Started on	Thursday, 6 February 2025, 11:13 PM
State	Finished
Completed on	Thursday, 6 February 2025, 11:17 PM
Time taken	4 mins 4 secs
Marks	10.00/10.00
Grade	**100.00** out of 100.00

Question 1

1.00/1.00

Which component of the VAE loss function ensures the latent variables adhere to a standard distribution?

- Hinge loss
- KL divergence✔
- Mean squared error
- Absolute error
- Cross-entropy

The correct answer is: KL divergence

Question 2

1.00/1.00

In the context of Variational Autoencoders (VAEs), what does variational inference help achieve?

- Faster training speeds
- Improved image resolution
- Direct computation of posterior distributions
- Approximation of complex posterior distributions✔
- Reduction of model parameters

The correct answer is: Approximation of complex posterior distributions

Question 3

1.00/1.00

What is the primary role of autoencoders in generative modeling?

- Data classification
- Image recognition
- Data compression and reconstruction✔
- Regression
- Clustering

The correct answer is: Data compression and reconstruction

Question 4

1.00/1.00

Reparameterization trick is used to...

- Deal with the non-differentiability of sampling in VAEs✔
- Speed up training
- Reduce model size
- Improve model accuracy
- None of the given options

The correct answer is: Deal with the non-differentiability of sampling in VAEs

Question 5

1.00/1.00

Which application does NOT typically use VAEs?

- Anomaly detection in industrial equipment
- Text summarization✔
- Face generation for video games
- Medical imaging enhancement
- Fashion design

The correct answer is: Text summarization

Question 6

1.00/1.00

Why is the reparameterization trick crucial in training VAEs?

- It allows backpropagation through stochastic nodes✔
- It reduces the need for labeled data
- It increases the model's accuracy
- It reduces the model's complexity
- It speeds up the training process

The correct answer is: It allows backpropagation through stochastic nodes

Question 7

1.00/1.00

What does VAE stand for?

- Virtual Autoencoder
- Variable Autoencoder
- None of the given options
- Vectorized Autoencoder
- Variational Autoencoder✔

The correct answer is: Variational Autoencoder

Question 8

1.00/1.00

Which of the following is NOT a type of autoencoder?

- Variational autoencoder
- Supervised autoencoder✔
- Contractive autoencoder
- Denoising autoencoder
- Sparse autoencoder

The correct answer is: Supervised autoencoder

Question 9

1.00/1.00

In which application might you use a VAE for generating new, coherent samples?

- Speech recognition
- Image classification
- Time series forecasting
- Text translation
- Designing virtual fashion items✔

The correct answer is: Designing virtual fashion items

Question 10

1.00/1.00

Why are autoencoders considered generative models?

- They are a type of neural network
- They can reconstruct and generate data similar to the input✔
- They are used for supervised learning
- They are only used for image data
- They always reduce data dimensionality

The correct answer is: They can reconstruct and generate data similar to the input