PRESIDENCY UNIVERSITY

BENGALURU

End - Term Examinations – MAY 2025

Date: 20-05-2025   **Time:** 09:30 am – 12:30 pm

School: SOCSE	**Program:** B.Tech - CIT	
Course Code: CSE3066	**Course Name:** Mobile Application for IoT	
Semester: VI	**Max Marks**: 100	**Weightage**: 50%

CO - Levels	CO1	CO2	CO3	CO4
Marks	26	26	28	20

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 ADB.	2 Marks	L1	CO1
2.	Write the role of things in IoT.	2 Marks	L1	CO1
3.	Name few IoT Enabling Technologies.	2 Marks	L1	CO1
4.	List any three types of UI elements.	2 Marks	L1	CO2
5.	Differentiate between view and view groups.	2 Marks	L2	CO2
6.	List the Components of Intent.	2 Marks	L1	CO2
7.	Name the human made sensors.	2 Marks	L1	CO3
8.	Compare Sensor over Actuator.	2 Marks	L2	CO3
9.	State the characteristics of edge computers.	2 Marks	L1	CO3
10.	Distinguish between SBC and OSH.	2 Marks	L2	CO3

Part B

11.	a.	Differentiate between JVM and DVM.	4 Marks	L2	CO1
	b.	Describe OHA and Android API concept with examples.	8 Marks	L2	CO1
	c.	Explain the IoT communication models and IoT Communication API's models with suitable diagram.	8 Marks	L2	CO1
Or					
12.	a.	Define Emulator.	4 Marks	L1	CO1
	b.	Explain android architecture in detail with neat diagram.	8 Marks	L2	CO1
	c.	Illustrate the Android OS versions and Features.	8 Marks	L2	CO1

13.	a.	Explain the Steps to install and configure Android Studio and SDK.	4 Marks	L2	CO2
	b.	Write a short notes on : i) Various storage options in android application. ii) Event Management using SQLite.	8 Marks	L2	CO2
	c.	Describe the Android - UI Layouts types and write 10 layout attributes with its sample code snippet for Linear Layout.	8 Marks	L2	CO2
Or					
14.	a.	Explain the Content Provider in android application.	4 Marks	L2	CO2
	b.	Explain in details of Application Components and Android Activity sample code with neat diagram.	8 Marks	L2	CO2
	c	Illustrate android Fragments, types and its life cycle with examples.	8 Marks	L2	CO2

15.	a.	Discuss the functions to make Smart sensor node for IoT.	4 Marks	L2	CO3
	b.	A temperature sensor has analog output, It is connected to the analog pin of an Arduino and need to analysis with sensitivity of $10mV/^0C$. it has a 10 bit ADC and Vref = 5V. Calculate the resolution, error, percentage error and determine the digital value for temperature 80^0C. and Digital values is convert back to analog ranges using 3 bit DAC and Vref = 5V.	8 Marks	L3	CO3
	c.	A door of a store room that opens automatically whenever a human is in front of it. It should not open for other moving things such as pigeons, making the traditional motion sensing infeasible. Interpret the detailed solution for this scenario.	8 Marks	L3	CO3

		Or			
16.	**a.**	Compare TCC over PCC.	**4 Marks**	**L2**	**CO3**
	b.	Illustrate the Key functionalities of IoT Gateway and its operations between edge and cloud with its Security management architecture.	**8 Marks**	**L2**	**CO3**
	c.	A use case comprises a simulated water storage tank, together with a sensor to monitor the tank's level, and an actuator to control the flow of water into the tank. The tank is depleted at a constant rate, and the sensor reports its current value periodically to the Cloud platform using a web service. Suggest the hardware and software requirements for the use case and Predict the background information and expected outcomes.	**8 Marks**	**L3**	**CO3**

17.	**a.**	Differentiate between hardware sensors and software sensors.	**4 Marks**	**L2**	**CO4**
	b.	Explain the following IOT data protocols: a) MQTT b) AMQP c) CoAP d)DDS e)HTTP f)TCP g) WebSocket	**8 Marks**	**L2**	**CO4**
	c.	Discuss the communication criteria related to the smart object and trends , Limitation and its applications of smart object with neat diagram.	**8 Marks**	**L3**	**CO4**
		Or			
18.	**a.**	Write the advantage of Location Services in Android.	**4 Marks**	**L2**	**CO4**
	b.	Discuss the different types of sensors APIs available in the Android platform and how Android Sensor APIs support accessing and managing these sensors with appropriate example.	**8 Marks**	**L2**	**CO4**
	c.	Explain the following IOT network protocols: BLE, WiFi, NFC, ZigBee.	**8 Marks**	**L2**	**CO4**