**EXAM 1: March 9, 2009**

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**THIS IS AN OPEN   BOOK TEST!!**
**PLEASE WRITE YOUR NAME AND CODEWORD ON EVERY SHEET!!!**
**ANSWER BRIEFLY AND RIGHT TO THE POINT!!**


**NAME: _____          CODEWORD: _____**


**QUESTION 1: (25 points)**
a)  What are the problems of transmitter detection techniques?
b)  What are the advantages and overheads of cyclostationary detection over energy detection?
c)  The Interference Temperature model was initially proposed by the FCC. What are the concerns hindering its adoption?


**QUESTION 2: (25 points)**
a)  What is the significance of Game Theory to Dynamic Spectrum Sharing?
b)  Why is the Fairness Bargaining with Feed Poverty considered to be optimal?
c)  What is a double auction pricing game? How does it differ from the one dimensional auctioning game?

**QUESTION 3: (25 points)**
a)  What is the main difference between the functions of spectrum decision and spectrum mobility?
b)  What are the advantages/disadvantages of multiple spectrum decision over single spectrum decision?
c)  What are the additional considerations in spectrum handoff as opposed to traditional handoff?

**QUESTION 4: (25 points)**
a)  What is the stopping rule in HC-MAC and why is it used?
b)  In DSA MAC framework, how do the busy tones help in reducing collisions?
c)  How does the DCA-based MAC protocol perform the Spectrum Information Maintenance? What do you think are the main drawbacks in using this scheme?