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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-II** | | | |  | | |  | |
| **Regulation: PVP20** | | | | | **Maximum Marks: 10M** | | | | | **Session: F.N** | | | |
| **A.Y: 2024-25** | | | | | **Date:30-09-2024** | | | | | **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.** | **Which layer is typically used to address overfitting in a CNN?** | | | | | | | | | | | | | | **CO1** | | **L2** |  |
| a) Convolutional layer | | | | | b) Pooling layer | | | | | | | | |
| c) Dropout layer | | | | | d) Fully connected layer | | | | | | | | |
| **2.** | What is the function of the fully connected layers at the end of a CNN? | | | | | | | | | | | | | | **CO1** | | **L2** |  |
| a) Feature extraction | | | | | b) Reduce dimensionality | | | | | | | | |
| c) Global pooling | | | | | d) Classification | | | | | | | | |
| **3.** | In a CNN, what does the term "stride" refer to? | | | | | | | | | | | | | | **CO1** | | **L2** |  |
| a) Learning rate | | | | | | b) The size of the filter | | | | | | | |
| c) The step size for sliding the filter over the input | | | | | | d) Number of filters | | | | | | | |
| **4.** | **What is the primary purpose of convolutional layers in a CNN?** | | | | | | | | | | | | | | **CO1** | | **L2** |  |
| a) Activation | b) Pooling | | | | c) Feature Extraction | | | | | d) Fully Connected Layer | | | |
| **5.** | **What is the purpose of the activation function in a CNN?** | | | | | | | | | | | | | | **CO1** | | **L2** |  |
| a) Normalize the input data | | | | | | | b) Introduce non-linearity | | | | | | |
| c) Reduce the dimensionality of the data | | | | | | | d) Summarize the features | | | | | | |
| **6.** | **Which layer in a CNN is responsible for reducing the spatial dimensions of the input volume?** | | | | | | | | | | | | | | **CO1** | | **L2** |  |
| a) Convolution Layer | | | | | b) Activation Layer | | | | | | | | |
| c) Pooling Layer | | | | | d) Fully Connected Layer | | | | | | | | |
| **7.** | **Which layer type is responsible for backpropagating the gradients and updating the network's parameters in** | | | | | | | | | | | | | | **CO1** | | **L2** |  |
| a) Convolution Layer | | | | | b) Activation Layer | | | | | | | | |
| c) Pooling Layer | | | | | d) Fully Connected Layer | | | | | | | | |
| **8.** | **Which of the following is a potential issue with using RNNs for long sequences?** | | | | | | | | | | | | | | **CO1** | | **L2** |  |
| a) The vanishing gradient problem | | | | | b) The exploding gradient problem | | | | | | | | |
| c) Both a and b | | | | | d) Neither a nor b | | | | | | | | |
| **9.** | **Which component of a sequence-to-sequence model is responsible for transforming the input sequence into a fixed-size context vector?** | | | | | | | | | | | | | | | **CO1** | **L2** |  |
| a) Encoder | | | | | | b) Decoder | | | | | | | | |
| c) Attention mechanism | | | | | | d) Embedding layer | | | | | | | | |
| **10.** | **What is the purpose of the peephole connections in a Long Short-Term Memory (LSTM) network?** | | | | | | | | | | | | | | | **CO1** | **L2** |  |
| a) To allow the cell state to influence the gating mechanisms | | | | | | | | | | | | | | |
| b) To adjust the learning rate during training | | | | | | | | | | | | | | |
| c) To introduce non-linearity to the network | | | | | | | | d) None of the Above | | | | | | |
| **11.** | **Which gate in an LSTM is responsible for deciding what new information to store in the cell state?** | | | | | | | | | | | | | | | **CO1** | **L2** |  |
| a) Input Gate | | | | | | b) Forget Gate | | | | | | | | |
| c) Output Gate | | | | | | d) Update Gate | | | | | | | | |
| **12.** | **What is the main purpose of the hidden state in a recurrent neural network?** | | | | | | | | | | | | | | | **CO1** | **L2** |  |
| a) Stores long-term memory | | | | | | b) Output of the network | | | | | | | | |
| c) Captures short-term dependencies in the input sequence | | | | | | d) It is used for updating the parameters of the network | | | | | | | | |
| **13.** | **What is the spectrogram commonly used for in the context of speech recognition?** | | | | | | | | | | | | | | | **CO1** | **L2** |  |
| a) Feature extraction from audio signals | | | | | | b) Text-to-speech synthesis | | | | | | | | |
| c) Speaker identification | | | | | | d) Noise reduction | | | | | | | | |
| **14.** | **Which activation function is commonly used in the hidden layers of convolutional neural networks?** | | | | | | | | | | | | | | | **CO1** | **L2** |  |
| a) Sigmoid | | b) Linear | | | | c) ReLu | | | | | d) Tanh | | | |
| **15.** | **What is the purpose of data augmentation in computer vision tasks?** | | | | | | | | | | | | | | | **CO1** | **L2** |  |
| a) To reduce the size of the dataset. | | | | | | b) To increase the computational complexity. | | | | | | | | |
| c) To artificially increase the diversity of the training dataset. | | | | | | d) To decrease the generalization capability of the model. | | | | | | | | |
| **16.** | **What is the primary advantage of using convolutional neural networks in computer vision tasks?** | | | | | | | | | | | | | | | **CO1** | **L2** |  |
| a) Better handling of sequential data. | | | | | | | | | | | | | | |
| b) Ability to capture long-term dependencies. | | | | | | | | | | | | | | |
| c) Parameter sharing and translation invariance. | | | | | | | | | | | | | | |
| d) Improved interpretability of features. | | | | | | | | | | | | | | |
| **17.** | **What type of neural network architecture is commonly used for speech recognition tasks?** | | | | | | | | | | | | | | | **CO1** | **L2** |  |
| a) Recurrent Neural Network | | | | | | b) Convolutional Neural Network | | | | | | | | |
| c) Long Short-Term Memory | | | | | | d) Transformer | | | | | | | | |
| **18.** | **Which of the following is not a task in natural language processing?** | | | | | | | | | | | | | | | **CO1** | **L2** |  |
| a) Sentiment analysis | | | | | | b) Speech recognition | | | | | | | | |
| c) Image classification | | | | | | d) Named entity recognition | | | | | | | | |
| **19.** | **What is Machine Translation?** | | | | | | | | | | | | | | | **CO1** | **L2** |  |
| * a) Converts one human language to another | | | | | | | | | | | | | | |
| * b) Converts human language to machine language | | | | | | | | | | | | | | |
| * c) Converts any human language to English | | | | | | | | | | | | | | |
| * d) Converts Machine language to human language | | | | | | | | | | | | | | |
| **20.** | **The signal that is used in speech recognition is known as?** | | | | | | | | | | | | | | | **CO1** | **L2** |  |
| * a) Acoustic signal | | | * b) Electric signal | | | * c) Electromagnetic signal | | | | | | * d) Radar | | |