

Enrollment No.....



Programme: B.Tech.

Branch/Specialisation: CSE All

Faculty of Engineering
End Sem Examination Dec 2024
CS3EO07 Edge Computing

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. What is edge computing?	1	1	1	1, 2	1
(a) An architecture that processes data as close to its source as possible					
(b) A new name for computing					
(c) A type of computing that leaves network teams on edge					
(d) An architecture that runs workloads in a system					
ii. What's the difference between edge computing and fog computing?		1, 2	1, 2	1, 2	1
(a) Experts use them interchangeably					
(b) The architectures place intelligence and compute power in separate places					
(c) Fog computing encompasses a web of connected devices and data locations, and edge computing processes data and compute solely at the edge					
(d) All of these					
iii. Which factor frequently causes problems within edge computing architectures?		1, 2	1, 9	1, 2	1, 2
(a) Bandwidth					
(b) Latency					
(c) Network security					
(d) Network traffic					

	[2]	[3]	
iv. What are the benefits of edge computing security?	1 1, 2 1, 2 1, 2 1	ii. Explain edge computing hardware architectures with required diagram.	3 3 1, 9 1, 2 1, 2
(a) Edge computing security only benefits IoT		iii. Discuss the areas of application of edge computing.	5 3 1, 9 1, 2 1, 5
(b) Edge computing only secures data about network edge devices		OR iv. Difference between edge vs fog computing.	5 4 10 1, 2 1
(c) Edge computing security can respond in real time and host behavioral threat analytics			
(d) Edge computing cannot be secure			
v. What do we use to connect TV to RPi?	1 1, 2 1, 2 1, 2 1	Q.3 i. What is SCADA?	2 2, 1, 9 1, 2 1, 2
(a) Male HDMI		ii. Define with diagram IoT and edge architecture.	8 3 1, 9 1, 2 1, 2
(b) Female HDMI		OR iii. How can edge computing be applied in telemedicine to enhance the delivery of palliative care.	8 4 1, 10 3, 4, 1, 2
(c) Male HDMI and Adapter			
(d) Female HDMI and Adapter			
vi. What are the distributions supported by raspberry Pi?	1 1, 2 1, 2 1, 2 1	Q.4 i. How to create a program in Raspberry Pi in any language?	3 2, 1, 9 3, 4, 1
(a) Arch Linux (b) Debain		ii. How to use Raspberry Pi as Webserver, Pi Camera?	7 3 1, 10 1, 2 1, 2
(c) Fedora Remix (d) All of these		OR iii. Explain hardware layout and pinouts. Also explain interfacing DHT Sensor with Pi.	7 3 1, 10 3, 4 1, 2
vii. MQTT is mainly used for _____.	1 1, 2 1, 2 1, 2 1		
(a) M2M communication		Q.5 i. Explain implementation of microcomputer RaspberryPi.	4 4, 1, 9 4, 5, 1, 2
(b) Device communication		ii. What are MQTT architecture? Explain in detail in own words.	6 3 1, 9 1, 2 1, 2
(c) Internet communication		OR iii. Explain MQTT data types & MQTT communication formats.	6 4 1, 10 3, 4, 1, 2
(d) Wireless communication			
viii. What bit processor is used in Pi 3?	1 1, 2 1, 2 1, 2 1	Q.6 Attempt any two:	
(a) 64-bit (b) 32-bit		i. How does edge computing work with Raspberry PI? Give some application areas.	5 4, 1, 10 4, 5, 1, 2
(c) 128-bit (d) Both 64 and 32 bit		ii. Explain working of edge computing in industrial and commercial IOT with example.	5 4, 1, 9 3, 5, 1, 2
ix. Which instruction set architecture is used in Raspberry Pi?	1 1 1 1, 2 1	iii. What is use of edge computing in IOT in future prospectus?	5 4, 1, 9 4, 2, 1, 1
(a) X86 (b) MSP			
(c) AVR (d) ARM			
x. What is edge computing's role in cloud computing?	1 1, 2 1, 2 1, 2 1		
(a) They are the same			
(b) Edge computing runs workloads in edge and cloud environments			
(c) Edge computing provides an alternate location to run workloads -- at the edge instead of a cloud environment			
(d) They are unrelated			
Q.2 i. What is edge computing?	2 2, 9 1, 2 1, 2		

Marking Scheme
CS3EO07 Edge Computing

- Q.1 i) (a) An architecture that processes data as close to its source as possible
 ii) (d) All of the above
 iii) (c) Edge computing security can respond in real time and host behavioral threat analytics.
 iv) (d) Network traffic
 v) (c) Male HDMI and Adapter
 vi) (d) Arch Linux, Debain, and Fedora Remix
 vii) (a) M2M communication
 viii) (a) 64-bit
 ix) (c) Edge computing provides an alternate location to run workloads -- at the edge instead of a cloud environment.
 x) (d) ARM

- Q.2 i. Edge Computing theory **2 marks** **2**
 ii. Edge Architecture with diagram **3 marks** **3**
 iii. Min 7 Application explanation **5 marks** **5**
 OR iv. Min 7 differences **5 marks** **5**

- Q.3 i. SCADA explanation with diagram **2 marks** **2**
 ii. - IOT Architecture with diagram
 - Edge architecture with diagram **4 marks** **8**
 OR iii. - Telemedicine palliative care mechanism
 - Telemedicine Architecture with example **3 marks** **8**
5 marks

- Q.4 i. Explanation of create a program in Raspberry Pi in any language? **3 marks** **3**
 ii. - Raspberry Pi as Webserver **4 marks** **7**
 - Raspberry Pi as Camera **3 marks**
 OR iii. - Raspberry Pi Hardware Layout and Pinouts **4 marks** **7**
 - Explanation of interfacing DHT Sensor with Pi **3 marks**
 Q.5 i. Explanation Microcomputer RaspberryPi. **4 marks** **4**
 ii. MQTT architecture with diagram **6 marks** **6**
 OR iii. - MQTT data types **3 marks** **6**
 - MQTT communication formats. **3 marks**
 Q.6 i. Explanation **5 marks** **5**
 ii. Explanation **5 marks** **5**
 iii. Explanation **5 marks** **5**
