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**PRESIDENCY  
UNIVERSITY**  
BENGALURU

**School of Engineering**

**Mid - Term Examinations - Nov 2024**

**Semester:** VII

**Date:** 07/11/2024

**Course Code:** ECE3082

**Time:** 09.30am to 11.00am

**Course Name:** Data Science for IoT

**Max Marks:** 50

**Program:** B. Tech ECE

**Weightage:** 25%

**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.**

**2Mx5Q=10M**

- |   |   |            |   |     |
|---|---|------------|---|-----|
| 1 | An IoT device may consist of several interfaces for connections to other devices, both wired and wireless. List any two functional blocks                       | 2<br>Marks | L | CO1 |
| 2 | IoT devices are used for monitoring and control. List any two characteristics of IoT.   | 2<br>Marks | L | CO1 |
| 3 | A smart digital display system across the university campus is to be implemented. List any two communication models suitable for implementation of such system. | 2<br>Marks | L | CO1 |
| 4 | One such communication model used in IoT applications are web-socket. list any two advantages of web-socket communication API                                   | 2<br>Marks | L | CO2 |
| 5 | IPV4 and IPV6 are the protocol which helps to identify the devices on the internet network. State the layer these protocols are applicable.                     | 2<br>Marks | L | CO2 |

**Part B**

**Answer ALL Questions. Each question carries 10 marks.**

**4QX10M=40M**

- |   |  |          |   |     |
|---|--|----------|---|-----|
| 6 | To access, store and distribute the data through the Internet of Things network we need communication models. Discuss the request-response and publish-subscribe communication models. | 10 Marks | M | CO1 |
|---|--|----------|---|-----|

**or**

- 7 The IoT logical design refers to an abstract representation of entities and processes. Describe the logical design blocks of IoT with diagram. 10 Marks M CO1
- 8 The IoT applications can be deployed in different levels. Describe the IoT deployment level 1 and Level2. 10 Marks M CO1
- or**
- 9 IoT protocols help to establish communication between IoT node devices and cloud-based servers over the internet. Describe the TCP/IP model. 10 Marks M CO1
- 10 All sensors can be defined by their ability to measure or capture a certain phenomenon and report them as output signals to various other systems. Describe any five static characteristics 10 Marks M CO2
- or**
- 11 Industrial production networks and office networks differ in several ways with specific requirements in IOT ecosystems for communication, exchange of data between Operational Technology (OT) and Information Technology (IT). Discuss OT and IT system in Internet of Things systems 10 Marks M CO2
- 12 It is required to devise an industry automation for a food processing unit. Classify the IoT components building blocks and integration with description of each layer of the IoT World Forum Reference Model 10 Marks M CO2
- or**
- 13 M2M is Machine to machine verbal exchange of information, without human interplay. Discuss any five applications of M2M 10 Marks M CO2