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| **P.V.P Siddhartha Institute of Technology (Autonomous)** | **Signature of Invigilator with date:** | **Marks Obtained:** |
| **Department of Computer Science and Engineering** |
| **Course: B. Tech** | **Year: IV** | **Semester -I** | **Objective-I** |  |  |
| **Regulation: PVP20** | **Maximum Marks: 10M** | **Session: F.N** |
| **A.Y: 2024-25** | **Date:29-07-2024** | **Duration: 20 min** |
| **Subject Code: 20CS4701A** | **Subject Name: Deep Learning** |
| **Registered Number:** | **Name:** |
| **Answer all the Questions. Each Question carries ½ Mark 20×½ M =10M** |
| **S. No** | **Question** | **CO** | **Level** | **Answer** |
| **1.** | **Deep learning is a subset of which of the following?** | **CO1** | **L2** | **B** |
| a) Data Mining | b) Machine Learning |
| c) Data Science | d) Data Learning |
| **2.** | **What is an Epoch in the context of training a Neural Network?** | **CO1** | **L2** | **C** |
| a) The no. of Hidden Layers in the Network |
| b) A measure of the Networks Complexity |
| c) One Complete pass through the entire dataset |
| d) A Specific type of Activation Function |
| **3.** | What is the primary purpose of an Activation Function in a Neural Network? | **CO1** | **L2** | **D** |
| a) To initialize the Network Weights | b) To decide the Learning Rate |
| c) To choose the Number of Hidden  Layers | d) To introduce Non-Linearity into the  Model |
| **4.** | **What is the purpose of the learning rate in the context of deep learning?** | **CO1** | **L2** | **B** |
| a) To adjust the number of layers in the neural network |
| b) To control the speed at which the model learns during training. |
| c) To determine the activation function to be used in the network |
| d) To handle the imbalance in the training dataset |
| **5.** | **During Training, What is the purpose of the Loss unction in a Neural Network?** | **CO1** | **L2** | **A** |
| a) To measure the performance Model |
| b) To Control the Rate of Learning |
| c) To decide the Number of Layers in the Network |
| d) To activate the neurons in the Output Layer |
| **6.** | Which type of deep learning model is used for dimensionality reduction and visualization of high-dimensional data? | **CO1** | **L2** | **B** |
| a) Convolutional Neural Network | b) Autoencoder |
| c) Restricted Boltzmann Machine | d) Artificial Neural Network |
| **7.** | **What is the term for an artificial neural network with multiple hidden layers?** | **CO1** | **L2** | **B** |
| a) Wide Networks | b) Deep Neural Networks |
| c) Shallow Network | d) Feed Forward Neural Network |
| **8.** | Which loss function is commonly used for multi-class classification problems in deep learning? | **CO1** | **L2** | **C** |
| a) Mean Square Error(MSE) | b) Mean Absolute Error(MAE) |
| c) Cross Entropy Loss | d) Huber Loss |

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| **9.** | Which deep learning algorithm is used for learning hierarchical representations of data? | **CO1** | **L2** | **B** |
| a) Autoencoder | b) Restricted Boltzmann Machine |
| c) Long Short Term Memory | d) Multi-Layer Perceptron |
| **10.** | What is Variational Autoencoders (VAE)? | **CO1** | **L2** | **D** |
| a) A data encryption tool | b) A model for visual data only |
| c) A type of autoencoder used for data compression |
| d) A generative model that uses probabilistic encoders and decoders |
| **11.** | ReLU Activation Function Formula is \_\_\_\_\_\_\_\_\_ | **CO1** | **L2** | **A** |
| a) f(x) = max(0,x) | b) f(x) = max(x, y) |
| c) f(x) = max(1, 0) | d) f(x) = max(0,1) |
| **12.** | **What is the primary role of the 'discriminator' in a GAN?** | **CO1** | **L2** | **B** |
| a) To generate new data  | b) To classify data as real or generated |
| c) To Store Data | d) To Optimize network Speed |
| **13.** | **Which deep learning model is used for generating realistic images from random noise?** | **CO1** | **L2** | **C** |
| a) Autoencoder | b) Variational Autoencoder |
| c) Generative Adversarial Network(GAN) | d) Boltzmann Machine |
| **14.** | **The measure of difference between Two Probability Distributions is known as\_\_\_\_\_** | **CO1** | **L2** | **C** |
| A) Probability Difference  | b) Cost  | c) KL Divergence | d) Error |
| **15.** | **What is the primary purpose of a Convolutional Neural Network (CNN)?** | **CO1** | **L2** | **C** |
| a) Object Detection | b) Text Generation |
| c) Image Classification | d) Reinforcement Learning |
| **16.** | **What is the purpose of the “Kernel/ Filter “in a convolution Layer?** | **CO1** | **L2** | **B** |
| a) To determine the no. of Neurons in the layer |
| b) To extract local features from the input data |
| c) To specify the size of the feature maps |
| d) To determine the Final Output. |
| **17.** | **Which layer type is typically used to extract local features in a CNN?** | **CO1** | **L2** | **A** |
| a) Convolution Layer  | b) Pooling Layer |
| c) Fully Connected Layer | d) Activation Function |
| **18.** | **Which layer type is responsible for spatial down sampling in a CNN?** | **CO1** | **L2** | **B** |
| a) Convolution Layer  | b) Pooling Layer |
| c) Fully Connected Layer | d) Activation Function |
| **19.** | **What is the Formula for Padding Calculation?**  | **CO1** | **L2** | **D** |
| * a) Feature size = ((Image size - 2 \*Padding size + Kernel size) / Stride)+1
 |
| * b) Feature size = ((Image size + 2 +Padding size \* Kernel size) / Stride)+1
 |
| * c) Feature size = ((Image size + 2 \* Kernel size− Padding size) / Stride)+1
 |
| * d) Feature size = ((Image size + 2 \* Padding size − Kernel size) / Stride)+1
 |
| **20.** | **The input image has been converted into a matrix of size 28 X 28 and a kernel/filter of size 7 X 7 with a stride of 1. What will be the size of the convoluted matrix?** | **CO1** | **L2** | **C** |
| a) 20x20 | b) 21x21 | c) 22x22 | d) 25x25 |