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|  | **VASIREDDY VENKATADRI INSTITUTE OF TECHNOLOGY**  **(AUTONOMOUS)**  **Accredited by NBA (B.Tech program), Approved by AICTE, Permanently Affiliated to JNTUK,NAAC Accredited with ‘A’ Grade, ISO 9001:2015 Certified**  Nambur (V), Pedakakani (M), Guntur (Dt.), Andhra Pradesh – 522 508, [www.vvitguntur.com](http://www.vvitguntur.com) |

**Deep Learning Important Questions**

**Unit-3**

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| **1** | Draw the Architecture of GoogleNet and identify the kernel sizes used in GoogleNet? |
| **2** | Distinguish the features learned by the 1x1 convolutions and the other traditional convolutions of kernel size greater than or equal to 2. |
| **3** | What are skip connections in CNNs? Explain how ResNet has exploited skip connections in reducing Top 5% error in ImageNet classification. |
| **4** | What modifications are necessary to CNNs used for image classification, so that they work well for semantic segmentation also? |
| **5** | What makes U-Net different from regular CNN? Explain in detail. |
|  | **Unit-4** |
| **6** | Define dropout. What are different types of dropouts? Explain how dropout is helpful in the regularization of the neural network model. |
| **7** | Explain about Instance normalization in the context of CNNs. |
| **8** | Define Early Stopping and explain how it prevents the overfitting. |
| **9** | Explain how the Data Augmentation Technique improves the performance of the Model. |
| **10** | Why do we need Transfer Learning? Explain. |
| **11** | Explain about Group normalization in the context of CNNs. |
| **12** | What is normalization? How is it useful in neural network training? |
| **13** | What is the objective of regularization? How the dropout mechanism fulfills that objective?  **Unit-5** |
| **14** | Discuss the process of learning skipgram embeddings. |
| **15** | Draw the architecture of RNN and explain the difficulties in training them. |
| **16** | Distinguish skipgram and CBOW embeddings. How the CBOW embeddings are learned? Explain with relevant example. |
| **17** | How the different memory gates of LSTM helps in addressing the problems faced by RNNs while training? Explain with in detailed architecture diagram of LSTM. |
| **18** | What is word2vec? Why the first layer in a natural language processing neural network has to be an embedding layer? |
| **19** | Explain LSTM working principles along with the all the equations. |
| **20** | Vanishing gradient problem makes it difficult to train RNNs. How the LSTM dealt with that problem? |
| **21** | List the architectures capable of learning from sequential data. What makes them different from others? |

\*\*\*\* All the Best \*\*\*\*