Total No. of Questions : 8]

SEAT No. : [ ]

PB-2324

[Total No. of Pages : 2

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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 side indicate full marks.***
4) ***Assume suitable data, if necessary.***

Q1) a) Write a short note on Long Short-Term Memory Networks (LSTM). **[9]**

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

OR

Q2) a) Differentiate between Feed-Forward Neural Networks Vs Recurrent Neural Networks. Explain the types of Recurrent Neural Network (RNN). **[9]**

b) Explain the components of a Long Short-Term Memory Networks (LSTM) and Advantages of LSTM. **[9]**

Q3) a) Explain the architecture of undercomplete autoencoder. What is the difference between undercomplete autoencoder and sparse autoencoder? **[9]**

b) What are Denoising Autoencoders. Why it is used? **[8]**

OR

Q4) a) How do Autoencoders work? What are the applications of autoencoder? **[9]**

b) What is a Bottleneck in autoencoder and why is it used? **[8]**

P.T.O.

Q5) a) What is greedy layerwise pretraining? Explain the approaches. **[9]**

b) Why should one use transfer learning and when? **[9]**

OR

Q6) a) When Vanishing Gradient Problem Occurs? Explain in detail **[9]**

b) Explain distributed representation with example. **[9]**

Q7) a) Explain the traditional approach and deep learning approach for Automatic Speech Recognition. **[8]**

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

OR

Q8) a) Explain the following social network analysis terminologies **[8]**

i) Nodes & Ages ii) Weight

iii) Centrality Measures iv) Network Level Measures

b) How does image classification works? Describe various image classification techniques and enlist the four advantages of using deep learning in image classification. **[9]**

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