| Reg. No. | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| Question Paper Code | 12870 |
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**B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2024**

Third Semester

**Computer Science and Engineering (IoT)**

**20CIPC302 - INTRODUCTION TO INTERNET OF THINGS**

Regulations - 2020

Duration: 3 Hours | Max. Marks: 100

**PART - A (10 × 2 = 20 Marks)**

Answer ALL Questions

| | | Marks | K – Level | CO |
|---|---|---|---|---|
| 1. | What is the role of a coordinator in wireless sensor network? | 2 | K1 | CO2 |
| 2. | What is the function of a data model manager? | 2 | K1 | CO2 |
| 3. | What are the various cloud deployment models? List their merits and demerits. | 2 | K1 | CO3 |
| 4. | What are the security aspects we should pay attention to in IoT infrastructure? | 2 | K1 | CO3 |
| 5. | State the need for controller service in an IoT system. | 2 | K1 | CO4 |
| 6. | What is the difference between a physical and virtual entity? | 2 | K2 | CO4 |
| 7. | What is an interpreted language? | 2 | K1 | CO5 |
| 8. | Describe a use case of a Python dictionary. | 2 | K2 | CO5 |
| 9. | How is Raspberry Pi different from a desktop computer? | 2 | K2 | CO6 |
| 10. | What is the use of SPI and 12C interfaces on Raspberry Pi? | 2 | K1 | CO6 |

**PART - B (5 × 13 = 65 Marks)**

Answer ALL Questions

| | | | Marks | K – Level | CO |
|---|---|---|---|---|---|
| 11. | a) | i) Explain the function of a centralized network controlled in SDN. | 8 | K2 | CO2 |
| | | ii) Discuss about SNMP and list out the limitations of SNMP. | 5 | K2 | CO2 |
| | | **OR** | | | |
| | b) | Describe the roles of YANG and TransAPI modules in device management. | 13 | K2 | CO2 |
| 12. | a) | Design a system for weather monitoring using the IoT design methodology. | 13 | K2 | CO3 |
| | | **OR** | | | |
| | b) | How could smart agriculture be useful to society using cloud technology? | 13 | K2 | CO3 |

| | | | | | |
|---|---|---|---|---|---|
| 13. | a) | List the importance of smart grid and renewable energy systems are important in smart energy systems. | *13* | *K2* | *CO4* |
| | | **OR** | | | |
| | b) | Determine the levels in implement the smart Cities. | *13* | *K2* | *CO4* |
| 14. | a) | Write a Python program to find the average grade of the student. (Module student). | *13* | *K2* | *CO5* |
| | | **OR** | | | |
| | b) | Write a Python program to send E-mail also explain SMTP Lib. | *13* | *K2* | *CO5* |
| 15. | a) | Explain about interfacing an LED using Switch with Raspberry pi and write a program for the same. | *13* | *K2* | *CO6* |
| | | **OR** | | | |
| | b) | Write a code for air pollution monitoring system using Raspberry pi and Explain it. | *13* | *K2* | *CO6* |

**PART - C (1 × 15 = 15 Marks)**

| | | | | | |
|---|---|---|---|---|---|
| 16. | a) | Designing home automation IoT systems including smart lighting and intrusion detection. | *15* | *K3* | *CO1* |
| | | **OR** | | | |
| | b) i) | Determine the types of data generated by a forest for detection system and describe alternative approaches for storing the data. | *8* | *K3* | *CO1* |
| | ii) | What type of analysis is required for forest fire detection from the data collected? | *7* | *K3* | *CO1* |