DT024A

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Examination of Network Security and Management, AV 2013

Time: 2013-08-19

Total: 100

A: 90
B: 80
C: 70
D: 60
E: 50
Fail < 50

The use of dictionaries is permitted.

Good Luck

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1. (20 p)
   - List out 5 security mechanisms
   - What kind of security attacks each security mechanism can protect?

2. (20 p) Give two methods to encrypt a very large packet by using a symmetric 128 bit block cipher encryption. Compare these two methods.

3. (20 p) What are the properties a digital signature should have? Suppose Alice and Bob share a secret key Ksab. How could Alice sign a message M and send it confidentially to Bob by using a hash function MD5?

4. (20 p) Suppose that Alice has Code's public key Kc and Bob has Code's public key. Both Alice and Bob trust a Code. Describe a method that can create a temporary efficient secure channel between Bob and Alice.

5. (20 p) What is X.509 protocol? What information is included in a X.509 certification? Suppose that Bob is certificated by X.509 certification authority XB, Alice is certificated by X.509 certification authority XA. How can Alice get Bob's certification?