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B.TECH.
(SEM V) THEORY EXAMINATION 2022-23
PRIVACY AND SECURITY IN IOT

Time: 3 Hours

Total Marks: 100

Note: Attempt all Sections. If you require any missing data, then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2x10 = 20

- (a) Define term Authentication and Authorization.
- (b) Illustrate the need of Security Requirements in IoT.
- (c) What is Digital Signature?
- (d) Differentiate between Public key and Private key.
- (e) What are the 4 components of IAM?
- (f) Why do we need identity and access management?
- (g) Write some security attacks on trust metrics.
- (h) How data is disseminated in IoT?
- (i) Write some cloud services offered to IoT.
- (j) Give two applications that use IoT with Cloud.

SECTION B

2. Attempt any *three* of the following: 10x3 = 30

- (a) What is Internet of Things (IoT)? What are components required to design IoT Device and which device we called IoT device explain with example.
- (b) Define cryptographic controls built into IoT messaging and communication protocols.
- (c) What is IoT IAM infrastructure?
- (d) Explain why trust management is important in IoT. Explain a few trust metrics and how and why these trust metrics are important.
- (e) Explain how cloud is related to IoT architecture.

SECTION C

3. Attempt any *one* part of the following: 10x1 = 10

- (a) How can we secure the Internet of things?
- (b) Explain Security Architecture on the Internet of Things. Give some attacks Specific to IoT.

4. Attempt any *one* part of the following: 10 x1 = 10

- (a) What are the 3 most secure encryption techniques in IoT?
- (b) Explain role of cryptography in IoT. Write which are 4 key pillars of cryptography in detail.

5. Attempt any *one* part of the following: 10x1 = 10

- (a) Define Authorization with Publish and Subscribe schemes.
- (b) Explain all Access Management solutions for IoT.

6. Attempt any *one* part of the following: 10x1 = 10

- (a) Write a note on:
 - (i) Trust for IoT and trust Model
 - (ii) Privacy preservation for IoT.
- (b) Explain a few Lightweight and robust schemes for IoT Privacy protection.

7. Attempt any *one* part of the following: 10x1 = 10

- (a) Explain on Devices Security and Privacy of IoT cloud.
- (b) Explain why cloud usage increases security breaches in IoT and give some solutions.