STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI – 600 086
(For candidates admitted from the academic year 2024 – 2025 and thereafter)

M.Sc. DEGREE EXAMINATION – APRIL 2026
DATA SCIENCE
SECOND SEMESTER

COURSE : ELECTIVE
PAPER : INTERNET OF THINGS
SUBJECT CODE : 24DS/PE/IT13
TIME : 3 HOURS **MAX. MARKS: 100**

Q. No.	SECTION A Answer all the questions (10 x 2=20)	CO	KL
1.	Define Internet of Things (IoT).	CO1	K1
2.	List the functionalities of a smart network.	CO1	K1
3.	What is OpenIoT architecture?	CO1	K1
4.	List the stages of IoT service lifecycle.	CO1	K1
5.	What is resource management in IoT?	CO1	K1
6.	Write any two challenges of Internet of Vehicles (IoV).	CO2	K2
7.	Relate and recall the term Continuous Logic Processing System.	CO2	K2
8.	Summarize the steps in IoT Design methodology.	CO2	K2
9.	Give an outline on IoT OAS service.	CO2	K2
10.	Differentiate between data management and data analytics in IoT.	CO2	K2
Q. No.	**SECTION B** **Answer all the questions (4 x 5=20)**	**CO**	**KL**
11.	a) Utilise the OpenIoT architecture model to explain the functionalities of the Request Definition tool, Request Presentation and Configuration Management components. **(OR)** b) Demonstrate how message passing in devices is achieved using REST in resource-constrained environments.	CO3	K3
12.	a) Illustrate the working of MQTT protocol in IoT communication. **(OR)** b) Illustrate the issues that 6LoWPAN needs to solve to design a low-power IoT communication network.	CO3	K3
13.	a) Analyse the IoT design methodology with an example. **(OR)** b) Examine the information model for a weather monitoring system with a neat diagram.	CO4	K4

…2

14.	a) Examine the role of RPL routing protocol in low power and lossy networks. **(OR)** b) Compare BLE and ZigBee protocols for IoT applications.	CO4	K4
Q. No.	**SECTION C** **Answer all the questions (6 x 10=60)**	**CO**	**KL**
15	a) Make use of the taxonomy of resource management and explain the steps for satisfying resource provisioning. **(OR)** b) Identify and explain the lifecycle management services supported by the scheduler.	CO3	K3
16	a) Utilize the reference architecture for IoT and explain the SOA based and API oriented architectures. **(OR)** b) Make use of the effectiveness of governance models and explain the governance issues in managing large-scale IoT ecosystems.	CO3	K3
17	a) Analyse the need and purpose of developing Zigbee and Z-Wave protocols. **(OR)** b) Analyse the possible handshake protocol candidates of TinyTO protocol.	CO4	K4
18	a) Analyse how anomaly detection improves real-time decision making in data processing. **(OR)** b) Analyse the role of communication protocols in optimizing IoT system performance.	CO4	K4
19	a) Evaluate IoT routing attacks to ensure secure IoT deployments. **(OR)** b) Assess the basic building blocks of an IoT device with a neat block diagram.	CO5	K5
20	a) Explain the characteristics of stream data in IoT. **(OR)** b) Explain in detail about light weight cryptography.	CO5	K5

****