
 - b. Euclidean distance
 - c. Both A & B
 - d. None of these
10. If machine learning model output target variable, then the model is called -----
 - a. Predictive model
 - b. reinforcement learning
 - c. descriptive model
 - d. All of these
11. The first mathematical model of a biological neuron was design by
 - a. McCulloch & Pitts
 - b. John McCarthy
 - c. John Von Neumann
 - d. None of these.
12. In case of biological neuron which of the following parts carries information one neuron to another neuron.
 - a. Dendrites
 - b. Soma
 - c. Axon
 - d. Synapse.
13. Which of the following activation functions is used in deep learning neural network models in hidden layers?
 - a. Softmax Function
 - b. Relu-Rectified Linear Unit Function
 - c. Sigmoidal Function
 - d. All of these.
14. In a neural network all the neurons in a layer are connected to all other neurons in the next layer then it is called -----
 - a. Feed Forward Neural Network
 - b. Feedback Neural Network
 - c. Fully Connected Neural Network
 - d. None of these.
15. The body of the neuron is called -----
 - a. Dendrites
 - b. Soma
 - c. Axon
 - d. Synapse.
16. Model based methods are also known aslearning.
 - a. Lazy
 - b. Eager
 - c. Quick
 - d. All of these
17. Auto encoder is an -----
 - a. Decision Tree
 - b. Artificial neural network
 - c. Support Vector Machine
 - d. All of these
18. Decision tree is a popular ----- learning
 - a. Supervised
 - b. Unsupervised
 - c. Reinforcement
 - d. None of these
19. Entropy is a measure of in the system.
 - a. Success
 - b. Failure
 - c. Uncertainties
 - d. All of these

20. The characteristics of Big-data are

- a. Volume
- c. Variety

- b. Velocity
- d. All of these

(Descriptive)

Time : 2 hrs. 30 min.

Marks : 50

[Answer question no.1 & any four (4) from the rest]

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|---|--|-----------|
| 1 | What is Machine Learning? What is a model? Explain in details machine learning process model. | 3 +2+5=10 |
| 2 | What is semi-supervised learning? List out at least 5 major applications of Machine Learning. | 3 +7=10 |
| 3 | What do you understand by similarity-based learning? Differentiate between instance based learning and model based learning. State the -KNN algorithm. | 2+4+4=10 |
| 4 | Compare biological neuron and artificial neuron with diagram. Explain different the activation functions related to ANN. | 5+5=10 |
| 5 | Discuss different types of Artificial Neural Networks with diagram. | 10 |
| 6 | What is K-mean algorithm? Explain its working principle. Explain DBSCAN algorithm? | 2+3+5=10 |
| 7 | What is an auto encoder? Explain different types of auto encoder. Explain its architecture. | 2+5+3=10 |
| 8 | a). What is entropy? Explain how it is calculated in case of Decision Tree .
b). What SVM? What are the advantages of SVM? | 5 +5=10 |

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