

[4]

- Q.6 Attempt any two:
- How does a weather monitoring system using IoT works? Also explain its Benefits of Weather monitoring System Using IoT. **5** 02 05 01 04
  - What is home intrusion system? Explain IoT Based Smart Intruder Detection System For Smart Homes. **5** 02 05 01 04
  - Explain smart parking IoT application with diagram. **5** 02 05 01 04

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Total No. of Questions: 6

Total No. of Printed Pages:4

Enrollment No.....



Faculty of Engineering / Scinece

End Sem Examination Dec 2024

CS3EL14 / BC3EL06 Internet of Things

Programme: B.Tech. / B.Sc. Branch/Specialisation: CSE All / Computer Science

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.

		Marks	BL	PO	CO	PSO
Q.1	i. Which is NOT one of the concerns of the IoTs?	1	01	01	01	04
	(a) Data storage standards					
	(b) Efficiency					
	(c) Privacy concerns					
	(d) Cyber security					
	ii. Which statement is true about the publish/subscribe model in IoT communication?	1	01	01	01	04
	(a) It requires devices to communicate directly with each other					
	(b) It is not scalable					
	(c) It is primarily used for one-to-one communication					
	(d) It allows devices to send and receive messages based on topics					
	iii. What is the role of the cloud in smart grid architecture?	1	01	02	01	04
	(a) Collect data					
	(b) Manage data					
	(c) Security					
	(d) Storage data					
	iv. Which SDN control the virtual and physical devices responsible for routing the data packets?	1	01	02	01	04
	(a) Overlay Model SDN					
	(b) Hybrid Model SDN					
	(c) API SDN					
	(d) Open SDN					

P.T.O.

[2]

v.	Which step is used for relating entity and object in IoT methodology?	1	01	03	01	04
	(a) Process specification					
	(b) Domain specification					
	(c) Operational view					
	(d) Requirement specification					
vi.	Process specification defines the-	1	01	03	01	04
	(a) Edges devices of the IoT system					
	(b) Use cases of the IoT system					
	(c) IoT levels of the system					
	(d) None of these					
vii.	What is a key consideration in managing IoT device vulnerabilities?	1	01	04	01	04
	(a) Increasing device complexity					
	(b) Timely and regular firmware updates					
	(c) Ignoring potential risks					
	(d) Relying solely on physical security measures					
viii.	What is a potential consequence of insufficient IoT device security?	1	01	04	01	04
	(a) Increased device interoperability					
	(b) Unauthorized access and data breaches					
	(c) Lack of standardization in IoT protocols					
	(d) Overreliance on cloud services					
ix.	Which is of the following is an IoT application in health care?	1	01	05	01	04
	(a) Online medicine supplies					
	(b) Remote patient monitoring					
	(c) Electronics medical record management					
	(d) Telemedicine consultant					
x.	What is a key benefit of IoT in smart homes?	1	01	05	01	04
	(a) Increasing energy consumption					
	(b) Complicating home management					
	(c) Enhancing home security and energy efficiency					
	(d) Decreasing property values					

[3]

Q.2	i.	What is an IoT Gateway? What is the function of a gateway in the Internet of Things?	2	01	01	01	04
	ii.	What is Sensor? List different types of Sensors used to develop IoT station.	3	01	01	01	04
	iii.	List and explain the protocols used in IoT. What are the limitations of IoT?	5	02	01	01	04
OR	iv.	Define IoT Communications APIs. What are the different IoT Communications APIs used in IoT explain with example?	5	01	01	01	04
Q.3	i.	Explain any four differences between Machines in M2M and Things in IoT.	2	01	02	01	04
	ii.	Define Software defined Network. How SDN works? Also explain all types of SDN with its aspects.	8	02	02	01	04
OR	iii.	Define Network Function Virtualization. List out the key elements of NFV architecture. Describe how NFV can be used for virtualizing IoT device.	8	02	02	01	04
Q.4	i.	Write a short on various service types used in service specifications step of IoT system design methodology.	3	01	03	01	04
	ii.	Describe the following steps involved in IoT system design methodology with example: (a) Purpose & Requirements Specification (b) Devices and component integrations	7	02	03	01	04
OR	iii.	Define the IoT level specification in IoT system design methodology. Explain all its six steps with proper diagram.	7	02	03	01	04
Q.5	i.	Write any four security challenges in IoT.	4	01	04	01	04
	ii.	Define access control in IoT. How access control mechanism is used to enhance security?	6	01	04	01	04
OR	iii.	Define tomography. Explain layered attacker model in IoT with proper diagram.	6	01	04	01	04

**Marking Scheme**  
Internet of Things CS3EL14- BC3EL06

Q.1	i)	a) Data storage standard	1
	ii)	d)It allows devices to send and receive messages based on topics.	1
	iii)	b) Manage data	1
	iv)	d) Open SDN	1
	v)	b) Domain specification	1
	vi)	b) use cases of the IoT system	1
	vii)	b) Timely and regular firmware updates	1
	viii)	b) Unauthorized access and data breaches	1
	ix)	b) Remote patient monitoring	1
	x)	c)Enhancing home security and energy efficiency	1

Q.2	i.	Define IoT Gateway	1 mark	2
		its function	1 mark	
	ii.	What is Sensor?	1 mark	3
		List different types of Sensors	2 marks	
	iii.	protocols used in Iot	2 marks	5
		limitations of IoT	3 marks	
OR	iv.	Define IoT Communications APIs	2 marks	5
		Explanation	3 marks	

Q.3	i.	Difference b/w Machines in M2M and Things in IOT?		2
		(4 points) 0.5 mark for each		
	ii.	Define Software defined Network?	2 marks	8
		How SDN works?	2 marks	
		Also explain all types SDN	2 marks	
		its aspects	2 marks	

OR	iii.	Define Network Function Virtualization	2 marks	8
		key elements of NFV architecture	3 marks	
		how NFV can be used for virtualizing IoT device	3 marks	

Q.4	i.	Service types used in service specifications step of IoT system design methodology.		3
	ii.	Explanation:-		7
		(i) Purpose & Requirements Specification	3.5 marks	
		(ii) Devices and component integrations	3.5 marks	

OR	iii.	Define the IoT level specification	1 marks	7
		its six steps	6 marks	

Q.5	i.	some security challenges in IoT?( any 4 points)		4
	ii.	Define access control	2 marks	6
		Implementation	4 marks	
OR	iii.	Define tomography	2 marks	6
		Explain layered attacker model	4 marks	

Q.6		Attempt any two:		
	i.	Working using iot	2 marks	5
		Benefits of Weather monitoring System	3 marks	
	ii.	DefineIoT Based Smart Intruder Detection System	1 mark	5
		Explanation	4 marks	
	iii.	Smart parking IOT application	4 marks	5
		diagram.	1 mark	

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