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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (CSE) (Sem.-7/8)

DEEP LEARNING

Subject Code : BTCS-704-18

M.Code : 90495

Date of Examination : 23-12-22

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 'deep learning'.
- b) Differentiate between bias and variance.
- c) Explain briefly about estimators.
- d) What "is" the advantage associated with using computational graphs?
- e) What is dropout rate?
- f) Define the term padding in convolutional neural networks.
- g) Differentiate between Recursive neural networks and Echo state networks.
- h) What is Sequence modelling?
- i) Explain briefly about a directed generative network?
- j) Discuss in brief about Sigmoid belief networks.

SECTION-B

2. What is an activation function? Explain about various activation functions.
3. Explain in detail about the working of a sequence-to-sequence model.
4. What is a convolution operation? Explain about neuroscientific basis for convolutional networks.
5. What are gradients? How are they useful in finding an optimal value of the parameters?
6. What is an auto-encoder? Explain various components of an auto-encoder along with the properties of auto-encoders.

SECTION-C

7. Explain the working of back propagation algorithm with the help of an example.
8. Why are convolutional neural networks preferred over feed-forward neural networks especially in the case of images? Also explain about the role of 'kernel' and 'stride' in the convolution process.
9. Discuss in detail about various similarities and differences between Deep Belief Networks and Deep Boltzmann machines.

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.