Roll No.											

PRESIDENCY UNIVERSITY

BENGALURU

End - Term Examinations – December 2025	
Date: 15-12-2025	**Time:** 1.00pm to 04.00pm

School: SOCSE	**Program:** B.Tech.	
Course Code: CIT2500	**Course Name:** : Fog Computing for IOT	
Semester: V	**Max Marks**: 100	**Weightage**: 50%

CO - Levels	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**
Marks	**24**	**24**	**26**	**26**	**--**

Instructions:

(i) Read all questions carefully and answer accordingly.
(ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 2marks. **10Q x 2M=20M**

1	Why is Fog Computing important in IoT systems?	**2 Marks**	**L1**	**CO1**
2	Name two common application areas of Fog Computing.	**2 Marks**	**L1**	**CO1**
3	List down any two Limitations of Cloud Computing	**2 Marks**	**L1**	**CO2**
4	List any two use cases of Offloading Model in MFC	**2 Marks**	**L1**	**CO2**
5	Name two prominent IEEE 802.11 standards	**2 Marks**	**L1**	**CO3**
6	What is network slicing?	**2 Marks**	**L1**	**CO3**
7	Define software-defined networking	**2 Marks**	**L1**	**CO3**
8	Name the Layered Architecture on Orchestration	**2 Marks**	**L1**	**CO4**
9	List the design principles of integration model.	**2 Marks**	**L1**	**CO4**
10	Name Addressing of DDoS attacks	**2 Marks**	**L1**	**CO4**

Part B

Answer the Questions **Total 80 Marks.**

11.	**a**	In a smart city, multiple IoT devices like traffic cameras and environmental sensors continuously send data to Fog Nodes for processing. However, the Fog Nodes often experience overloading due to the high volume of data and real-time processing demands. Identify the Critical Issues of Fog Nodes.	**10 Marks**	**L3**	**CO1**
	b	Differentiate between Cloud Computing, Edge Computing, and Fog Computing across various aspects.	**10 Marks**	**L2**	**CO1**

Or

12.	**a**	Describe the varies deployment models and its description of Fog Computing with suitable diagrams	**10 Marks**	**L2**	**CO1**
	b	Illustrate how to apply the hierarchy between Fog and Edge Computing to enhance efficiency in real-time data processing	**10 Marks**	**L3**	**CO1**

13.	**a**	Identify the key characteristics of the IEEE 802.11 standard, and how does it facilitate communication in fog computing environments?	**10 Marks**	**L3**	**CO2**
	b	Classify the various short-range technologies used in WPAN and describe their applications in different contexts.	**10 Marks**	**L3**	**CO2**

or

14.	**a**	Elucidate two Long Range Technologies along with their respective characteristics	**10 Marks**	**L2**	**CO2**
	b	Evaluate the advantages and disadvantages of using LPWAN for long-range communication in low-power devices.	**10 Marks**	**L3**	**CO2**

15.	**a**	Describe the architecture and key components involved in 5G network slicing. Explain how it supports diverse use cases such as enhanced mobile broadband (eMBB) and ultra-reliable low-latency communication (URLLC).	**10 Marks**	**L2**	**CO3**
	b	A manufacturing company deploys Edge and Fog computing for real-time monitoring and predictive maintenance of machines. Network slicing is used to separate data streams for monitoring, analytics, and control. What challenges might you face in managing slices across Edge and Fog environments, and how would you address them?	**10 Marks**	**L3**	**CO3**

Or

16.	**a**	Compare and contrast traditional Cloud computing with Edge and Fog computing, focusing on latency, data processing, and resource allocation.	**10 Marks**	**L2**	**CO3**
	b	What are the resource orchestration challenges in Edge and Fog computing when accommodating multiple network slices with varied latency and bandwidth needs?	**10 Marks**	**L2**	**CO3**

17.	**a**	Illustrate how Fog Computing enables real-time decision-making in transportation	**10 Marks**	**L3**	**CO4**
	b	Explain how Edge Cloud architectures handle security management when IoT data is processed at the edge rather than centralized clouds.	**10 Marks**	**L2**	**CO4**

Or

18.	**a**	Discuss how orchestration of resources in the Fog-IoT model helps in large-scale IoT deployments.	**10 Marks**	**L3**	**CO4**
	b	Explain the key technological requirements for implementing Fog-based big data analytics in resource-constrained environments	**10 Marks**	**L2**	**CO4**