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## USN

## Second Semester M.Tech. Degree Examination, Dec.09/Jan.10 Information and Network Security

Time: 3 hrs.

Max. Marks:100

## Note: Answer any FIVE full questions.

- Explain the managements different types of security policy according to national institute of standards and technology's.
  - Describe the critical characteristics of information. How are they used in the study of (10 Marks) computer security?
- Define the following:
  - Threat ;
- ii) Threat agent;

(06 Marks)

- iii) Exposure;
- iv) Vulnerability.

- b. Explain security systems development cycle with neat block diagram.
- (08 Marks)
- How is the top-down approach to information security superior to the bottom-up approach?
  - (06 Marks)
- What is an information security blue print and its major components? And how it is used to (10 Marks) support the information program?
  - Describe how the various types of firewalls interact with the network traffic at various levels (10 Marks) of the OSI model.
- a. What is meant by firewalls? List the different categories of firewall and explain any one in (10 Marks)
  - What is VPN? Why it is widely popular in many organizations and reasons for it. (10 Marks)
- What is meant by IDS? What are different types of IDS? Explain any one in detail.
  - (10 Marks)
  - With neat block diagram explain the network security model.
- (10 Marks)
- Differentiate between active and passive attacks. Explain the different categories of the (10 Marks) above attacks.
  - b. Explain the RSA algorithm. Is RSA faster than DES? Encrypt the following message plain (10 Marks) text M = 88, P = 17, q = 11 and e = 7.
- Describe the Diffie-Hellman key exchange algorithm used to enable two uses to securely 7 exchange a key.
  - What are the properties a digital signature should have? And what requirements should a (10 Marks) digital signature scheme satisfy?
- 8 Write short notes on:
  - Kerberos
  - ii) X.509 Authentication services
  - PGP
  - S/MIME

(20 Marks)

On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Any revealing of in\*ntification, appeal to evaluator and/or equations written eg. 42+8=50, will be treated as malpractice. - 4 Important Note: