1. **What are Vanilla autoencoders**

**Answer:-**

Vanilla autoencoders are a type of neural network that are used to learn the latent representation of data. They are composed of an encoder and a decoder. The encoder takes in the input data and produces a latent representation of the data. The decoder then takes the latent representation and produces the output data.

1. **What are Sparse autoencoders**

**Answer:-**

Sparse autoencoders are a type of autoencoder that are designed to learn sparse latent representations. Sparse latent representations are representations that contain a lot of zeros. This can be helpful for tasks such as dimensionality reduction, where you want to reduce the number of features in the data while preserving as much information as possible.

1. **What are Denoisingautoencoders**

**Answer:-**

Denoising autoencoders are a type of autoencoder that are designed to learn the latent representation of data in the presence of noise. They are trained on data that has been corrupted with noise. This helps the autoencoder to learn to ignore the noise and focus on the underlying structure of the data.

1. **What are Convolutional autoencoders**

**Answer:-**

Convolutional autoencoders are a type of autoencoder that are composed of convolutional layers and pooling layers. Convolutional layers are used to extract features from the input data. Pooling layers are used to reduce the spatial size of the feature maps.

1. **What are Stacked autoencoders**

**Answer:-**

Stacked autoencoders are a type of autoencoder that are composed of multiple autoencoders. Each autoencoder in the stack learns a different latent representation of the data. This can be helpful for tasks such as dimensionality reduction, where you want to reduce the number of features in the data while preserving as much information as possible.

1. **Explain how to generate sentences using LSTM autoencoders**

**Answer:-**

LSTM autoencoders can be used to generate sentences by first training the autoencoder on a corpus of text. Once the autoencoder is trained, it can be used to generate new sentences by starting with a random latent representation and then decoding the latent representation into a sentence.

1. **Explain Extractive summarization**

**Answer:-**

Extractive summarization is a type of summarization that selects sentences from the input text to create a summary. The sentences that are selected are the ones that are most relevant to the main topic of the text.

1. **Explain Abstractive summarization**

**Answer:-**

Abstractive summarization is a type of summarization that creates a new summary that is different from the input text. The summary is created by paraphrasing the input text and removing unnecessary information.

1. **Explain Beam search**

**Answer:-**

Beam search is a technique that is used to generate text. It works by considering multiple possible outputs at each step and then choosing the output that is most likely to be correct.

1. **Explain Length normalization**

**Answer:-**

Length normalization is a technique that is used to normalize the length of the outputs of a language model. This is done by dividing the output by the length of the input.

1. **Explain Coverage normalization**

**Answer:-**

Coverage normalization is a technique that is used to normalize the coverage of the outputs of a language model. This is done by dividing the output by the number of words in the input.

1. **Explain ROUGE metric evaluation**

**Answer:-**

ROUGE (Recall-Oriented Understudy for Gisting Evaluation) is a metric that is used to evaluate the performance of summarization systems. ROUGE measures the similarity between the output of a summarization system and a human-generated summary.