KFUPM

Electrical Engineering Department

EE-315 -121

Quiz#5

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1. White noise with power spectral density (PSD) is applied to an ideal filter with gain and bandwidth (rad/s). Find so that the output's average noise power is 16 watts.

2.The auto-correlation function of a random process (r.p.) X(t) is

(a) Find the power spectrum of X(t). (b) What is the average power?

3..Given the random process (r.p.)

Where is a constant and is a random variable (r.v.) uniformly distributed on the interval . If the auto correlation of X(t) is and the auto correlation of Y(t) is , are X(t) and Y(t) jointly wide sense stationary? (show your work)