



SNS COLLEGE OF TECHNOLOGY



Coimbatore-35

An Autonomous Institution

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A++' Grade(Cycle III)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

19ECE306-SMART IOT APPLICATIONS

UNIT 1 BASIC APPLICATIONS

2 marks

Q1: What is the primary function of using IoT in parking management?

A1: The primary function of using IoT in parking management is to monitor parking space availability in real-time, reducing the time spent searching for parking and optimizing space usage.

Q2: Name a case study example of an IoT-based parking management system.

A2: A case study example is SFpark in San Francisco, which uses sensors and variable pricing to manage parking spaces.

Q3: What is the main goal of structural health monitoring using IoT?

A3: The main goal is to monitor the condition of infrastructure such as bridges and buildings, allowing for early detection of structural issues and preventive maintenance.

Q4: Identify the components involved in IoT-based structural health monitoring.

A4: Components include sensors (strain gauges, accelerometers) attached to structures, data acquisition systems, and analytical software to predict structural integrity.

Q5: How do IoT devices help in urban noise monitoring?

A5: IoT devices monitor noise levels in urban areas, helping to identify and control noise pollution sources, and inform urban planning and public health improvements.

Q6: Provide an example of a city that uses IoT for noise monitoring.

A6: Barcelona uses IoT for noise monitoring, with a system that informs city planning and policy-making.

Q7: What is the significance of dynamic mapping in urban areas using IoT?

A7: Dynamic mapping using IoT allows for real-time urban planning, emergency response, and infrastructure development.

Q8: Name a tool commonly used in IoT-enabled urban mapping.

A8: Geographic Information Systems (GIS) is commonly used in IoT-enabled urban mapping.

Q9: How are smartphones used in IoT urban applications?

A9: Smartphones are used as sensors to collect urban data, such as traffic and mobility patterns, through their GPS, accelerometer, and gyroscope sensors.

Q10: Give an example of an application that uses smartphone data for urban management.

A10: The Citymapper app uses smartphone data to provide real-time transportation information.

Q11: Why is it important to monitor EMF levels in urban areas?

A11: Monitoring EMF levels is important for public health safety, compliance with regulatory standards, and informing the public about EMF exposure.

Q12: Mention a case study related to EMF level monitoring.

A12: Monitoring of EMF levels around mobile phone towers in New York City is a relevant case study.

Q13: What are the benefits of using IoT to monitor traffic flow?

A13: Benefits include reducing congestion, optimizing traffic signals, and providing real-time traffic updates to users.

Q14: Provide an example of a city that uses IoT for traffic congestion management.

A14: London uses IoT for traffic congestion management, with a system that uses real-time data to optimize traffic flow.

Q15: What are the advantages of IoT-enabled street lighting systems?

A15: Advantages include energy savings, reduced light pollution, and enhanced public safety.

Q16: Name a city that has implemented smart street lighting using IoT.

A16: Los Angeles has implemented smart street lighting, significantly reducing energy consumption.

Q17: How do IoT solutions improve waste management?

A17: IoT solutions optimize waste collection routes, reduce operational costs, and enhance recycling and waste reduction through smart bins with fill-level sensors and data analysis platforms.

Q18: Give an example of a city using IoT for waste management.

A18: Copenhagen uses smart bins that notify waste collectors when they need to be emptied.

Q19: What is the purpose of integrating IoT technology into roads?

A19: The purpose is to enhance transportation efficiency and safety through real-time road condition monitoring, traffic management, and accident detection and response.

Q20: Mention a case study of a smart road using IoT technology.

A20: The A58 motorway in the Netherlands uses sensors to monitor road conditions and manage traffic.