Q.21 What role does deep learning play in disease diagnosis? (CO4)

Q.22 How can RNN's be utilized for predicting time series data? (CO3)

Section-D

Note: Long answer questions. Attempt any two question out of three Questions. (2x8=16)

Q.23 What is the architecture of Convolutional Neural Networks (CNNs), and how does it facilitate image processing? (CO2)

Q.24 Explain the vanishing gradient problem in the context of RNNs and how it impacts training. What solutions have been proposed? (CO3)

Q25 Describe the various types of Deep Learning architectures and their specific use cases. (CO1)

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5th Sem. / Artificial Intelligence & Machine Learning
Subject : Deep Learning & Its Applications

Time : 3 Hrs. M.M. : 60

SECTION-A

Note: Multiple Choice Questions. All Questions are compulsory. (6x1=6)

Q.1 Which of the following is a common application of deep learning in finance? (CO4)

a) Supply chain optimization
b) Customer service automation
c) Inventory management
d) Fraud detection

Q.2 What is a key advantage of deep learning over traditional machine learning? (CO1)

a) Requires less data
b) Automatically extracts features from raw data
c) Simpler algorithms
d) No need for hyper parameter tuning

Q.3 What are the main layers typically found in CNN architecture?

a) Input, Convolutional, Fully Connected, Output
b) Input, Regression, Classification
c) Feature extraction, Decision Tree, Output
d) Input, Clustering, Decision Making

Q.4 Which of the following applications can utilize auto encoders? (CO3)

a) Image Denoising
b) Natural Language translation
c) Object detection
d) Decision making systems

Q.5 What is the purpose of the back propagation algorithm in CNN training? (CO2)

a) To perform convolution
b) To update model weights based on loss
c) To flatten the output
d) To enhance the input data

Q.6 Which deep learning architecture is primarily used for image processing? (CO1)

a) Recurrent Neural Networks (RNNs)
b) Fully Connected Neural Networks (DNNs)
c) Convolutional Neural Networks (CNNs)
d) Generative Adversarial Networks (GANs)

Section-B

Note: Objective/Completion type questions. All questions are compulsory. (6x1=6)

Q.7 Define Gated Recurrent Units (GRUs)? (CO3)

Q.8 RCNN are primarily used for _____ detection.(CO2)

Q.9 What process involves delineating the boundaries of objects in an image? (CO4)

Q.10 Which process adjusts the weights of a neural network during training? (CO1)

Q.11 What is the goal of time series prediction? (CO3)

Q.12 Keras is a high-level neural networks API that runs on top of Tensor flow. (True/False) (CO1)

Section-C

Note: Short answer type Question. Attempt any eight questions out of Ten Questions. (8x4=32)

Q.13 What is an RCNN, and how does it differ from traditional CNN's? (CO2)

Q.14 Why ae activation functions important in deep neural networks? (CO1)

Q.15 What are auto encoders and write Their primary applications? (CO3)

Q.16 Explain the terms Pooling, Flattening and Dropout? (CO2)

Q.17 Differentiate between object detection and image classification? (CO4)

Q.18 How to LSTM network address the limittions of traditional RNN's? (CO3)

Q.19 What are the key concepts of deep learning? (CO1)

Q.20 How does the gradient descent approach work in the context of training CNNs? (CO2)