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MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
(A constituent unit of MAHE, Manipal)

II SEMESTER M.TECH. (CSIS)
END SEMESTER EXAMINATION-APRIL 2019
SUBJECT: NETWORK SECURITY [CSE 5222]
REVISED CREDIT SYSTEM
(26/04/2019)

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

- ❖ Answer **ALL** the questions.
- ❖ Missing data may be suitably assumed.

- 1A. What are the three Ds of security? List any four challenges to computer security. 2M
- 1B. An organization has a server in which some manuals are kept. It also provides some applications. The organization wants the manuals to be viewed by all the employees whenever required by them. However project managers can modify the contents of the manuals. For this they must first request the admin. If the admin is confirmed that it is only the concerned project manager making a request he grants permission to make changes to the concerned manual. What type of security services must be present to enable these activities in the organization? Justify your answer. 3M
- 1C. Explain the different file infection techniques used by viruses. 5M
- 2A. What are armored viruses? Briefly explain the different self-protection strategies used by armored viruses. 3M
- 2B. Explain the different types of firewalls. 4M
- 2C. Explain statistical anomaly intrusion detection. 3M
- 3A. Differentiate between native audit record and detection specific audit record. Explain with an example how buffer overflow can lead to an attack. 4M
- 3B. Explain with a flowchart the processing model for outbound packets in IPSec. 4M

- 3C. What are AH controversies? What reasons do people give to retain AH? 2M
- 4A. Draw neat diagrams and explain IKE phase-1 protocols based on public encryption keys in main mode both in the original and revised mode. 5M
- 4B. Draw a neat diagram and explain how TLS uses HMAC structure in the PRF. What are the various attacks that are fixed in TLS version 3? 5M
- 5A. Describe PGP key rings and the trust model. Write the relevant tables and the tree structure. 5M
- 5B. Explain the working of Kerberos version 4 protocol. What is a Kerberos realm? 5M
