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7E1821

Roll No. \_\_\_\_\_

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**B. Tech. VII - Sem. (Main / Back) Exam., - 2024**  
**Computer Science & Engineering**  
**7CS4-01 Internet of Things**

**Time: 3 Hours****Maximum Marks: 70***Instructions to Candidates:*

***Attempt all ten questions from Part A, five questions out of seven questions from Part B and three questions out of five questions from Part C.***

*Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.*

*Use of following supporting material is permitted during examination. (Mentioned in form No. 205)*

1. NIL2. NIL**PART – A****[10×2=20]****(Answer should be given up to 25 words only)****All questions are compulsory**

- Q.1 Explain the role of things in IoT.  
Q.2 What is the use of GPIO Pins in an IoT device?  
Q.3 Explain the flavors of Linux OS supported by Raspberry Pi device.  
Q.4 What is the use of SPI interface on Raspberry Pi?  
Q.5 What are 4 aspects in one's business to Master IoT?  
Q.6 What role does the network play in the Internet of everything?  
Q.7 Live few examples of impact of Internet of Things (IoT) on our lives.  
Q.8 What are interrupts in Arduino?  
Q.9 What Python libraries used in Raspberry Pi to control GPIO Pins?  
Q.10 What is application of IoT in Healthcare?

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## **PART – B**

[5×4=20]

### **(Analytical/Problem solving questions)**

#### **Attempt any five questions**

- Q.1 Explain the major services used in cloud computing technology.
- Q.2 Describe how wireless sensor networks become one of the enabling technologies of IoT?
- Q.3 Explain the differences between Machines in M2M and Things in IoT?
- Q.4 Describe the structure of Network Function Virtualization for IoT.
- Q.5 What impacts will the Internet of Things (IOT) have on transportation sector?
- Q.6 Write down the differences between Rest API and Web Socket API.
- Q.7 Describe the steps for designing IoT system with neat diagram.

## **PART – C**

[3×10=30]

### **(Descriptive/Analytical/Problem Solving/Design Questions)**

#### **Attempt any three questions**

- Q.1 Explain the role of big data analysis in IoT and define its characteristics.
- Q.2 Explain how IoT technology used to enable the agricultural industry to increase operational efficiency, lower costs, reduce waste and improve the quality of their field?
- Q.3 Describe the implementation of IoT technology into distributed energy system to optimize the efficiency of energy infrastructure and reduce wastage in the renewable energy systems.
- Q.4 Explain functional view, information view, deployment and operational view and other relevant architectural views of IoT reference architecture.
- Q.5 Write short note on -
  - (i) Lite OS    (ii) Contiki OS    (iii) Ultra Sonic Sensor