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VALUE ADDED COURSES
2021-2022
Department of Computer Science and Engineering
22CSE01- Neural Network

MARK SHEET

Sl. No	Register Number	Student Name	Marks
1	19TD1501	ABARNA .V	92
2	19TD1502	ABDUL RAHMAN .MA	92
3	19TD1503	ABIRAMI .K	96
4	19TD1504	BALAJI .K	96
5	19TD1505	BHARATHKUMARAN .M	92
6	19TD1506	CHARUMATHY .K	92
7	19TD1507	DHAKSHAYINI .S	96
8	19TD1508	DHANUSHKODI. P	96
9	19TD1509	GOUTHAM .G	92
10	19TD1510	GOWTHAM .V	92
11	19TD1511	JEEVANDHAMANI .M	96
12	19TD1512	JOTHI .M	96
13	19TD1513	KARTHI .P	92
14	19TD1514	KAVIARASAN .K	92
15	19TD1515	KARMALAJAY	92
16	19TD1516	KESHOR .M	96
17	19TD1517	MALLIGA .B	96

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18	19TD1518	MANIKANDAN.R	92
19	19TD1519	MARZIA.M	92
20	19TD1520	MUKTHAR SHAKIR. K	96
21	19TD1521	NAMBIRAJU .P	96
22	19TD1522	NAVEENKUMAR .C	92
23	19TD1523	PAVITHRA .P	92
24	19TD1524	PRAISEN .B	96
25	19TD1525	PRAVEENKUMAR .A	96
26	19TD1526	PREETHA .K	92
27	19TD1527	RICHARD ANTONY .C	92
28	19TD1528	MONISHA. S	92
29	19TD1529	SABANA BANU. S	96
30	19TD1530	SAKTHIBALAN .V	96
31	19TD1531	SANDHIYA. A	92
32	19TD1532	SATHISHKUMAR .S	92
33	19TD1533	SENTHAMIZHAN .S	96
34	19TD1534	SHAMILI. B	96
35	19TD1535	SHIFANA FERVEEN .I	92
36	19TD1536	SHIYAMKUMAR .V	92
37	19TD1537	SOWMIYA .J	96
38	19TD1538	SUBASRI .S	96

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39	19TD1539	SWETHA .T	92
40	19TD1540	SYED VAHITH. V	92
41	19TD1541	VIJAY .N	96
42	19TD1542	VINODHINI .B	96
43	19TD1543	VINOTHBABU	92
44	19TD1544	YOGESH .V	92
45	19TD1545	YOVEL MISONRAJ .D	92
46	19TDL011	JAFFERSET.S	92

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VALUE ADDED COURSES
2022-2023
Department of Computer science and Engineering
22CSE01- Neural Network

NAME:
CLASS:
DATE:

1. What is an Neural Network (NN)?

   a) A computational model inspired by the human brain

   b) A machine learning algorithm used for image processing

   c) A statistical analysis technique for data clustering

   d) A programming language for neural network implementation

   Answer: a) A computational model inspired by the human brain

2. What is the basic building block of an Artificial Neural Network?

   a) Neuron

   b) Activation function

   c) Gradient descent

   d) Loss function

   Answer: a) Neuron

3. Which of the following activation functions is commonly used in NNs?

   a) ReLU (Rectified Linear Unit)

   b) Sigmoid

   c) Tanh (Hyperbolic Tangent)

   d) All of the above

   Answer: d) All of the above

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4. What is the purpose of the activation function in an NN?

a) It determines the output of a neuron

b) It introduces non-linearity to the network

c) It enables the network to learn complex patterns

d) All of the above

Answer: d) All of the above

5. What is the function of the input layer in an NN?

a) It receives input data and passes it to the hidden layers

b) It performs mathematical computations on the input data

c) It stores the trained weights and biases of the network

d) None of the above

Answer: a) It receives input data and passes it to the hidden layers

6. Which layer of an NN is responsible for making predictions or producing the final output?

a) Input layer

b) Hidden layer

c) Output layer

d) All layers contribute equally

Answer: c) Output layer

7. What is the purpose of the backpropagation algorithm in NN training?

a) To update the weights and biases based on the prediction error

b) To initialize the weights and biases of the network

c) To determine the number of hidden layers and neurons

d) None of the above

Answer: a) To update the weights and biases based on the prediction error

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8. Which of the following is a common loss function used in NNs for binary classification?

a) Mean Absolute Error (MAE)

b) Mean Squared Error (MSE)

c) Binary Cross-Entropy

d) Categorical Cross-Entropy

Answer: c) Binary Cross-Entropy

9. What is the purpose of the forward pass in NN training?

a) To compute the predicted output based on the current weights and biases

b) To adjust the weights and biases using gradient descent

c) To identify misclassified samples and update the model

d) None of the above

Answer: a) To compute the predicted output based on the current weights and biases

10. What is the primary goal of training an NN?

a) To minimize the prediction error on the training data

b) To maximize the number of neurons in the hidden layers

c) To achieve 100% accuracy on the test data

d) None of the above

Answer: a) To minimize the prediction error on the training data

11. Which of the following is a common optimization algorithm used in NN training?

a) Gradient Descent

b) Stochastic Gradient Descent (SGD)

c) Adam

d) All of the above

Answer: d) All of the above

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12. What is the purpose of regularization in NN training?

a) To prevent overfitting by adding a penalty term to the loss function

b) To increase the model's capacity for learning complex patterns

c) To speed up the training process by adjusting the learning rate

d) None of the above

Answer: a) To prevent overfitting by adding a penalty term to the loss function

13. What is the vanishing gradient problem in NNs?

a) When the gradients become extremely small during backpropagation

b) When the gradients become extremely large during backpropagation

c) When the weights and biases are initialized randomly

d) None of the above

Answer: a) When the gradients become extremely small during backpropagation

14. Which type of NN architecture is used for processing sequential data?

a) Recurrent Neural Network (RNN)

b) Convolutional Neural Network (CNN)

c) Multilayer Perceptron (MLP)

d) Radial Basis Function Network (RBFN)

Answer: a) Recurrent Neural Network (RNN)

15. What is the purpose of dropout regularization in NN training?

a) To randomly disable neurons during training to prevent overfitting

b) To increase the learning rate for faster convergence

c) To add additional layers to the network for increased capacity

d) None of the above

Answer: a) To randomly disable neurons during training to prevent overfitting

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16. Which of the following is an advantage of using NNs for pattern recognition?

a) Ability to learn from large amounts of data

b) Robustness to noise and variations in input

c) Scalability to handle complex tasks

d) All of the above

Answer: d) All of the above

17. What is the purpose of cross-validation in NN training?

a) To evaluate the generalization performance of the model

b) To split the data into training and test sets

c) To perform hyperparameter tuning

d) None of the above

Answer: a) To evaluate the generalization performance of the model

18. Which type of NN architecture is commonly used for image classification tasks?

a) Convolutional Neural Network (CNN)

b) Recurrent Neural Network (RNN)

c) Radial Basis Function Network (RBFN)

d) Multilayer Perceptron (MLP)

Answer: a) Convolutional Neural Network (CNN)

19. What is the purpose of weight initialization in NN training?

a) To set the initial values of the weights and biases in the network

b) To adjust the learning rate during training

c) To compute the gradient of the loss function

d) None JKGUY of the above

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Answer: a) To set the initial values of the weights and biases in the network

20. Which activation function is commonly used in the output layer for binary classification in NNs?

a) Sigmoid

b) ReLU (Rectified Linear Unit)

c) Tanh (Hyperbolic Tangent)

d) Softmax

Answer: a) Sigmoid

21. What is the purpose of learning rate scheduling in NN training?

a) To adjust the learning rate during training for better convergence

b) To increase the number of epochs for longer training

c) To shuffle the training data between epochs

d) None of the above

Answer: a) To adjust the learning rate during training for better convergence

22. Which of the following techniques can be used to prevent overfitting in NN training?

a) Dropout regularization

b) L1 and L2 regularization

c) Early stopping

d) All of the above

Answer: d) All of the above

23. What is the purpose of the bias term in an NN?

a) To provide a threshold for neuron activation

b) To add an additional feature to the input data

c) To prevent overfitting by adjusting the learning rate

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d) None of the above

Answer: a) To provide a threshold for neuron activation

24. Which type of NN architecture is commonly used for reinforcement learning tasks?

a) Deep Q-Network (DQN)

b) Generative Adversarial Network (GAN)

c) BoltzmNN Machine

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Answer: a) Deep Q-Network (DQN)

25. What is the purpose of momentum in the optimization algorithm used for NN training?

a) To accelerate the convergence of the algorithm

b) To prevent overfitting by regularizing the model

c) To adjust the learning rate during training

d) None of the above

Answer: a) To accelerate the convergence of the algorithm

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VALUE ADDED COURSES
2022-2023
Department of Computer science Engineering
22CSE01- Neural Network

NAME: BALAJI.K
CLASS: IV / CSE
DATE: 20/08/2022

24/25 · 96-1.

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d) None of the above

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b) To increase the learning rate for faster convergence

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c) Early stopping

d) All of the above

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Certificate of Completion

2022-2023

This is to certify that Mr/Ms .....YOGESH.N.....

Year...IV..... Department.....CSE..... has successfully Completed the Value added course.

COURSE TITLE: ....NEURAL...NETWORK..... SCORE: .....92.....

COURSE DURATION: ...9.1.8.1.2022..to...18.1.8.1.2022....

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J. Lal.

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2022-2023
Department of Computer Science and Engineering
22CSE02- Machine Learning

MARK SHEET

Sl. No	Register Number	Student Name	Marks
1.	20TD0902	ARAVIND. V	92
2.	20TD0903	ASRAF ALI. A	92
3.	20TD0904	BHARATHI. S	96
4.	20TD0905	BHUVANESWARAN. U	96
5.	20TD0906	DINESH KUMAR. T	92
6.	20TD0907	FAHMETHA. J	92
7.	20TD0908	FROSE. S	96
8.	20TD0909	GNANAMOORTHI. E	96
9.	20TD0910	HEMALAKSHMI. J	92
10.	20TD0911	JASMEEN. O	92
11.	20TD0912	JAYASUDHA. S	96
12.	20TD0913	KARTHIKA. K	96
13.	20TD0914	KAVIARASAN. S	92
14.	20TD0915	KAVIYA. K	92
15.	20TD0916	MALAVIKA. K	92

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16.	20TD0917	MARIMUTHU. N	96
17.	20TD0918	MERVIN IMMANUVEL. S	96
18.	20TD0919	NATRAJAN. R	92
19.	20TD0920	PARKAVI. S	92
20.	20TD0922	RANJITH. A	96
21.	20TD0923	SATCHIDHANANDHAM. A	96
22.	20TD0924	SNEGA. G	92
23.	20TD0925	VIJAYA LAKSHMI. L	92
24.	20TD0926	VISHNU PRIYA. V	96
25.	20TD0927	YASMIN. A	96
26.	20TDL047	MOHANRAJ. D	92
27.	20TDL048	OVIYA P	92
28.	20TDL049	PATCHAIAPPAN. M	92
29.	20TDL050	PAVITHRA P	96
30.	20TDL051	REENA KUMARI. J	96

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2022-2023

Department of Computer science and Engineering

22CSE02- Machine Learning

NAME:

CLASS:

DATE:

1. Which of the following is a type of supervised learning?
   a) Clustering
   b) Classification
   c) Association
   d) Dimensionality Reduction

   Answer: b) Classification

2. What is overfitting in machine learning?
   a) When a model performs well on training data but poorly on test data
   b) When a model performs poorly on training data but well on test data
   c) When a model performs equally well on both training and test data
   d) When a model cannot learn from the data

   Answer: a) When a model performs well on training data but poorly on test data

3. Which of the following is used to split data into training and test sets in Python?
   a) train_test_split from numpy
   b) train_test_split from pandas
   c) train_test_split from scikit-learn
   d) train_test_split from tensorflow

   Answer: c) train_test_split from scikit-learn

4. Which algorithm is known as the "lazy learner"?
   a) Decision Trees
   b) k-Nearest Neighbors

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c) Support Vector Machines

d) Naive Bayes

Answer: b) k-Nearest Neighbors

5. What is the main purpose of Principal Component Analysis (PCA)?

a) To classify data

b) To cluster data

c) To reduce dimensionality

d) To increase dimensionality

Answer: c) To reduce dimensionality

6. Which evaluation metric is appropriate for regression problems?

a) Accuracy

b) Precision

c) Recall

d) Mean Squared Error

Answer: d) Mean Squared Error

7. In the context of neural networks, what does "epoch" mean?

a) One complete forward and backward pass of all training examples

b) A single update of weights

c) A subset of the data

d) A specific layer in the network

Answer: a) One complete forward and backward pass of all training examples

8. Which of the following is a common activation function in neural networks?

a) Sigmoid

b) ReLU

c) Tanh

d) All of the above

Answer: d) All of the above

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9. What is a confusion matrix used for?
   a) To summarize the performance of a classification algorithm
   b) To visualize the clustering of data
   c) To optimize the hyperparameters
   d) To reduce the dimensionality of data

   Answer: a) To summarize the performance of a classification algorithm

10. Which of the following is a method to prevent overfitting in neural networks?
    a) Increasing the number of layers
    b) Decreasing the learning rate
    c) Dropout
    d) Using more epochs

    Answer: c) Dropout

11. What is the purpose of a validation set in machine learning?
    a) To train the model
    b) To test the model
    c) To tune the hyperparameters
    d) To visualize the data

    Answer: c) To tune the hyperparameters

12. What does LSTM stand for in the context of neural networks?
    a) Long Short-Term Memory
    b) Linear State Transition Model
    c) Large Scale Training Method
    d) Latent State Transfer Mechanism

    Answer: a) Long Short-Term Memory

13. Which technique is used for converting text data into numerical data for machine learning?
    a) One-hot encoding
    b) Bag of Words

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c) TF-IDF

d) All of the above

Answer: d) All of the above

14. Which algorithm is used for clustering?

a) K-Means

b) Linear Regression

c) Logistic Regression

d) Decision Trees

Answer: a) K-Means

15. Which of the following describes the bias-variance tradeoff?

a) High bias and low variance lead to overfitting

b) High bias and high variance lead to underfitting

c) Low bias and high variance lead to overfitting

d) Low bias and low variance lead to underfitting

Answer: c) Low bias and high variance lead to overfitting

16. Which technique is used to handle missing data in a dataset?

a) Dropping missing values

b) Imputing missing values

c) Using algorithms that support missing values

d) All of the above

Answer: d) All of the above

17. What is the main idea behind ensemble methods?

a) To use multiple learning algorithms to obtain better predictive performance

b) To reduce the size of the dataset

c) To increase the number of features

d) To simplify the model

Answer: a) To use multiple learning algorithms to obtain better predictive Performance

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18. Which of the following is a common ensemble learning method?

a) Random Forest

b) SVM

c) Linear Regression

d) KNN

Answer: a) Random Forest

19. What is feature scaling?

a) Adding more features to the dataset

b) Removing irrelevant features

c) Normalizing the range of independent variables

d) Combining multiple features into one

Answer: c) Normalizing the range of independent variables

20. Which of the following is a hyperparameter in a machine learning model?

a) Weight of a neural network

b) Bias of a neural network

c) Learning rate

d) Output of a model

Answer: c) Learning rate

21. What does "unsupervised learning" mean?

a) Learning from labeled data

b) Learning from unlabeled data

c) Learning with human supervision

d) Learning without using any data

Answer: b) Learning from unlabeled data

22. Which of the following is an unsupervised learning algorithm?

a) Linear Regression

b) K-Means

c) Logistic Regression

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d) Naive Bayes

Answer: b) K-Means

23. What is the purpose of cross-validation in machine learning?

a) To estimate the performance of the model on new data

b) To train the model

c) To visualize the model

d) To reduce the dimensionality of the data

Answer: a) To estimate the performance of the model on new data

24. Which of the following is a loss function used in regression tasks?

a) Cross-Entropy Loss

b) Hinge Loss

c) Mean Squared Error

d) Binary Cross-Entropy

Answer: c) Mean Squared Error

25. In reinforcement learning, what is a "reward"?

a) The feedback given to the agent to indicate how well it is performing

b) The final goal of the learning task

c) The policy that the agent follows

d) The environment in which the agent operates

Answer: a) The feedback given to the agent to indicate how well it is performing

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VALUE ADDED COURSES
2022-2023

Department of Computer science Engineering

22CSE02- Machine Learning

NAME: ARAVIND.V
CLASS: III / CSE
DATE: 20/08/2022

23/25 92%

1. Which of the following is a type of supervised learning?
   a) Clustering
   b) Classification
   c) Association
   d) Dimensionality Reduction

2. What is overfitting in machine learning?
   a) When a model performs well on training data but poorly on test data
   b) When a model performs poorly on training data but well on test data
   c) When a model performs equally well on both training and test data
   d) When a model cannot learn from the data

3. Which of the following is used to split data into training and test sets in Python?
   a) train_test_split from numpy
   b) train_test_split from pandas
   c) train_test_split from scikit-learn
   d) train_test_split from tensorflow

4. Which algorithm is known as the "lazy learner"?
   a) Decision Trees
   b) k-Nearest Neighbors
   c) Support Vector Machines
   d) Naive Bayes

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5. What is the main purpose of Principal Component Analysis (PCA)?
   a) To classify data
   b) To cluster data
   c) To reduce dimensionality
   d) To increase dimensionality

6. Which evaluation metric is appropriate for regression problems?
   a) Accuracy
   b) Precision
   c) Recall
   d) Mean Squared Error

7. In the context of neural networks, what does "epoch" mean?
   a) One complete forward and backward pass of all training examples
   b) A single update of weights
   c) A subset of the data
   d) A specific layer in the network

8. Which of the following is a common activation function in neural networks?
   a) Sigmoid
   b) ReLU
   c) Tanh
   d) All of the above

9. What is a confusion matrix used for?
   a) To summarize the performance of a classification algorithm
   b) To visualize the clustering of data
   c) To optimize the hyperparameters
   d) To reduce the dimensionality of data

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10. Which of the following is a method to prevent overfitting in neural networks?
    a) Increasing the number of layers
    b) Decreasing the learning rate
    c) Dropout
    d) Using more epochs

11. What is the purpose of a validation set in machine learning?
    a) To train the model
    b) To test the model
    c) To tune the hyperparameters
    d) To visualize the data

12. What does LSTM stand for in the context of neural networks?
    a) Long Short-Term Memory
    b) Linear State Transition Model
    c) Large Scale Training Method
    d) Latent State Transfer Mechanism

13. Which technique is used for converting text data into numerical data for machine learning?
    a) One-hot encoding
    b) Bag of Words
    c) TF-IDF
    d) All of the above

14. Which algorithm is used for clustering?
    a) K-Means
    b) Linear Regression
    c) Logistic Regression
    d) Decision Trees

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Certificate of Completion

2022-2023

This is to certify that Mr/Ms .....RANJITH...A.....

Year...III..... Department.....CSE..... has successfully Completed the Value added course.

COURSE TITLE: ...MACHINE...LEARNING..... SCORE: .....96.....

COURSE DURATION: ...9.1.8.122.to...13.1.8.122.....

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2022-2023
Department of Computer science and Engineering
22CSE03- Graph Theory

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Sl. No	Register Number	Student Name	Marks
1.	20TC0704	AYISHA BEEVI.H	92
2.	21TD0701	AMEERA.A	92
3.	21TD0702	ARUN M	96
4.	21TD0703	BASITH RUBANI	96
5.	21TD0704	DEVANATHAN.R	92
6.	21TD0705	DHINESH KUMAR.R	92
7.	21TD0706	FELIX	96
8.	21TD0707	HARINI .D	96
9.	21TD0708	HARISH.T	92
10.	21TD0709	JABEEN.R	92
11.	21TD0710	JANA. A	96
12.	21TD0711	JEROMELUCIAN .C	96
13.	21TD0712	KALIMULLAHKHAN.D	92
14.	21TD0713	KISHORE.R	92
15.	21TD0714	KUMARAN.K	92

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16.	21TD0715	LATHA.S	96
17.	21TD0716	MARY JENIFER M.B	96
18.	21TD0717	MOHAMMED ALZUBAIRE.M	92
19.	21TD0718	MOHANRAJ .M	92
20.	21TD0719	MUHAMMED ASHRAR .AM	96
21.	21TD0720	NANDHINI.S	96
22.	21TD0721	PRAVEENA.M	92
23.	21TD0722	PREMKUMAR.R	92
24.	21TD0723	RAAFIYA TABASSUM.Z	96
25.	21TD0724	RAGAVI.R	96
26.	21TD0725	ROGAN.M	92
27.	21TD0726	SANTHOSH.S	92
28.	21TD0727	SHARON SAJI GEORGE	92
29.	21TD0728	SHIFA JASMINE.S	96
30.	21TD0729	SOBANA.R	96
31.	21TD0730	SRIDHAR.A	92
32.	21TD0731	SUBASH.M	92
33.	21TD0732	SUKESH.M	96
34.	21TD0733	THIRUVALLURU SUJITH	96

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36.	21TD0735	VIJI.B	92
37.	21TD0736	VISHNU.R	96
38.	21TDL042	DHIVAGAR.V	96
39.	21TDL043	INMUL HASSAN.F	92
40.	21TDL044	MOHAMMED RILAN.J	92
41.	21TDL045	MOULEESWARAN.A	96

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VALUE ADDED COURSES

2022-2023

Department of Computer science and Engineering

22CSE03- Graph Theory

NAME:

CLASS:

DATE:

1. What is a graph in graph theory?
   a) A set of points
   b) A set of lines
   c) A set of vertices and edges
   d) A set of equations

   Answer: c) A set of vertices and edges

2. What is the degree of a vertex in a graph?
   a) The number of edges connected to the vertex
   b) The number of vertices in the graph
   c) The total number of edges in the graph
   d) The number of edges in the longest path

   Answer: a) The number of edges connected to the vertex

3. Which of the following represents a complete graph?

a) A graph where every vertex is connected to every other vertex
b) A graph with no edges
c) A graph with no vertices
d) A graph with a single cycle

Answer: a) A graph where every vertex is connected to every other vertex

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4. What is a path in a graph?

a) A sequence of vertices connected by edges

b) A set of disconnected vertices

c) A single vertex

d) A set of edges with no vertices

Answer: a) A sequence of vertices connected by edges

5. What is a cycle in a graph?

a) A path that starts and ends at the same vertex

b) A set of vertices with no edges

c) A graph with exactly two vertices

d) A graph with no edges

Answer: a) A path that starts and ends at the same vertex

6. Which of the following is a tree?

a) A connected acyclic graph

b) A graph with cycles

c) A disconnected graph

d) A graph with exactly two cycles

Answer: a) A connected acyclic graph

7. What is the chromatic number of a graph?

a) The minimum number of colors needed to color the vertices so that no two adjacent vertices share the same color

b) The maximum number of colors used in any proper coloring of the graph

c) The number of vertices in the graph

d) The number of edges in the graph

Answer: a) The minimum number of colors needed to color the vertices so that no two adjacent vertices share the same color

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8. What is a bipartite graph?

   a) A graph whose vertices can be divided into two disjoint sets such that no two vertices within the same set are adjacent

   b) A graph with two vertices

   c) A graph with two edges

   d) A graph with two cycles

   Answer: a) A graph whose vertices can be divided into two disjoint sets such that no two vertices within the same set are adjacent

9. Which algorithm is used to find the shortest path in a graph?

   a) Dijkstra's algorithm

   b) Prim's algorithm

   c) Kruskal's algorithm

   d) Floyd-Warshall algorithm

   Answer: a) Dijkstra's algorithm

10. What is an Eulerian path?

    a) A path that visits every edge of a graph exactly once

    b) A path that visits every vertex of a graph exactly once

    c) A path that visits every vertex and edge of a graph exactly once

    d) A path that visits each vertex at least once

    Answer: a) A path that visits every edge of a graph exactly once

11. Which of the following is a property of a tree?

    a) It has no cycles

    b) It is connected

    c) It has n−1n-1n−1 edges if there are nnn vertices

    d) All of the above

    Answer: d) All of the above

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12. What is a spanning tree of a graph?

a) A subgraph that includes all the vertices and is a tree

b) A subgraph that includes all the edges and is a tree

c) A graph that spans multiple dimensions

d) A graph with cycles

Answer: a) A subgraph that includes all the vertices and is a tree

13. Which of the following algorithms is used to find the minimum spanning tree?

a) Dijkstra's algorithm

b) Prim's algorithm

c) Bellman-Ford algorithm

d) Depth-First Search (DFS)

Answer: b) Prim's algorithm

14. What is the adjacency matrix of a graph?

a) A matrix representing the connection between vertices

b) A list representing the connection between vertices

c) A set of edges in the graph

d) A matrix representing the distances between vertices

Answer: a) A matrix representing the connection between vertices

15. What is a directed graph (digraph)?

a) A graph in which edges have directions

b) A graph with no directions on edges

c) A graph with weighted edges

d) A graph with unweighted edges

Answer: a) A graph in which edges have directions

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16. What is the connectivity of a graph?

a) The minimum number of vertices or edges that need to be removed to disconnect the remaining graph

b) The maximum number of edges that can be added without forming a cycle

c) The number of components in the graph

d) The number of cycles in the graph

Answer: a) The minimum number of vertices or edges that need to be removed to disconnect the remaining graph

17. What is a planar graph?

a) A graph that can be drawn on a plane without any edges crossing

b) A graph with no edges

c) A graph with exactly one cycle

d) A graph with multiple components

Answer: a) A graph that can be drawn on a plane without any edges crossing

18. What is an isomorphic graph?

a) Two graphs that contain the same number of graph vertices connected in the same way

b) Two graphs with different numbers of vertices

c) Two graphs with different structures

d) Two graphs with no common vertices

Answer: a) Two graphs that contain the same number of graph vertices connected in the same way

19. What is a cut vertex in a graph?

a) A vertex whose removal increases the number of connected components

b) A vertex with the highest degree

c) A vertex with no edges

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d) A vertex that is part of a cycle

Answer: a) A vertex whose removal increases the number of connected components

20. What is a Hamiltonian path?

a) A path that visits every vertex of a graph exactly once

b) A path that visits every edge of a graph exactly once

c) A path that visits every vertex at least once

d) A path that visits each vertex and edge of a graph exactly once

Answer: a) A path that visits every vertex of a graph exactly once

21. Which algorithm is used to find the strongly connected components of a directed graph?

a) Kosaraju's algorithm

b) Dijkstra's algorithm

c) Prim's algorithm

d) Kruskal's algorithm

Answer: a) Kosaraju's algorithm

22. What is a weighted graph?

a) A graph where edges have weights associated with them

b) A graph with no weights

c) A graph where vertices have weights associated with them

d) A graph with directed edges

Answer: a) A graph where edges have weights associated with them

23. Which of the following is true about a bipartite graph?

a) It does not contain an odd-length cycle

b) It contains an odd-length cycle

c) It contains no cycles

d) It contains exactly one cycle

Answer: a) It does not contain an odd-length cycle

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24. What is the adjacency list representation of a graph?

a) A list where each vertex has a list of all adjacent vertices

b) A matrix where each element represents the presence or absence of an edge

c) A set of all edges in the graph

d) A matrix where each element represents the weight of the edge

Answer: a) A list where each vertex has a list of all adjacent vertices

25. What is the time complexity of Breadth-First Search (BFS) for a graph with VVV vertices and EEE edges?

a) O(V+E)O(V + E)O(V+E)

b) O(V2)O(V^2)O(V2)

c) O(E2)O(E^2)O(E2)

d) O(VE)O(VE)O(VE)

Answer: a) O(V+E)O(V + E)O(V+E)

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VALUE ADDED COURSES

2022-2023

Department of Computer science Engineering

22CSE03-GRAPH THEORY

NAME: ARUN. M
CLASS: II / CSE
DATE: 20/08/2022

24/25 96%

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d) Depth-First Search (DFS)

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c) A graph with weighted edges

d) A graph with unweighted edges

16. What is the connectivity of a graph?

a) The minimum number of vertices or edges that need to be removed to disconnect the remaining graph

b) The maximum number of edges that can be added without forming a cycle

c) The number of components in the graph

d) The number of cycles in the graph

17. What is a planar graph?

a) A graph that can be drawn on a plane without any edges crossing

b) A graph with no edges

c) A graph with exactly one cycle

d) A graph with multiple components

18. What is an isomorphic graph?

a) Two graphs that contain the same number of graph vertices connected in the same way

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b) Two graphs with different numbers of vertices

c) Two graphs with different structures

d) Two graphs with no common vertices

19. What is a cut vertex in a graph?

a) A vertex whose removal increases the number of connected components

b) A vertex with the highest degree

c) A vertex with no edges

d) A vertex that is part of a cycle

20. What is a Hamiltonian path?

a) A path that visits every vertex of a graph exactly once

b) A path that visits every edge of a graph exactly once

c) A path that visits every vertex at least once

d) A path that visits each vertex and edge of a graph exactly once

21. Which algorithm is used to find the strongly connected components of a directed graph?

a) Kosaraju's algorithm

b) Dijkstra's algorithm

c) Prim's algorithm

d) Kruskal's algorithm

22. What is a weighted graph?

a) A graph where edges have weights associated with them

b) A graph with no weights

c) A graph where vertices have weights associated with them

d) A graph with directed edges

23. Which of the following is true about a bipartite graph?

a) It does not contain an odd-length cycle

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b) It contains an odd-length cycle

c) It contains no cycles

d) It contains exactly one cycle

24. What is the adjacency list representation of a graph?

a) A list where each vertex has a list of all adjacent vertices

b) A matrix where each element represents the presence or absence of an edge

c) A set of all edges in the graph

d) A matrix where each element represents the weight of the edge

25. What is the time complexity of Breadth-First Search (BFS) for a graph with VVV vertices and EEE edges?

a) O(V+E)O(V + E)O(V+E)

b) O(V2)O(V^2)O(V2)

c) O(E2)O(E^2)O(E2)

d) O(VE)O(VE)O(VE)

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