NATIONAL FORENSIC SCIENCES UNIVERSITY
M.Tech. AI & DS with specialization in Cyber Security

Subject Code: CTMTAIDS SII P4   **Date: 12/02/2025**
Subject Name: Intelligent Systems and Security
Time: 11:00 AM to 11:45 AM   **Total Marks: 25**

Instructions:
1. **Write down each question on a separate page.**
2. **Attempt all questions.**
3. **Make suitable assumptions wherever necessary.**
4. **Figures to the right indicate full marks.**

1.	Answer all	10 Marks
	1. What is the primary vision of the Internet of Things (IoT)? a) To replace all wired devices with wireless ones b) To connect and enable communication between physical objects via the internet c) To develop AI-based robots for automation d) To create a global surveillance system **2.** Which of the following is an example of an IoT application? a) Smart cities b) Online banking c) E-commerce websites d) Video streaming services 3. What is the primary security concern in IoT devices? a) Slow internet speed b) Unauthorized access and data breaches c) Limited battery life d) High hardware cost 4. Which of the following ensures privacy and trust in IoT systems? a) Using strong encryption methods b) Keeping devices always connected c) Avoiding software updates d) Disabling firewalls 5. What is a common **device-level energy issue** in IoT? a) High power consumption by sensors b) Lack of internet connectivity c) Limited device storage d) Slow processing speed 6. What does IoT-related standardization focus on? a) Defining common protocols for IoT devices to communicate	

b) Increasing the cost of IoT devices
c) Reducing the number of IoT applications
d) Replacing WiFi with wired networks

7. What are SMART objects in IoT?
a) Objects with built-in intelligence that can interact and make decisions
b) Simple objects used for decorative purposes
c) Objects that can only receive data but not send it
d) Devices that work only with wired connections

8. Which of the following is NOT a component of IoT architecture?
a) Cloud computing
b) Wireless RFID
c) Mechanical gears
d) Sensors

9. What role do **hubs** play in an IoT network?
a) They store all IoT data permanently
b) They act as a central point for connecting multiple devices
c) They provide power to IoT devices
d) They replace internet routers

10. Which of the following communication technologies is commonly used in IoT?
a) Bluetooth
b) WiFi
c) Wireless RFID
d) All of the above.

2.	**Attempt any three.**	**15 Marks**
a.	Mention the Industry Revolution Stage, having the AI backbone. Explain any 1 advanced concept in the same, as per a scenario at any certain Intelligent System. State the prior literatures - corresponding technical milestones.	**1+2+2**
b.	Explain the integrated spectrum focus transformer for pavement distress recognition and classification. How has the Deep learning model been optimised?	**3+2**
c.	Enlist points to emphasise the role of simple statistical techniques in the feature selection, for the Robust machine learning based Intrusion detection system.	**5**
d.	State the 4 Python functions for validation in ML. Explain stratified CV.	**4+1**

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