

KFUPM - COMPUTER ENGINEERING DEPARTMENT

COE-543 – Mobile Computing and Wireless Networks

Student Name:

Student Number:

1) (10 points) on short distance baseband transmission.

Explain how Pulse Position Modulation (PPM) is used in IEEE802.11 to provide 1 Mb/s and 2 Mb/s rates over the air.

2) (40 points) on the carrier modulation techniques

- a) Explain how basic FSK works? What is the difference between FSK and MSK?
- b) Define the time-bandwidth product for a filter? How to measure the time-bandwidth product for a Gaussian filter?
- c) What happens to the filter output as the time-bandwidth for the filter decreases? What is the impact on the transmitted MSK signal?
- d) For QPSK modulation, the Txer/Rxer can be thought of using 4 baseband symbols for communication. List these symbols.