

USN

--	--	--	--	--	--	--	--	--	--

Question Paper Version : A

Fourth Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025
Introduction to AI and ML

Time: 1 hr.]

[Max. Marks: 50

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the fifty questions, each question carries one mark.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, using whiteners on the OMR sheets are strictly prohibited.**

-
1. Which of the following option identify the one which is not a type of learning?
a) Semi unsupervised learning b) Supervised learning
c) Reinforcement learning d) Unsupervised learning
 2. What is the application of machine learning methods to a large database called?
a) Big data computing b) Internet of things
c) Data mining d) Artificial Intelligence
 3. Which of the type of learning in which labeled training data is used?
a) Semi unsupervised learning b) Supervised learning
c) Reinforcement learning d) Unsupervised learning
 4. Which of the following machine learning techniques helps in detecting the outlier and in data?
a) classification b) clustering c) Anomaly detection d) All of these
 5. What is the full form of PAC ____?
a) Probability Approx Cost
b) Probability Approximate Correct
c) Probability Approx Communication
d) Probably Approximate Computation
 6. Which of the difficulties with the K – nearest neighbor algorithm?
a) Curse of dimensionality
b) Calculate the distance of test case from all training cases
c) Both A and B
d) None of these

7. Machine learning has various search and optimization algorithms, Identify among the following which is not evolutionary computation.
- Genetic algorithm
 - Genetic programming
 - Neuroevolution
 - Perceptron
8. Which of the following is not machine learning disciplines?
- Information theory
 - Optimisation and control
 - Physics
 - Neuro statistics
9. What does K stand for in K mean algorithm?
- Number of clusters
 - Number of data
 - Number of attributes
 - Number of iterations
10. Which of the clustering method which takes care of variance in data?
- Decision tree
 - Gaussian mixture model
 - K means
 - All of these
11. What is Data Mining?
- Deleting unnecessary data
 - Sorting data alphabetically
 - Storing data securely
 - Extracting useful patterns (or) information from large data sets
12. Which of the following is not a basis data mining task?
- Spooling
 - Prediction
 - Classification
 - Clustering
13. Which of the following is not an issue in data mining?
- High dimensionality
 - Shortage of data
 - Over fitting
 - Outliers
14. Which of the following is not a motivating factor for the development of data mining tools?
- Data tombs
 - Data rich but information poor situation
 - Data cleaning
 - Dependency on domain experts in expert systems.
15. Which of the following is a subset of data warehouse focused on a specific functional area?
- Data Mart
 - Association rules
 - Flat files
 - Database
16. What is the field of Natural Language Processing?
- Computer Science
 - Artificial Intelligence
 - Linguistics
 - All of these
17. Modern NLP algorithms are based on machine learning, especially statistical machine learning.
- True
 - False
18. CLT stands for _____
- Central Limit Theorem
 - Confidence level and Tolerance
 - Continuous learning Techniques
 - Cross Language Transfer

19. Which of the following is true about Weka?
 a) Weka is a data visualization tool
 b) Weka is a programming language
 c) Weka is a collection of machine learning algorithms
 d) Weka is used only for unsupervised learning
20. Which of the following is a classification algorithm in Weka?
 a) Support vector machine
 b) K – means
 c) Hierarchical clustering
 d) PCA
21. A _____ is a decision support tool that user a tree like graph (or) model of decisions and their possible consequences , including chance event outcomes, resource cost and utility.
 a) Decision tree b) Graphs c) Trees d) Neural Networks
22. Decision Tree is a display of an algorithm.
 a) True b) False
23. What is Decision Tree?
 a) Flow – chart
 b) Structure in which internal node represents test on an attribute
 c) Flow – chart and structure
 d) None of the mentioned.
24. Decision Trees can be used for classification Tasks.
 a) True b) False
25. Choose from the following that are Decision Tree nodes :
 a) Decision Nodes b) End Nodes c) Chance nodes d) All of these
26. Decision Nodes are represented by _____
 a) Disks b) Squares c) Circles d) Triangles
27. Chance Nodes are represented by _____
 a) Disks b) Squares c) Circles d) Triangles
28. End Nodes are represented by _____
 a) Disks b) Squares c) Circles d) Triangles
29. Which of the following is an advantage of decision trees?
 a) Possible scenarios can be added
 b) Use a white box model
 c) Worst, best and expected values can be determined.
 d) All of these
30. Among the following option identify the one which is a type of learning.
 a) Supervised learning b) Reinforcement learning
 c) Unsupervised learning d) All of these
31. Which file format is commonly used to import data into Weka?
 a) PDF b) CSV c) MP4 d) PNG

32. The fundamental unit of network is
 a) brain b) nucleus c) neuron d) axon
33. What is shape of dendrites like?
 a) oval b) round c) trees d) rectangular
34. What is purpose of AXON?
 a) receptors b) transmitter c) transmission d) none of these
35. Where does the chemical reactions take place in neuron?
 a) dendrites b) axon c) synapses d) nucleus
36. What is perceptron?
 a) Single layer feed forward neural network with preprocessing
 b) An auto – associative neural network
 c) A double layer auto – associative neural network
 d) A neural network that contains feedback.
37. Which is true for neural networks?
 a) It has set of nodes and connections
 b) Each node computer its weighted input
 c) Node could be in excited state or non-excited
 d) All of these
38. What is Neuro software?
 a) A software used to analyze neurons b) It is powerful and easy neural network
 c) Designed to aid experts in real world d) It is software used by Neurosurgeon
39. What are the advantages of neural networks over conventional computers?
 i) They have the ability to learn by example
 ii) They are more fault tolerant
 iii) They are more suited for real time operation due to their high 'computational' rates.
 a) (i) and (ii) are true b) (i) and (iii) are true c) only (i) d) All of these
40. _____ training model has only input parameter value
 a) Supervised learning b) Unsupervised learning
 c) Reinforcement learning d) None of these
41. Which of the following is type of unsupervised learning?
 a) Clustering b) Association c) Both a and b d) None of these
42. _____ lies between supervised and unsupervised technique
 a) Clustering b) Association c) Semi supervised d) Reinforcement
43. _____ problem is when the output variable is a category
 a) Clustering b) Reinforcement learning
 c) Semi supervised d) Classification
44. _____ problem is when the output variable is a real value
 a) Regression b) Reinforcement learning
 c) Semi supervised d) Classification

45. _____ is computationally complex
- a) Unsupervised learning
 - b) Reinforcement learning
 - c) Semi supervised
 - d) Classification
46. What is deep learning?
- a) A type of machine learning algorithm
 - b) A branch of artificial intelligence
 - c) A technique for training neural networks
 - d) All of these
47. Which of the following is not a popular deep learning formwork?
- a) Tensor flow
 - b) PyTorch
 - c) Keras
 - d) Scikit - learn
48. What is the purpose of an activation function in a neural network?
- a) It introduces non linearity of the network
 - b) It determines the output of a neuron
 - c) It helps in back propagation
 - d) All of these
49. What is the role of gradient decent in deep learning?
- a) To minimize the loss function
 - b) To find the optimal weights for the neural network
 - c) To update the networks parameters
 - d) All of these
50. What is the vanishing gradient problem?
- a) When the gradients in a deep neural network become extremely small
 - b) When the gradients in a deep neural networks become extremely large
 - c) When the gradients in a shallow neural network become extremely small
 - d) When the gradients in a shallow neural network become extremely large.