Total No. of Questions : 8]

SEAT No. :

PA-947

[Total No. of Pages : 2

[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

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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]**