

Enrollment No.....



Faculty of Engineering
End Sem Examination Dec-2023

OE00058 Internet of Things

Programme: B.Tech.

Branch/Specialisation: All

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. Assume suitable data if necessary. Notations and symbols have their usual meaning.

- Q.1 i. "Thing" is used to refer _____. **1**
 (a) Physical object (b) Network
 (c) Internet (d) Protocol
- ii. NFC Stands for _____. **1**
 (a) Near Far Communication
 (b) Near Field Communication
 (c) Near Front Communication
 (d) Near Firewall Communication
- iii. "Mango" is a/an _____ software. **1**
 (a) M to M web-based software (b) IoT web-based software
 (c) M to M offline software (d) IoT offline software
- iv. _____ enables IoT on open-source distributed cloud. **1**
 (a) Nimbits (b) Mango (c) NFV (d) None of these
- v. LWM2M Stands for _____. **1**
 (a) Less Wired Machine to Machine Protocol
 (b) Low Risk Wireless Machine to Machine Protocol
 (c) Light Weight Machine to Machine Protocol
 (d) Low Work Machine to Machine Protocol
- vi. HTTP is a _____ layer protocol- **1**
 (a) Session layer (b) Presentation layer
 (c) Network layer (d) Application layer
- vii. A device that converts electrical energy into mechanical energy is- **1**
 (a) LED (b) Photodiode (c) Actuator (d) Sensor
- viii. _____ is a solution for enabling IoT communication. **1**
 (a) IoT firewall (b) IoT gateway
 (c) IoT library (d) IoT modulator

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- ix. The second step in IoT system design methodology is- **1**
 (a) Define domain modal (b) Define process specification
 (c) Define information modal (d) Define purpose and requirements
- x. _____ defines the structure of all the information in IoT system. **1**
 (a) Process (b) Domain model
 (c) Service (d) None of these
- Q.2 i. What are the characteristics of IOT? **2**
 ii. List out the applications of IoT. **3**
 iii. What are the components of IoT? Explain them briefly. **5**
 OR iv. Explain logical design of IoT. **5**
- Q.3 i. Write about various IoT cloud-based services. **2**
 ii. Explain about M to M architecture in IOT. **8**
 OR iii. How NFV (Network Function Virtualization) is implemented in IoT? **8**
- Q.4 i. How COAP (Constrained Application Protocol) works? **3**
 ii. Explain the differences between SOAP and REST. **7**
 OR iii. How MQTT protocol is used in IoT? Explain it. **7**
- Q.5 i. Write short notes on data communication protocols. **4**
 ii. Explain RFID and its applications in IoT. **6**
 OR iii. Explain the concepts of WSN (Wireless Sensor Networks) clearly. **6**
- Q.6 Attempt any two: **5**
 i. Briefly explain about smart streetlights using IoT. **5**
 ii. What is domain model in IoT? Explain with examples. **5**
 iii. Write about Raspberry pi and Arduino devices used in IoT. **5**

Marking Scheme
OE00058 Internet of Things

Q.1	i.	“Thing” is used to refer _____. (a) Physical object	1
	ii.	NFC Stands for _____. (b) Near Field Communication	1
	iii.	“Mango” is a/an_____ software. (a) M to M web-based software	1
	iv.	_____ enables IoT on open-source distributed cloud. (a) Nimbits	1
	v.	LWM2M Stands for _____. (c) Light Weight Machine to Machine Protocol	1
	vi.	HTTP is a _____ layer protocol- (d) Application layer	1
	vii.	A device that converts electrical energy into mechanical energy is- (c) Actuator	1
	viii.	_____is a solution for enabling IoT communication. (b) IoT gateway	1
	ix.	The second step in IoT system design methodology is- (b) Define process specification	1
	x.	_____ defines the structure of all the information in IoT system. (b) Domain model	1
Q.2	i.	Characteristics of IOT	2
	ii.	List out the applications of IoT. 1 mark for each application (1 mark * 3)	3
OR	iii.	Components of IoT Explanation of each	5 2 marks 3 marks
	iv.	Logical design of IoT. Design Explanation	5 2 marks 3 marks
Q.3	i.	IoT cloud-based services.	2
	ii.	M to M architecture in IOT. Block Diagram M2M Explanation	8 4 marks 4 marks
OR	iii.	NFV (Network Function Virtualization) is implemented in IoT Block diagram Explanation	8 4 marks 4 marks

Q.4	i.	COAP (Constrained Application Protocol) working		3
	ii.	Differences between SOAP and REST Explanation of each difference	4 marks 3 marks	7
OR	iii.	About MQTT protocol Usage of MQTT in IoT	3 marks 4 marks	7
Q.5	i.	Write short notes on data communication protocols. Definition Brief notes on protocols	1 mark 3 marks	4
	ii.	About RFID 4 applications in IoT (1 mark for each 1 mark * 4)	2 marks 4 marks	6
	OR	iii.	Concepts of WSN (Wireless Sensor Networks) clearly. Block diagram Explanation of WSN	6 3 marks 3 marks
Q.6		Attempt any two:		
	i.	Smart streetlights using IoT. Diagram	4 marks 1 mark	5
	ii.	Domain model in IoT Definition of Explanation with diagram	1 mark 4 marks	5
	iii.	About Raspberry pi About Arduino devices Usage in IoT systems explanation	2 marks 2 marks 1 mark	5
