28. a.	What are Hash functions? Draw a Hash function derivative model. What is the role of Hash functions in Block Chain?	10	2	4	3,4
	(OR)				
b.	Discuss in detail about the Public Key Infrastructure.	10	2	4	3,4
29. a.	Discuss in detail about Zcash and Zsnarks.	10	2	4	3,4
	(OR)				
b.	What are Sybil attacks and 51 percent attacks? How do block chains mitigate Sybil attacks?	10	2	4	3,4
30. a.	Analyze about the data analytics methods in IoT systems.	10	2	5,6	2,4
	(OR)				
b.	Discuss about the specific IoT applications and their design considerations.	10	2	5,6	2,4

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Reg. No.															

B.Tech. DEGREE EXAMINATION, MAY 2022

Seventh Semester

18CSE445T – INTERNET OF THINGS SECURITY

(For the candidates admitted from the academic year 2018-2019 to 2019-2020)

Note:

(i) **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40th minute.

(ii) **Part - B** should be answered in answer booklet.

Time: 2½ Hours Max. Marks: 75

	Marks	BL	CO	PO

PART – A (25 × 1 = 25 Marks)

Answer **ALL** Questions

1. The security and policy requirements that are inherited and applicable to IoT deployment are represented as — 1 2 1 1,2
   (A) Policies (B) Rule Sets
   (C) Compliance (D) Protocols

2. Establishing secure coding guidelines and an approved software list for third party libraries are — 1 2 1 1,2
   (A) One – Time Requirements (B) Sprint Requirements
   (C) Bucket Requirements (D) Any Time Requirement

3. This understanding allows us to identify vulnerable points to be addressed by IoT security architecture — 1 2 1 1,2
   (A) Identifying Assets (B) Decomposing
   (C) Composing the assets (D) Rating of Attacks

4. Documenting and understanding of what must be protected — 1 2 1 1,2
   (A) Identifying the assets (B) Decomposing
   (C) Asset Composing (D) Rating of Attacks

5. The scariest combined safety threats are those in which the attacker — 1 2 1 1,2
   (A) Is hiding in the Network (B) Is unknown to other users
   (C) Explicitly targets the design feature (D) Design the attack on modules

6. Which of the following is correct for Rock paper scissor game — 1 2 2,3 2,3
   (A) NASH equilibrium strategy is impossible (B) Probability is ¼
   (C) Mixed strategy NASH equilibrium is possible (D) No pure NASH equilibrium is available

7. MQTT protocol is related to — 1 2 2,3 2,3
   (A) Publish / Subscribe (B) Request / Response
   (C) MESH network Protocol (D) M2M communication protocol

8. MQTT messages are related to — 1 2 2,3 2,3
   (A) Publish / Subscribe (B) Request / Response
   (C) MESH network Protocol (D) M2M communication Protocol

9. Non – contact type of sensor to detect the object — 1 2 2,3 2,3
   (A) Proximity (B) Temperature
   (C) Light (D) Pressure

10. Wider attacks are possible over — 1 2 2,3 2,3
   (A) Mobile Platform (B) WiFi Bands
   (C) IoT, M2M (D) Man with LAN

11. A digital signature is — 1 2 4 3,4
   (A) Encrypted hash value (B) An electronic verification system
   (C) Any Hash value (D) A system Software

12. Which of the following is true about public key Infrastructure? — 1 2 4 3,4
   (A) PKI uses CHAP authentication (B) Didital signatures are never used in PKI
   (C) Symmetric key with digital certificates are used in PKI (D) PKI uses the combination of digital certificates cryptography and certificate authorities

13. Universal Resource Identifiers are used in — 1 2 4 3,4
   (A) HTTP (B) CoAP
   (C) MQTT (D) WEB SOCKET

14. Which of the following use relevant pair? — 1 2 4 3,4
   (A) HASH and NONCE (B) Private key and NONCE
   (C) Public key and HASH (D) Block chain and Encryption

15. How does block chain help to protect Intellectual Property rights (IP)? — 1 2 4 3,4
   (A) Transceiving IP ownership (B) Recording the creation of software
   (C) Recording the event and its Timeline (D) Including the IP in smart contracts

16. Block chain with IoT _____ — 1 2 4 3,4
   (A) Enables to resolve problems without Human interventions (B) Solves complex problems using Hyper Ledger
   (C) Allows Self Driving Cars to have security (D) Avoids Spoofing Attacks

17. Which of the following resolves the speed demands of block chain based transactions? — 1 2 4 3,4
   (A) Proof of Stake (B) Delegated Proof of Stake
   (C) Extended Proof of Stake (D) Proof of Work

18. Which of the following layers is enhanced with internet by the block chain Technology? — 1 2 4 3,4
   (A) Core Layer (B) Trust Layer
   (C) Data Layer (D) Transaction Layer

19. Role of Miners in block chain is — 1 2 4 3,4
   (A) To add reward for transactions (B) To determine the consensus Rules
   (C) To Identify the corrupt Nodes (D) To aggregate Records

20. A Bitcoin Block contains — 1 2 4 3,4
   (A) Nonce & Hash (B) MD5 & Random Transaction Number
   (C) Nonce & Checksum (D) Hash & Checksum

21. The ingress and Egress traffic for IoT is controlled by — 1 2 5,6 2,4
   (A) IoT Gateways (B) IoT Actuators
   (C) IoT Routers (D) IoT Sensors

22. Services due to Authorization and Authentication in IoT are respectively — 1 2 5,6 2,4
   (A) Permissions and Identifications (B) Identification and Connection
   (C) Permissions to devices and Permission to Humans (D) To confirm the users are not Robots and Cyborgs

23. Which of the following is not an authentication method for IoT devices? — 1 2 5,6 2,5
   (A) Two – Factor authentication (B) Trusted Environment
   (C) End Point Trust Response (D) Hardware Root of Trust

24. _____ is an IoT threat defined by its collection of hijacked devices to launch massive attacks — 1 2 5,6 2,5
   (A) IoT Ransomware (B) IoT Malware
   (C) Shadow IoT (D) IoT Botnet

25. Which of the following is not a best practice to ensure IoT devices are physically secure? — 1 2 5,6 2,5
   (A) Disable the Tampered Device (B) Camouflage the Device
   (C) Put it in a Tamper Resistant Case (D) Deploy only authenticated Devices

PART – B (5 × 10 = 50 Marks) — Marks BL CO PO
Answer **ALL** Questions

26. a. Draft a security design of IoT devices overarching the IoT security lifecycle. — 10 2 1 1,2

(OR)

b. Analyse the user and device authentication in IoT systems — 10 2 1 1,2

27. a. 5G and IOT apps need more security than beforc. Justify & Discuss — 10 2 2,3 2,3

(OR)

b. Design and discuss about a schema for IoT connectivity, Security and Remote Management. — 10 2 2,3 2,3