

**School of Computing Science and Engineering****Bachelor of Technology in Computer Science and Engineering  
Semester End Examination - Jul 2024****Duration : 180 Minutes  
Max Marks : 100****Sem VI - G1UC620B - Embedded Technology and IoT**General Instructions*Answer to the specific question asked**Draw neat, labelled diagrams wherever necessary**Approved data hand books are allowed subject to verification by the Invigilator*

- 1) Explain WoT (Web of Things). K1(2)
- 2) Discuss the importance of IoT standards in ensuring interoperability and security. K2(4)
- 3) Explain API(any 2) and their uses. K2(6)
- 4) Discuss the different layers and components that make up the architecture of an IoT-based system. What is the role of each component and how do they work together to support IoT functionality? K3(9)
- 5) Discuss the various communication protocols used in IoT architecture. What are the key features and characteristics of each protocol? K3(9)
- 6) Write a program to interface two LED with Arduino that can blink continuously for 3 sec and 5 sec respectively (code only). K5(10)
- 7) Analyze the role of APIs in IoT architecture, including their role in enabling communication between different IoT devices and cloud services. K4(12)
- 8) Evaluate the security challenges associated with IoT, such as data privacy, cyber-attacks and hacking. What measures are being taken to address these security concerns and how can they be improved in the future? K5(15)
- 9) Design a smart classroom for the Galgotias University Hostel in the form of block diagram. Explain Working also K5(15)
- 10) Analyze a case study where sensor and actuator technologies are applied in a specific industry or field (e.g., healthcare, aerospace, smart buildings). What are the key challenges encountered, and how were they addressed? K6(18)