

Registration No.:

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Total Number of Pages: 02

Course: B.Tech  
Sub\_Code: PCAC2005

3<sup>rd</sup> Semester Regular Examination: 2024-25

SUBJECT: Programming Internet of Things

BRANCH(S): ETC, ELECTRICAL, ELECTRICAL & C.E, EEE, MECH, IT, CSEAI, CSE, CIVIL,  
ECE, AEIE, BIOTECH, CHEM, EEVDT

Time: 3 Hours

Max Marks: 100

Q.Code: R533

Answer Question No.1 (Part-I) which is compulsory, any eight from Part-II and any two from Part-III.

The figures in the right hand margin indicate marks.

Part-I

Q1 Answer the following questions:

(2 x 10)

- What is an embedded system?
- What is interrupt latency?
- What do you mean by participatory sensing technology?
- What is a lvalue? What is a rvalue?
- What's the difference between the string and String data types?
- What is a function signature?
- Define Actuators.
- Differentiate between Logical and physical design of IoT.
- Name any four services offered by Raspberry Pi.
- What is Zigbee Smart?

Part-II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve)

(6 x 8)

- List the components of an embedded system.
- Discuss and differentiate Arduino Uno and Raspberry Pi board.
- Explain architecture of Arduino Board.
- What are the key use cases for Smart Cities?
- Summarize the characteristics of IoT.
- Explain RFID in detail along with its types.
- Explain Wireless Sensor Network.
- Write an arduino program to print all integer numbers from 0 to 99 using for loop.
- Explain "sensor" and it's working. Describe any five types of sensors.
- Classify the perception layer in IoT.
- Analyze IoT Security Threats and Attacks.
- Draw the structure of M2M Gate way Network.

**Part-III**

**Only Long Answer Type Questions (Answer Any Two out of Four)**

- Q3** Explain IoT/M2M system layers and design standardization. Differentiate the IoT and M2M. (16)
- Q4** Explain the Conceptual Framework and architecture of IoT with a suitable diagram. (16)
- Q5** Write an arduino Program in C to check if an entered year is leap year. (16)
- Q6** Explain prototyping for embedded devices in IoT. (16)