School of Engineering
Second Sessional Examination, Odd Semester (AS: 2023-24)

B. Tech. CSE(IOTBC)   Year: 2ND   Semester: III

Course Title: Internet of things Application development   Max Marks: 60

Course Code: IOTBC3301   Time: 3hrs

Instructions if any: *Read the question Carefully.*

SECTION 'A' Q.N.1. Attempt all parts of the following:	Course Objective	Marks
a) How are analog sensor readings converted for digital processing in IoT systems?	CO1	1
b) When was MQTT first introduced, and by whom?	CO2	1
c) What is Node-RED?	CO2	1
d) What is IBM Cloud, and what services does it offer?	CO2	1
e) What is the official app store for downloading and installing apps on Android devices?	CO3	1
f) What are the initial steps for getting started with the Watson IoT Platform?	CO2	1
g) What is a Node-RED "dashboard," and how is it used?	CO2	1
h) What is Android, and which company developed it?	CO3	1
SECTION 'B' Q.N.2. Attempt any two parts of the following:	Course Objective	Marks
a) Define all context of security problems in IoT	CO1	6
b) What is a REST API and How can REST APIs be utilized in the context of IoT applications?	CO2	6
c) Describe the role of the Broker in MQTT	CO2	6
d) Define ANDROID app development and all versions of ANDROID till now.	CO3	6

SECTION 'C'	Course Objective	Marks
Q.N.3. Attempt any two parts of the following:		
a) Difference between Sensor and Actuator	CO1	5
b) What is the role of cloud computing in IoT?	CO1	5
c) Define the architecture of DDOS and DOS	CO1	5
Q.N.4. Attempt any two parts of the following:		
a) What are HTTP methods commonly used in RESTful APIs?	CO2	5
b) What is an SDK (Software Development Kit), and how is it used by developers?	CO2	5
c) What are the two primary types of databases mentioned, and what are their key characteristics?	CO2	5
Q.N.5. Attempt any two parts of the following:		
a) Explain the role of a Subscriber and Publisher in MQTT.	CO2	5
b) Explain the concept of mesh networking and cluster tree topology in Zigbee.	CO2	5
c) Describe the HTTP protocol and how is it work with its workflow.	CO2	5
Q.N.6. Attempt any two parts of the following:		
a) What is the foundation of the Android operating system, providing core services like hardware abstraction and security?	CO3	5
b) Define the Architecture of Android with a neat diagram	CO3	5
c) What is the Android Software Development Kit (SDK), and which programming languages are commonly used for Android app development?	CO3	5

Table 1: Mapping between COs and questions
(Number of COs may vary from course to course)

COs	Questions Numbers	Total Marks
CO1	1(a),2(a),3(a),3(b),3(c)	22
CO2	1(b),1(c),1(d),1(f),1(g),2(b),2(c),4(a),4(b),4(c), 5(a),5(b),5(c)	47
CO3	1(e),1(h),2(d),6(a)6(b),6(c)	23