

Enroll No

Q.P. Code

M 06

- Instructions:**
- 1) All questions are compulsory.
 - 2) Figures in rounded () brackets within the question, indicate the scheme of marking for respective part of the question, whereas, figures in the first right column indicate total marks for that whole question.
 - 3) CO is the index number of the Course Outcome statement.
 - 4) The Bloom's taxonomy level (BL) for 1,2,3,4,5 and 6 is remember, understand, apply, analyze, evaluate and create respectively.
 - 5) Assume suitable data if necessary.
 - 6) Use of non-programmable calculators is allowed

Answer the Following

Marks	BT Level	COs
-------	----------	-----

- | | | | | | |
|-----|---|---|----|-----|-----|
| Q.1 | A | Describe with neat diagram elements of the IoT ecosystem. | 08 | BL2 | CO1 |
| | B | Draw four-layer IoT architecture and describe function of each layer in detail. | 08 | BL2 | CO1 |

OR

- | | | | | | |
|--|---|---|----|-----|-----|
| | B | Describe Emerging trends in IoT and state future challenges in IoT. | 08 | BL2 | CO1 |
|--|---|---|----|-----|-----|

Answer the Following

- | | | | | | |
|-----|---|---|----|-----|-----|
| Q.2 | A | Compare vertically the PAN, LAN, WAN IoT networks with respect to coverage area, speed, design and maintenance, cost and application. | 08 | BL4 | CO2 |
| | B | Explain how MQTT IoT protocol works and also analyze the role of broker and mention importance of topic in MQTT protocol. | 09 | BL4 | CO2 |

OR

- | | | | | | |
|--|---|---|----|-----|-----|
| | B | Compare Zigbee, LoRa WAN, BAC Net, 6LoWPAN IoT protocol with respect to coverage area, speed, design and maintenance, cost and application. | 09 | BL4 | CO2 |
|--|---|---|----|-----|-----|

Answer the Following

- | | | | | | |
|-----|---|--|----|-----|-----|
| Q.3 | A | Draw function block diagram of ESP 32 and explain working of each block in detail. | 08 | BL2 | CO2 |
| | B | Interface DHT11 temperature and humidity sensor module to ESP32 and write a program to display Temperature and Humidity. | 09 | BL6 | CO3 |

OR

- | | | | | | |
|--|---|---|----|-----|-----|
| | B | Interface PIR motion sensor to ESP 32 and write a program to detect human motion. | 09 | BL6 | CO3 |
|--|---|---|----|-----|-----|

