Q.1

1. False - Conditional Independent
2. False - Generative Model
3. True
4. False - Requires continuous data
5. True

Q.2

P(hired) = 3/8
P(not hired) = 5/8

P(excellent, poor, lots | hired) = P(hired) * P(excellent | hired) * P(poor | hired) * P(lots | hired)
= 3/8 * 2/3 * 1/3 * 3/3 = 1/12
P(excellent, poor, lots | not hired) = P(not hired) * P(excellent | not hired) * P(poor | not hired) * P(lots | not hired)
= 5/8 * 1/5 * 2/5 * 2/5 = 1/50

Since P(excellent, poor, lots | hired) > P(excellent, poor, lots | not hired)

Person should be hired

Q.4

1. False - Multiple Gaussian distributions
2. True
3. True
4. False - Can be used to generate data
5. False - Data in higher dimension can get sparse, better to apply dimensional reduction technique

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Q.5

1. Gaussian - 2 has most
2. Gaussian - 1 has least
3. Area under the mixture model is 1, since it is a probability density function.