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GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI (OLD) EXAMINATION - WINTER 2018

| Subject Code:160702 | Date: 04/12/2018 |
|---------------------|------------------|

Subject Name: Information Security

Time: 02:30 PM TO 05:00 PM Total Marks: 70

Instructions:

1. Attempt all questions.

- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.

| Q.1 | (a) (b) | <u> </u> | 07 07 |
|-----|------------|---|-----------|
| Q.2 | (a) | Explain monoalphabetic cipher and polyalphabetic cipher by giving an example. | 07 |
| | (b) | List various modes of operations of block cipher. Explain any three of them OR | 07 |
| | (b) | What is the purpose of S-box in DES? Explain the avalanche effect in DES. | 07 |
| Q.3 | (a) | What is the limitation of Electronic Codebook Mode (ECB)? explain CBC mode in detail. | 07 |
| | (b) | Explain public-key cryptosystem in detail. | 07 |
| | | OR | |
| Q.3 | | Explain Rail fence Cipher technique. Describe MD5 message digest algorithm. | 07 07 |
| | (D) | Describe MD3 message digest argorithm. | U7 |
| Q.4 | (a) | What is message authentication code? What are the requirements for MACs? | 07 |
| Q.4 | (a) (b) | | 07 |
| | (6) | the middle attack? Justify. | 07 |
| | | OR | |
| Q.4 | (a) | What characteristics are needed in secure hash function? Explain the concept of | 07 |
| | a \ | simple hash function. | |
| | (b) | What is authentication? How it can be done using cryptography? | 07 |
| | | | |
| Q.5 | (a) | Explain the general format of PGP(Pretty Good Privacy) message | 07 |
| | (b) | What are the requirements of digital signature? Explain the concept of | 07 |
| | | arbitrated digital signature. | |
| | | OR | |
| Q.5 | (a) | Explain SSL architecture. | 07 |
| | (b) | What problem was Kerberos designed to address? Briefly explain how | 07 |
| | | session key is distributed in Kerberos. | |
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