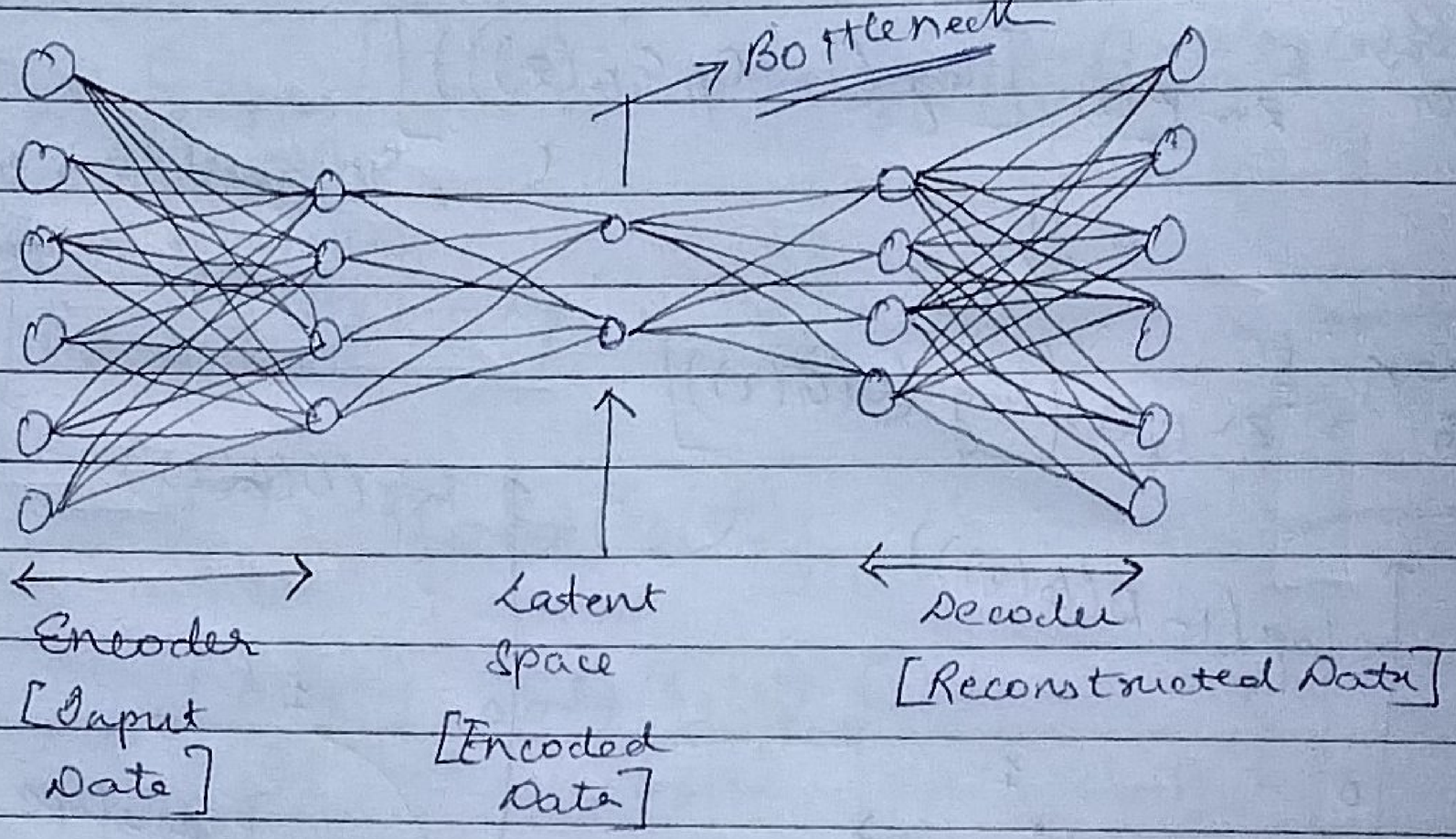
- Auto Encoders :→ These are a special type of NN that learns to compress data into a compact form and then reconstruct it to closely match the original inputs.

Page No.
Date

↳ It is consist of :→ Encoder, Latent Space, Decoder.

Models are trained using loss functions :→ Mean Squared Error & Binary Cross Entropy.



- Used for noise removal, anomaly detection, & feature extraction.

WORK → Encoder compresses input into smaller features
→ Bottleneck holds compact data representation
→ Decoder rebuilds original data from compressed form

Encoder:- It compress the i/p data into a smaller data, more manageable form by reducing its dimensions, while preserving the important information.
It has 3 layers :→ input, hidden, output layer (Bottleneck/ latent space)

Bottleneck:- It is the smallest layer of the network which represents the most compressed version of the i/p data. It serves as the information bottleneck which force the network to prioritize the most significant figures/features.
This compact representation helps the model learn the underlying structure and key patterns of the input helps in enabling better generalization & efficient data encoding
This output will feed in Decoder as input

Decoder:- It is Responsible for taking the compressed representation from the latent space, and reconstructing it back into the original data form.