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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (Computer Science Engg.) (Sem.-7,8)

**DEEP LEARNING**

Subject Code : BTCS-704-18

M.Code : 90495

Date of Examination : 06-07-22

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

**SECTION-A**

**1. Write briefly :**

- (a) Define the term 'Machine Learning'.
- (b) Differentiate between Underfitting and Overfitting.
- (c) What is the need of regularization?
- (d) Define multi-task learning.
- (e) What are unsupervised features?
- (f) Define Pooling.
- (g) Differentiate between Recurrent and Recursive neural networks.
- (h) What is Sequence modelling?
- (i) How is a Boltzmann machine different from Deep Boltzmann machine?
- (j) Discuss in brief about Sigmoid belief networks.

## SECTION-B

2. Differentiate between supervised and unsupervised learning with the help of an example.
3. Explain about adversarial training and optimization process.
4. What is a convolution operation? Explain about neuroscientific basis for convolutional networks.
5. What are Bidirectional RNNs? What advantage do they hold over Recurrent Neural Networks (RNNs)?
6. Explain in detail about the various problems that may incur in Deep Belief Networks.

## SECTION-C

7. Explain in detail about the various properties of Deep Boltzmann machines.
8. What is data augmentation? What significance does it hold in deep learning techniques?
9. Discuss the problem of vanishing and exploding gradients in deep neural networks.

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**