

المادة: أنظمة الاتصال المحمول	القسم : TE & EE	المستوى : الخامس
الزمن : 3 ساعات	عدد صفحات الامتحان : 2	التاريخ 2011/ 8 / 13

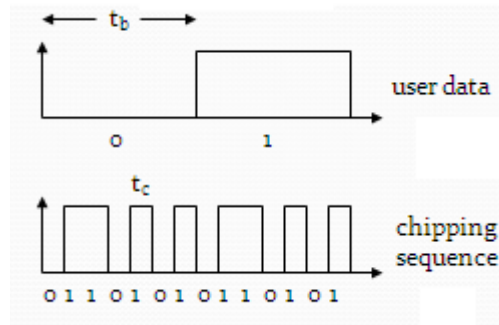
Answer all questions

Question one [15 marks]:

1. why we need antennas in wireless transmission
2. signals propagation ranges are classified as transmission range, detection range, interference range differentiate between them
3. Mobile communication uses low power transmission. Is it advantage or disadvantage? Why

Question two [20 marks]:

1. why we need to use modulation
2. In block diagram show DSSS modulator and demodulator
3. Fig-1 below shows the user data and the chipping sequence find the resulting spread signal

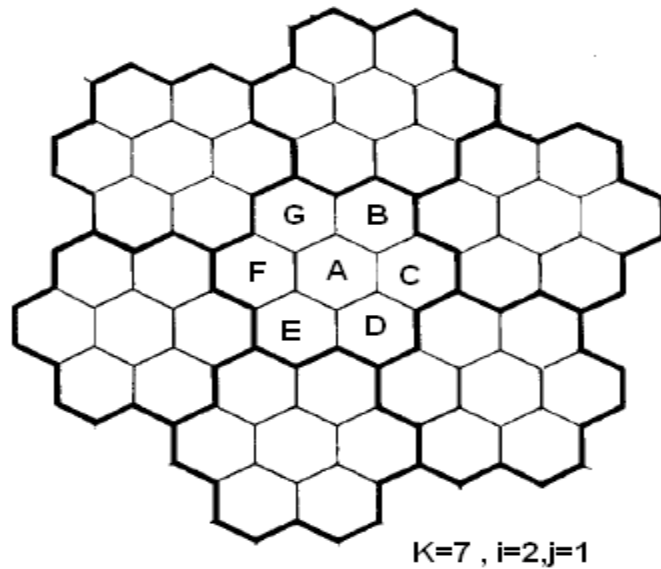


Fig_1

4. State two multiple access schemes used in mobile systems

Question three [20 marks]:

1. show the reused cells in fig_2 using $k=i^2+ij+j^2$ rule (take $i=2, j=1$)



Fig_2

2. They are two methods for achieving Full duplex transmission in mobile system, frequency division duplex(FDD) and time division duplex(TDD) differentiate between them
3. Mobile operates in a multipath propagation environment. What we mean by multipath? and what are the reasons for multipath to occur

Question four [15 marks]:

1. In block diagram show the architecture of GSM system
2. Calculate the total number of channels(full duplex) in GSM900
3. In GSM logical channel are divided to control channels and traffic channels, what is the purpose for each type of channels