QP Code: RA22BTECH398 | Reg. No | | | | | | | | | | | AR 22

# Gandhi Institute of Engineering and Technology University, Odisha, Gunupur
## (GIET University)

B. Tech (Sixth Semester - Regular) Examinations, April 2025

## 22BCSPC36001 – Internet of Things

(CSE)

Time: 3 hrs | Maximum: 70 Marks

**(The figures in the right hand margin indicate marks)**

**PART – A** **(2 x 5 = 10 Marks)**

| Q.1. Answer ***ALL*** questions | | CO # | Blooms Level |
|---|---|---|---|
| a. | Memorise the characteristics of IoT. | CO1 | K1 |
| b. | Write a Arduino code for displaying the name and roll number in 16X2 LCD. | CO2 | K3 |
| c. | Note how the Flask is different from Django? | CO3 | K1 |
| d. | Define the term framework and name the different frameworks used in IoT. | CO4 | K1 |
| e. | State the uses of settings.py and manage.py. | CO4 | K2 |

**PART – B** **(15 x 4 = 60 Marks)**

| Answer ***All*** the questions | | Marks | CO # | Blooms Level |
|---|---|---|---|---|
| 2. a. | Name the different levels in IoT? Explain about the Level -03 and Level-05 IoT System with neat sketch. | 8 | CO1 | K2 |
| b. | Summarize the importance of various IoT enabled technologies. | 7 | CO1 | K2 |
| | (OR) | | | |
| c. | List the IoT communication models and explain the purpose and functioning of each model in detail. | 8 | CO1 | K2 |
| d. | What are IoT Communication APIs? Explain their role in enabling communication between IoT devices, cloud services, and user applications. | 7 | CO1 | K1 |
| 3.a. | Classify IoT protocols based on the OSI model. Explain the protocols used at each layer with neat sketch and examples. | 10 | CO2 | K2 |
| b. | What is IoT Software? Explain the Arduino software. | 5 | CO2 | K1 |
| | (OR) | | | |
| c. | Write short note Data Analytics and Data Integration. | 8 | CO2 | K3 |
| d. | Write a Arduino code to interface the MQ-2 gas sensor with an Arduino board for smoke detection. | 7 | CO2 | K3 |
| 4.a. | Discuss about 16X2 LCD Sensor and its pin configuration. Write a Arduino code to display the distance of an object on the 16X2 LCD. | 8 | CO3 | K3 |
| b. | Discuss about the IoT Software implementation challenges. | 7 | CO3 | K1 |
| | (OR) | | | |
| c. | Interface Arduino with Seven-Segment Display Sensor. Write a Arduino code to display first five prime numbers after the delay of 1000ms. | 8 | CO3 | K3 |
| d. | Illustrate the differences between Cloud and Fog Computing. | 7 | CO3 | K1 |
| 5.a. | Analyse the influence of IoT technologies in the healthcare industry using a specific IoT case study. | 8 | CO4 | K3 |
| b. | Define Frame work. Explain different frameworks used in IoT development. | 7 | CO4 | K2 |
| | (OR) | | | |
| c. | Illustrate the working of a Smart City by presenting a detailed IoT case study | 8 | CO4 | K3 |
| d. | Explain the role of cloud computing in IoT. How does it help in data storage, processing, and service delivery? | 7 | CO4 | K2 |

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