School of Information Technology
IIT Kharagpur

Course Id: IT60112 Information and System Security   **Class Test - II**

Date: March 31, 2006   **Total Time: 1 Hour**
Max. Marks: 30

Instructions: Answer all questions. You may answer the questions in any order. However, all parts of the same question must be answered together. Clearly state any reasonable assumption you make.

You answer should be brief and concise, keeping in mind the duration of the test

1. A system allows passwords with length with a length of one to six characters. Assume that 5,000 characters can be tested per second. The administrator wants to expire the passwords once they have a probability of 0.2 of having been guessed. Compute the expected time to meet the probability if the password characters may be any of the 26 lowercase characters of the alphabet.   **[10]**

2.

   a. Briefly describe (within one page) any application/system software with security features that you have developed before. You can just put bulleted points describing the functionality.

   b. At the end of the one-page description, highlight any two secure system design principles that were followed while building your software (You must briefly explain how they were followed).

   c. Highlight any two other principles that were not followed.

   d. Briefly mention how you can include these two principles (that were not followed before) to improve the security of the software.   **[5+5+2+5=17]**

3. What assurance steps would you take to convince a user that the new software is trustworthy?   **[3]**