Here are the questions from [4.1.2 The Kalman filter equations - Quiz]

1. We just derived the expected value for the predicted density assuming zero mean and Gaussian process noise. If the process noise instead was still zero mean but non-Gaussian...

Optional Answers:

1. this would still hold as we only need to assume that it is zero mean.
2. this would not be valid as the predicted density will no longer be Gaussian.

2. Why is the Kalman filter both the MMSE and the MAP estimator for Gaussian linear models?

Optional Answers:

1. Because the process and measurement noise is assumed to be zero mean.
2. Because the posterior density is Gaussian and therefore its mean and most probably value are the same.
3. Because it is able to calculate an analytical expression for the posterior density.

Thank You