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SET-A

SRM

SRM Institute of Science and Technology College of Engineering and Technology School of Computing

SRM Nagar, Kattankulathur – 603203, Chengalpattu District, Tamil Nadu

Academic Year: 2024-25 (ODD)

Test: CLA-T2
Course Code & Title: 18CSE447T EDGE COMPUTING
Year & Sem: IV Year / VIII Sem
Date: 27-06-2024
Duration: 2 Hours
Max. Marks: 50

Course Articulation Matrix: (to be placed)

S.No.	Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	CO1	Н	L	Н	M	Н	Н	Н	Н	Н	Н	M	Н	Н	Н	Н
2	CO2	Н	L	Н	M	Н	Н	Н	Н	Н	Н	M	Н	Н	Н	Н
3	CO3	Н	L	Н	M	Н	Н	Н	Н	Н	Н	M	Н	Н	Н	Н
4	CO4	Н	L	Н	M	Н	Н	Н	Н	Н	Н	M	Н	Н	Н	Н
5	CO5	Н	L	Н	M	Н	Н	Н	Н	Н	Н	M	Н	Н	Н	Н
6	CO6	Н	L	Н	M	Н	Н	Н	Н	Н	Н	M	Н	Н	Н	Н

	Part – A	10 X 1 = 10 Marks)								
	Answer all the questions									
Q.	Question	Ma	BL	CO	PO	*PI				
No		rks				Code				
1	What is a primary advantage of fog computing over traditional cloud computing in IoT architectures? A) Lower latency B) Unlimited scalability C) Higher storage capacity D) Stronger security	1	2	4	1,2	2.1.1				
2	Which protocol is commonly used for efficient data exchange in IoT environments with intermittent connectivity and constrained devices? A) HTTP B) CoAP C) FTP D) SMTP	1	2	4	1,2	2.1.2				
3	Which fog simulator is widely used for evaluating performance and scalability of fog computing applications? A) iFogSim B) NS3 C) Contiki D) Cooja	1	2	4	1,2	2.1.1				
4	Which communication method is suitable for low-power, short-range IoT devices often used in home automation applications? A) Bluetooth B) Zigbee C) Z-wave D) 6LowPAN	1	2	4	1,2	2.1.1				
5	Which tool is used for simulating wireless fidelity (WiFi) networks in IoT deployments? A) Contiki B) Cooja C) NS3 D) Cisco IoX	1	1	5	1,2	2.1.1				

6	Which technology is known for its long-range capability and low-power consumption, making it suitable for wide-area IoT deployments? A) Sigfox B) LoRaWAN C) NeUL D) 5G	1	2	4	1,2	2.1.3
7	Which network simulator is commonly used for analyzing the performance of 4G LTE networks in IoT scenarios?	1	2	5	1,2	2.1.1
	A) IFogSim B) NS3 C) PVFOg simulator D) FogTorch				,	
	Which protocol is used for real-time messaging and					
	presence information exchange in IoT applications?	4	_	_		
8	A) XMPP B) AMQP C) MQTT D) CoAP	1	1	5	1,2	2.1.1
	Which architectural approach leverages software-					
	defined networking (SDN) for managing distributed fog					
9	computing resources?	1	2	5	1,2	2.1.2
	A) iFogSim					
	B) Cisco IoX					
	C) PVFOg simulator					
	D) Software Defined Multi-Tier Fog Architecture					
	What does 5G technology primarily enable in IoT					
	applications compared to previous generations?					
10	A) Higher data storage capacity	1	2	5	1,2	2.1.2
	B) Lower power consumption					
	C) Ultra-reliable low-latency communication					
	(URLLC)					
	D) Better compatibility with legacy protocols					

	Part – B	(4 X 10 = 40 Marks)							
	Answer any 4 questio	ns							
Q.	Question	Marks	BL	CO	PO	*PI			
No						Code			
11	Explain the significance of data acquisition in IoT systems. How does fog computing facilitate efficient data collection from distributed IoT devices?	10	3	3	1,2	2.5.2			
12	Describe the role of MQTT and COAP protocols in IoT communication. How do these protocols support efficient data exchange in fog computing environments?	4.0	3	3	1,2	2.5.2			
13	Compare and contrast Bluetooth, Zigbee, Z-wave, and 6LowPAN communication protocols in terms of their suitability for different IoT applications.		3	4	1,2	2.7.2			
14	Explain the role of WiFi in IoT connectivity. How does Contiki/Cooja simulate and optimize WiFi network performance in IoT deployments?		3	4	1,2	2.7.2			
15	Discuss the role of low-power lossy network (LLN) routing protocols in IoT environments. How does FogTorch simulate and optimize routing decisions in such networks?		3	4	1,2	2.7.2			