PA-947

[5927]-393

B.E. (Information Technology)
DEEP LEARNING
(2019 Pattern) (Semester - VII) (414443)

Time : 2½ Hours]   *[Max. Marks : 70*

Instructions to the candidates:

1) Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.

2) Neat diagrams must be drawn wherever necessary.

3) Figures to the right indicate full marks.

4) Assume suitable data, if necessary.

Q1) a) Differentiate between feed-forward neural networks and recurrent neural networks. Explain the types of Recurrent Neural Network (RNN). **[9]**

b) Explain how sequence to sequence model works. **[9]**

OR

Q2) a) Describe the general layout of a Long Short-Term Memory Network (LSTM) with suitable diagram. **[9]**

b) What is Recurrent Neural Network (RNN)? State and explain types of RNN in brief. **[9]**

Q3) a) Autoencoders use unsupervised learning approach. Justify the statement. **[9]**

b) Explain the concept of contractive autoencoder and its need. **[8]**

OR

Q4) a) State the applications of Autoencoders. Explain how the dimensionality reduction feature of autoencoder is useful in information retrieval task?**[9]**

b) Explain denoising autoencoders with suitable figure. **[8]**

Q5) a) Why is the network called Greedy Layer Wise Pretraining Network? **[9]**

b) State and Justify Role of Representation Learning. **[9]**

OR

P.T.O.

Q6) a) Explain distributed representation with example. **[9]**

b) Justify when to use domain adaptation and when to use transfer learning. **[9]**

Q7) a) Explain graph convolution approach for social network analysis? Describe RNN based framework for NLP. Write any four applications of NLP. **[9]**

b) What are the application areas of image classification? Explain CNN for image Classification. **[8]**

OR

Q8) a) Explain content based, collaborative and hybrid recommender system with pros and cons. **[9]**

b) Explain basic architecture of Automatic Speech Recognition system. Why RNN is suitable for speech recognition? How bidirectional RNNs are used in automatic speech recognition? **[8]**

ಐಲ ಬಲ