[Nov-23]

GITAM (Deemed to be University)
[19EAI431]

B.Tech. Degree Examination
(Computer Science & Engineering)

VII SEMESTER

DEEP LEARNING

(Effective from the admitted batch 2019–20)

Time: 3 Hours **Max.Marks: 60**

Instructions: All parts of the unit must be answered in one place only.

SECTION-A

1. **Answer all Questions:** **(10x2=20)**

   a) Define gradient descent.
   b) Inspect the impact of output unit on model performance?
   c) List three stages of convolution Network.
   d) Outline primary visual cortex.
   e) Show Deep Neural Networks with an architecture
   f) How do gated RNNs learn to remember and forget information?
   g) Demonstrate pencoder (h | x) and pdecoder (x | h)
   h) How is a Boltzmann machine different from Deep Boltzmann machine?
   i) What is dataset augmentation?
   j) Contrast exploration and exploitation

SECTION-B

Answer any one question from each unit: **(5x8=40)**

UNIT-I

2. Develop a deep feedforward network for a classification problem and explain how do the different layers work in the network.

OR

3. Solve the XOR problem by deep feedforward neural network model? Explain.

UNIT-II

4. Apply different mathematical methods of CNN layers to scale down the size of an input image with example.

OR

5. Can convolution kernels be learned without supervised learning models? Elaborate.

UNIT-III

6. Sketch the diagram of Long Short-Term Memory (LSTM) cell and explain it's working

OR

7. Explain how RNN can be represented as an unfolded Computational Graph.

UNIT-IV

8. Can Under complete Auto Encoder and Decoder Model learn a more powerful non-linear generalization of PCA? Support your statement.

OR

9 Explain in detail about the various problems that may incur in Deep Belief Networks.

UNIT-V

10. Explain how do deep learning techniques influence and shape the advancements in computer vision research and applications.

OR

11. What is generative modelling? Explain in brief about GANs and its applications.