

Answer the following:

1. [1 pts] Does the RBMs form complete or bipartite graphs?
2. [1 pts] Are RBMs generative or discriminative models?
3. [2 pts] What error is used to train the standard autoencoders?
4. [2 pts] What type of generative model that we discussed provides a good initialization for deep autoencoders?
5. [2 pts] For Variational Autoencoders (VAE), what distribution is the latent variable / code  $z$  is expected to have?
6. [2 pts] Within the derivation of the VAE, we come up with the variational lower bound, which becomes the cost function during training. What does this lower bound estimate (i.e., what is the bound of)?

1. bipartite
2. Generative
3. L2
4. Layered RBM
5. Standard Normal i.e.  $\sim N(0,1)$
6.  $\text{Log}(p(x))$  i.e. the Log likelihood of the data