O.P.Code: 23CS1206	R23	H.T.No.										

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. III Year II Semester Regular Examinations April-2026
FOG COMPUTING
(CSE With Specialisation in Cloud Computing)

Time: 3 Hours **Max. Marks: 70**

PART-A

(Answer all the Questions **10 x 2 = 20** Marks)

1	a	Differentiate Fog Computing and Cloud Computing based on latency and data processing location.	CO3	L4	2M
	b	Define Fog Computing. List any two characteristics of fog computing.	CO1	L1	2M
	c	List any two challenges involved in fog resource estimation and briefly explain one.	CO2	L4	2M
	d	What are Fog Computing services? List any two services provided by fog nodes.	CO2	L2	2M
	e	List any two characteristics of data generated in fog-based IoT systems.	CO3	L2	2M
	f	Explain how fog computing supports data storage and analytics in an E-Health case study.	CO4	L4	2M
	g	How does FogTorchΠ support fog application deployment? Mention any one deployment constraint it considers.	CO4	L3	2M
	h	What is predictive analysis in the context of fog application deployment?	CO2	L1	2M
	i	Briefly describe the architecture of a fog-based E-Health monitoring system.	CO4	L2	2M
	j	How is Fog Computing used in Human Fall Detection systems? Mention one advantage.	CO4	L3	2M

PART-B

(Answer all Five Units **5 x 10 = 50** Marks)

UNIT-I

2	a	Explain the relationship between fog computing and IoT, highlighting how fog improves IoT performance.	CO1	L2	5M
	b	Describe the different types of services provided by fog computing environments.	CO1	L1	5M
		OR			
3	a	Evaluate the need for fog computing in IoT environments with relevant use cases.	CO1	L5	5M
	b	Illustrate the components of fog computing architecture with a neat diagram.	CO1	L5	5M

UNIT-II

4	a	Demonstrate resource allocation in a smart home system.	CO2	L3	5M
	b	Compare static and dynamic resource estimation techniques.	CO2	L4	5M
		OR			
5	a	Explain the role of fog nodes in IoT applications.	CO2	L2	5M
	b	Compare fog and cloud in terms of resource utilization.	CO2	L4	5M

UNIT-III

6	a	Apply various data filtering techniques in fog data preprocessing.	CO3	L3	5M
	b	Identify and evaluate the need for data privacy in fog environments.	CO3	L5	5M
		OR			
7	a	Demonstrate a use case of data processing in smart health.	CO3	L3	6M
	b	Analyze the trade-offs between local and cloud storage.	CO3	L4	4M

UNIT-IV

8	a	Analyze application modules in iFogSim.	CO4	L4	6M
	b	Evaluate fog deployment using simulation tools.	CO4	L5	4M
		OR			
9	a	Explain the metrics used for fog simulation evaluation.	CO4	L3	5M
	b	Compare energy models in iFogSim and FogTorchΠ.	CO4	L4	5M

UNIT-V

10	a	Discuss fog computing's role in healthcare?	CO5	L2	5M
	b	Define and describe Intelligent Transportation Systems (ITS).	CO5	L2	5M
		OR			
11	a	Critically evaluate human fall detection system.	CO5	L5	5M
	b	Design a fog-based traffic control system.	CO6	L6	5M

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