# School of Engineering

**B.TECH Civil Engineering in Smart Cities**
**Semester End Examination - Jun 2024**

**Duration : 180 Minutes**
**Max Marks : 100**

**Sem IV - G1UB401T - Demography for Smart City**

*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*

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| 1) | How can a Smart City address environmental sustainability, and why is it important? | K1(2) |
| 2) | Illustrate the environmental benefits of adopting decentralized waste management systems in smart cities. | K2(4) |
| 3) | Write a short note on the potential cyber security challenges faced in a smart city. | K2(6) |
| 4) | Explain the significance of demography and statistics in city planning. | K3(9) |
| 5) | Identify the factors contributing to population growth and decline in smart cities. | K3(9) |
| 6) | Analyze the population growth rate of a smart city with a population of 800,000. If the city's population increased to 820,000 in one year, what is the population growth rate? | K5(10) |
| 7) | Explain various forms of solar energy in which it can harnessed. Also, give the benefits of solar energy. | K4(12) |
| 8) | Propose a plan for implementing a smart parking system integrated with solar panels in a densely populated urban area. Outline the key components and benefits of this system. | K5(15) |
| 9) | Synthesize a plan for integrating intelligent transportation systems (ITS) with public transit networks to enhance multimodal transportation options in a smart city. | K5(15) |
| 10) | Design a comprehensive smart city plan for a growing metropolitan area, considering the integration of various components to address urban challenges effectively. | K6(18) |