

Seat No.: _____

Enrolment No. _____

NATIONAL FORENSIC SCIENCES UNIVERSITY
M.Sc. Digital Forensics and Information Security- Semester - III - Jan-2023

Date: 06/01/2023

Subject Code: CTMSDFIS SIII P2

Total Marks: 100

Subject Name: IoT Security and Forensics

Time: 11:00 AM to 2:00 PM

Instructions:

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

(87)

Marks

Q.1 (a) Which are the different components of IoT? Explain it with respect to any one IoT application. 05

(b) Give classifications of sensors and actuator. Give two examples of each category. 05

(c) Draw IoT protocol stack and explain each layer in brief. 07

Q.2 (a) Write characteristics of M2M technology and differentiate between M2M & IoT. 05

(b) What is SNMP? Write its limitations. 05

(c) Which are the different types of IoT nodes? Explain its behavior in WSN. 07

OR

(c) Which are the different IoT enabling technologies? Explain importance of any two with respect to Smart City. 07

Q.3 (a) Why interoperability is required for IoT system? Explain with its key points. 08

(b) Which protocol is used in messaging applications? Explain its architecture in detail. 08

OR

(b) Which protocol is used in resource constraint application? Explain its architecture in detail. 08

Q.4 (a) Write importance of IoT security with respect to any one IoT application. 05

(b) Differentiate between MQTT & CoAP. — confirmable non — rissback separate. 05

(c) What are the major components of MQTT protocol? Explain its working in detail. 07

Q.5 (a) Which are the different attack surfaces in IoT system? Explain each attack surface along with its attack vector. 05

- ✓ (b) Define pen testing. Which are the different type of pen testing? Explain tools and techniques used for pen testing of hardware and firmware devices. 05
- ✓ (c) Write best practices for IoT security that shall be implemented in each layer of IoT system. 07
- OR
- (c) Explain any one case study of cyber-attack involving IoT device along with its security assessment and also highlight solution for the same. 07
- Q.6 (a) Write OWASP Top 10 vulnerabilities for IoT along with its mitigation techniques in brief. 08
- (b) Explain threat modelling of any one IoT application with systematic approach. 08
- OR
- ✓ (b) Write features of any four IoT forensic tools. What kinds of evidences can be extracted from the same? 08

END OF PAPER

100
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