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**III.B.TECH- I-SEM (R20)-I MID EXAMINATIONS-NOVEMBER-2023 Date: 03.11.2023**

**Subject: C&NS Time: 10:00 TO 11:30 A.M**

**Branch: IT-(A), CSC Marks: 25 M**

***ANSWER ALL QUESTIONS IN PART -A & PART -B***

**PART-A 5x2=10 M**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **BTL** | **CO** |
| **1.** | Explain symmetric and asymmetric cryptography. | **2** | **2** |
| **2.** | Specify the components of encryption algorithm. | **2** | **1** |
| **3.** | List the following parameters (Block size, Key size and no of rounds) | **1** | **1** |
| **4.** | Differentiate block cipher and stream cipher | **3** | **2** |
| **5.** | Define Digital signature. | **1** | **3** |

**PART-B 3x5M=15 M**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | |  | | **BTL** | | | **CO** | | |
| **6.** | Describe various security mechanism. | | | **1** | | **1** | | |
|  | | | **(OR)** | |  | | |  | | |
| **7.** | | Explain the network security model and its important parameters with a neat block diagram. | | | **2** | | **1** | | |
| **8.** | | What do you mean by AES ? Diagrammatically illustrate the structure of AES and describe the steps in AES encryption process. | | | **2** | | **2** | | |
|  | | **(OR)** | | |  | |  | | |
| **9.** | | Define Diffie -Hellman Key exchange algorithm with an example. | | | **1** | | **2** | | |
| **10.** | | Perform encryption and decryption using RSA algorithm for the following :p=7, q=11,e=7,M=9. | | | **3** | | **2** | | |
|  | | **(OR)** | | |  | |  | | |
| **11.** | | Mention the fundamental idea of HMAC. | | | **1** | | **3** | | |

**SCHEME OF EVALUATION**

**Part –A**

| **SNO** | **THEORY** | **MARKS** | **TOTAL** |
| --- | --- | --- | --- |
| **1** | Explain symmetric and asymmetric cryptography. | **2** | **2** |
| **2** | Specify the components of encryption algorithm. | **2** | **2** |
| **3** | List the following parameters (Block size, Key size and no of rounds) | **2** | **2** |
| **4** | Differentiate block cipher and stream cipher | **2** | **2** |
| **5** | Define Digital signature. | **2** | **2** |

**Part –B**

| **SNO** | **THEORY** | **MARKS** | **TOTAL** |
| --- | --- | --- | --- |
| **6** | Describe various security mechanism.  **(OR)** | **5** | **5** |
| **7** | Explain the network security model and its important parameters with a neat block diagram. | **5** | **5** |
| **8** | What do you mean by AES ? Diagrammatically illustrate the structure of AES and  describe the steps in AES encryption process.  **(OR)** | **5** | **5** |
| **9** | Define Diffie -Hellman Key exchange algorithm with an example. | **5** | **5** |
| **10** | Perform encryption and decryption using RSA algorithm for the following :p=7,  q=11,e=7,M=9.  **(OR)** | **5** | **5** |
| **11** | Mention the fundamental idea of HMAC. | **5** | **5** |