



Enrollment No.....
Faculty of Engineering
End Sem (Odd) Examination Dec-2019
CS3EL06 Internet of Things

Programme: B.Tech.

Branch/Specialisation: CS

Duration: 3 Hrs.**Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

- Q.1 i. Most IoT problems are addressed at _____ layer **1**
 (a) TCP (b) IP (c) API (d) UDP
- ii. MQTT stands for _____ **1**
 (a) MQ Telemetry Things (b) MQ Transport Telemetry
 (c) MQ Transport Things (d) MQ Telemetry Transport
- iii. The huge numbers of devices connected to the internet of thing have to communicate automatically, what is this called? **1**
 (a) Bot to Bot (b) Machine to Machine
 (c) Internet to cloud (d) Skynet
- iv. Which of the following cloud concept is related to pooling and sharing of resources? **1**
 (a) Polymorphism (b) Abstraction
 (c) Virtualization (d) None of these
- v. Which is not a step of Requirement Engineering in IoT? **1**
 (a) Requirements elicitation (b) Requirements design
 (c) Requirements analysis (d) Requirements documentation
- vi. Which terms are used in Domain Model? **1**
 (a) Virtual Entity (b) Physical Entity
 (c) Both (a) and (b) (d) None of these
- vii. IoT devices are naturally vulnerable to _____ threats. **1**
 (a) Sensors (b) Heterogeneity
 (c) Security (d) Connectivity
- viii. Which of the following is a form of DoS attack? **1**
 (a) Vulnerability attack (b) Bandwidth flooding
 (c) Connection flooding (d) All of these
- ix. Which sensor will use in weather monitoring system? **1**
 (a) DHT (b) MQ2 (c) PIR (d) Moisture sensor

P.T.O.

- x. What is major drawback of anomaly detection IDS? **1**
 (a) These are very slow at detection
 (b) It generates many false alarms
 (c) It doesn't detect novel attacks
 (d) None of these
- Q.2 i. Define internet of thing and its real time applications. **2**
 ii. Explain the IoT three layers architecture. **3**
 iii. Discuss in details various type of IoT enabling technologies. **5**
 OR iv. Draw and explain communication models for internet of things **5**
- Q.3 i. Describe cloud-based services for internet of things. **4**
 ii. Explain network function virtualization and its benefits. **6**
 OR iii. Explain the following -: **6**
 (a) M2M communication (b) Software define network
- Q.4 i. How to find out specifications of purpose and requirement for IoT platform Design? **4**
 ii. Explain in detail virtual and physical entity for domain model. **6**
 OR iii. What are useful of functional view and operational view for platform design methodology explain? **6**
- Q.5 i. What is the need of security in IoT and how to remove vulnerabilities for internet of thing? **2**
 ii. Explain the following: **8**
 (a) Identity management and establishment
 (b) IoT security tomography
 OR iii. Describe security requirements and threat analysis for internet of things. **8**
- Q.6 Attempt any two:
 i. Explain the components required to design home intrusion detection system in IoT. **5**
 ii. Explain important applications of IoT for agriculture. **5**
 iii. Define steps for making smart cities and parking system in IoT. **5**

Marking Scheme
CS3EL06 Internet of Things

Q.1	i.	Most IoT problems are addressed at _____ layer (c) API	1
	ii.	MQTT stands for _____ (d) MQ Telemetry Transport	1
	iii.	The huge numbers of devices connected to the internet of thing have to communicate automatically, what is this called? (b) Machine to Machine	1
	iv.	Which of the following cloud concept is related to pooling and sharing of resources? (c) Virtualization	1
	v.	Which is not a step of Requirement Engineering in IoT? (b) Requirements design	1
	vi.	Which terms are used in Domain Model? (c) Both (a) and (b)	1
	vii.	IoT devices are naturally vulnerable to _____ threats. (c) Security	1
	viii.	Which of the following is a form of DoS attack? (d) All of these	1
	ix.	Which sensor will use in weather monitoring system? (a) DHT	1
	x.	What is major drawback of anomaly detection IDS? (b) It generates many false alarms	1
Q.2	i.	Define internet of thing Its real time applications.	1 mark 1 mark 2
	ii.	The IoT three layers architecture	(1 mark*3) 3
	iii.	Various type of IoT enabling technologies.	(1 mark*5) 5
	OR iv.	Draw Explanation	2 marks 3 marks 5
Q.3	i.	Two services for internet of things.	(2 marks *2) 4
	ii.	Network function virtualization Its benefits.	3 marks 3 marks 6
OR	iii.	Explain the following -: (a) M2M communication (b) Software define network	6 3 marks 3 marks

Q.4	i.	Specifications of purpose Requirement for IoT platform Design	2 marks 2 marks	4
	ii.	Virtual entity for domain model. Physical entity for domain model.	3 marks 3 marks	
OR	iii.	Useful of functional view Useful of Operational view	3 marks 3 marks	6
Q.5	i.	Need of security Remove vulnerabilities for internet of thing	1 mark 1 mark	2
	ii.	Explain the following: (a) Identity management and establishment (b) IoT security tomography	 4 marks 4 marks	
OR	iii.	Security requirements Analysis for internet of things.	4 marks 4 marks	8
Q.6		Attempt any two:		
	i.	Components required to design home intrusion detection system (1 mark for each point) + 2 marks for diagram		5
	ii.	Important applications of IoT for agriculture. (1 mark for each point) + 2 marks for diagram		5
	iii.	Steps for making smart cities and parking system in IoT. (1 mark for each point) + 2 marks for diagram		5
