

Reg. No. :

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**Question Paper Code: R9171**

B.E./B.Tech. DEGREE EXAMINATION, NOV 2025

Open Elective

R21UCE971 DEVELOPMENT OF SMART CITIES

(Regulations R2021)

(Common to All Engineering Branches)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. List some of the smart city technologies that are currently being used in real-world applications.. CO1- U
2. What are some of the emerging trends in smart cities technology? CO1- U
3. What are some of the smart city technologies that are being used to improve energy efficiency? CO1- U
4. What are some of the smart city technologies that are being used to improve public safety? CO1- U
5. How does data analytics contribute to smart planning in smart cities? CO1- U
6. Explain the concept of "mixed-use zoning" in smart city planning. CO1- U
7. Give an example of a smart city technology. CO1- U
8. How do smart cities technologies improve urban life? CO1- U
9. What are some best practices for smart cities project management? CO1- U
10. What are some technologies that are commonly used in smart cities projects? CO1- U

PART – B (5 x 16= 80 Marks)

11. (a) Critically analyze how opportunities and challenges in smart cities influence citizen satisfaction and city performance. CO3- Ana (16)
- Or
- (b) Explain the importance of selecting proper factors in smart city construction and their effect on cost, quality, and sustainability. CO3- Ana (16)

12. (a) Select and justify the technologies you would integrate while constructing a smart building for a residential complex. CO2- App (16)
- Or
- (b) Apply the concept of smart parking technology to design a simple layout for a parking lot in a shopping mall. CO2- App (16)
13. (a) Develop a proposal showing how smart planning can improve traffic management during peak hours. CO2- App (16)
- Or
- (b) Summarize how intelligent disaster forecasting systems work to predict natural disasters and protect communities. CO2- App (16)
14. (a) Develop a small case scenario where application technologies are used to improve water distribution and resource monitoring. CO1- U (16)
- Or
- (b) Explain the application technologies in smart cities and give two examples of their use. CO1- U (16)
15. (a) Explain in detail about the need for the project management and concepts involved in smart city. CO1- U (16)
- Or
- (b) Describe the project organizational structures of the Madurai smart city project. CO1- U (16)