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**Question Paper Code: U4E05**

B.E./B.Tech. DEGREE EXAMINATION, APRIL 2024

Fourth Semester

Artificial Intelligence & Data Science

21UAD405 - INTERNET OF THINGS AND SENSORS

(Regulations 2021)

Duration: Three hours

Maximum: 100 Marks

Answer All Questions

PART A - (10 x 2 = 20 Marks)

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|---|---------|
| 1. Difference between Physical design of IOT and Logical design of IOT. | CO1-U   |
| 2. What are Communication APIs and its types?                           | CO1-U   |
| 3. Define IETF Architecture for IoT.                                    | CO1-U   |
| 4. List out the Features of IoT.  | CO1-U   |
| 5. What is meant by Unified data standards?                             | CO1-U   |
| 6. What are the specifications of zigbee protocol?                      | CO1-U   |
| 7. Differentiate Raspberry with Arduino.                                | CO1-U   |
| 8. Generalize as to how Arduino works.                                  | CO2-App |
| 9. What is meant by IoT for computer vision?                            | CO1-U   |
| 10. Write down the Applications of IOT.                                 | CO1-U   |

PART – B (5 x 16= 80 Marks)

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|--|----------|------|
| 11. (a) Explain in detail about the IoT Communication models             | CO1-U    | (16) |
| Or   |          |      |
| (b) Explain the physical and logical design of IoT in detail             | CO1-U    | (16) |
| 12. (a) Explain in detail protocol of OGC Architecture for Industry 4.0. | CO2-App  | (16) |
| Or   |          |      |
| (b) Apply the concept of the IETF Architecture in IoT environment.       | CO2- App | (16) |

13. (a) Explain in detail about IEEE 802.15.4 with real time applications. CO1-U (16)  
Or  
(b) Explain in detail about functional blocks of Embedded systems CO1-U (16)
14. (a) Apply in detail about Arduino I2C communication with real time applications. CO2-App (16)  
Or  
(b) How can the Arduino board be configured to communicate with other IoT devices using different protocols such as MQTT, CoAP, or HTTP? CO2- App (16)
15. (a) Explain in detail about Humidity monitoring with real time applications. CO2-App (16)  
Or  
(b) Explain in detail about IoT based Intelligent traffic monitoring with real time applications. CO2-App (16)