Roll No.											

PRESIDENCY UNIVERSITY

BENGALURU

End - Term Examinations – December 2025

Date: 13 – 12- 2025 **Time:** 01:00pm – 04:00pm

School: SOCSE	**Program:** B-Tech	
Course Code : CIT3406	**Course Name:** Cloud Computing for IOT	
Semester: VII	**Max Marks**: 100	**Weightage**: 50%

CO - Levels	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**
Marks	**16**	**36**	**14**	**34**	**-**

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.	Define Internet of Things (IoT) and list any two of its applications.	**2 Marks**	L1	CO1
2.	Explain the purpose of Arduino Uno in IoT systems.	**2 Marks**	L2	CO1
3.	What are IoT communication protocols? Give any two examples.	**2 Marks**	L2	CO2
4.	Define cloud computing.	**2 Marks**	L1	CO2
5.	Explain virtualization in cloud computing.	**2 Marks**	L2	CO3
6.	Differentiate between AWS and Azure.	**2 Marks**	L2	CO3
7.	List any two AWS storage services.	**2 Marks**	L1	CO4
8.	What is Elastic Load Balancing?	**2 Marks**	L2	CO4
9.	What are sensors and actuators? Give one example of each.	**2 Marks**	L1	CO1
10.	Mention two advantages of cloud storage for IoT.	**2 Marks**	L1	CO2

Part B

Answer the Questions. **Total Marks 80M**

11.	**a.**	Explain the architecture of Arduino Uno with a neat diagram.	**10 Marks**	**L2**	**CO1**
	b.	Describe how sensors and actuators interact in an IoT system.		**L2**	**CO1**
Or					
12.	**a.**	Describe the working principle of a DHT11 temperature sensor.	**10 Marks**	**L2**	**CO1**
	b.	Analyse how sensor noise affects data accuracy in an Arduino-based IoT system. Explain how filtering or calibration techniques improve system reliability.		**L4**	**CO1**

13.	**a.**	Explain the working and configuration of ESP8266 Wi-Fi module.	**10 Marks**	**L2**	**CO2**
	b.	Describe MQTT protocol and its advantages in IoT communication.		**L2**	**CO2**
Or					
14.	**a.**	Explain IoT data flow from devices to the cloud.	**10 Marks**	**L3**	**CO2**
	b.	Discuss various wireless networking technologies used in IoT.		**L3**	**CO2**

15.	**a.**	Explain the fundamental characteristics of cloud computing.	**10 Marks**	**L3**	**CO3**
	b.	Describe data storage and processing in the cloud with example.		**L3**	**CO3**
Or					
16.	**a.**	Explain resource provisioning and scalability in cloud computing.	**10 Marks**	**L3**	**CO3**
	b.	Discuss the concept of on-demand IT resources.		**L3**	**CO3**

17.	**a.**	Explain compute services in AWS (EC2, Lambda, Elastic Beanstalk).	**10 Marks**	**L3**	**CO4**
	b.	Describe AWS storage services – S3, EBS, Glacier.		**L3**	**CO4**
Or					
18.	**a.**	Explain the working of AWS Storage Gateway in hybrid cloud	**10 Marks**	**L3**	**CO4**
	b.	Discuss the use of AWS Auto Scaling and Load Balancing in cloud optimization.		**L3**	**CO4**

19.	**a.**	Analyze how IoT devices use cloud platforms for real-time data processing.	**20 Marks**	**L3**	**CO2**
	b.	Design a complete IoT communication workflow using the ESP8266 module, starting from sensor data collection to cloud transmission. Propose your own protocol stack, justify each component used, and illustrate the data flow with a diagram.		**L6**	**CO2**
Or					
20.	**a.**	Compare MQTT and HTTP protocols for IoT cloud communication.	**20 Marks**	**L3**	**CO2**
	b.	Evaluate cloud storage approaches for IoT sensor data.		**L3**	**CO2**

21.	**a.**	Explain different AWS storage solutions and their use cases.	**20 Marks**	**L3**	**CO4**
	b.	Describe how AWS Load Balancer and Auto Scaling optimize performance.		**L3**	**CO4**
Or					
22.	**a.**	Explain hybrid cloud storage using Storage Gateway.	**20 Marks**	**L3**	**CO4**
	b.	Evaluate the effectiveness of AWS Auto Scaling combined with Load Balancing in managing unpredictable IoT traffic spikes. Provide reasons for why this combination succeeds or fails under certain conditions.		**L5**	**CO4**