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**Presidency University**

**Bengaluru**

 **SCHOOL OF ENGINEERING**

**MAKE-UP EXAMINATION JULY 2024**

**Course Code**: CIV2041

**Course Name**: Fundamentals of Smart City

**Program & Sem**: B.Tech (III Sem)

**Date**: 22 -07-2024

**Time**: 1:30 PM to 4:30 PM

**Max Marks**: 100

**Weightage**:50%

 **Instructions:**

1. *Read the all questions carefully and answer accordingly.*

**Part A [Memory Recall Questions]**

**Answer any five Questions. Each question carries 6 marks. (5Qx6M = 30M)**

1. The main point that differentiates a smart city from the traditional city is addition of a third layer in-between the infrastructure and service layer. The third layer is called the Digital/Data layer. Briefly discuss the building blocks of digitization.

(C.O.No.1) [Knowledge]

1. Smart cities use intelligent solutions to optimize the infrastructure services. List the core infrastructure elements of a smart city.

(C.O.No.1) [Knowledge]

1. The city selection process is based on idea of Cooperative and Competitive Federalism. The city selection process follows a Challenge method two stages, in conjunct, to select cities. Discuss the Stage I competition of city selection with the help of a flow chart.

(C.O.No.2) [Knowledge]

1. A resilient city is the design of a city to endure physical, social and economic shocks and stresses. Discuss the role of ICT in building city's resilience.

(C.O.No.2) [Knowledge]

1. The theories and models of smart city make up the systemic approach that governs its readiness. This contains the in-depth analysis of the concepts of the smart city as it relates to the environment as wells as the energy present. Mention the various smart city models that have evolved across the globe.

(C.O.No.2) [Knowledge]

1. Decentralization is referred to as a form of an organizational structure where there is the delegation of authority by the top management to the middle and lower levels of management in an organization. List any 5 advantages and disadvantages of decentralization.

(C.O.No.3) [Knowledge]

1. National Smart Cities mission monitoring aims to create a framework for monitoring and evaluating smart city projects across India for their transparency, accountability and participatory inclusion of citizen views and concerns. List the committees established at various levels (Central, State & ULB) to monitor smart cities' progress.

(C.O.No.3) [Knowledge]

**Part B [Thought Provoking Questions]**

**Answer any four Questions. Each question carries 10 marks. (4Qx10M = 40M)**

1. Smart cities use intelligent technology, connected devices, and instantaneous data to solve real-world problems. From reducing energy use to alleviating traffic congestion, smart cities are positively changing the lives of urban residents worldwide. To address these, cities are implementing smart technologies in everything from street lamps and drones to robotics and building information modeling (BIM). Additionally, with the expansion of the Internet of Things (IoT), the value of IoT in smart cities is expected to reach $330.1 billion by 2025—up 316 percent from 2018. Briefly explain the anatomy of Smart cities with associated smart features.

(C.O.No.1) [Comprehension]

1. Betting on the technology and its best practices being embraced by smart cities, India has set big goals for urban development, expanding the successful projects and new age practices to 4,000 cities with a population of 5,00,000 each by running the mission into a movement in the next two years or before its deadline ending in 2023. This plan and promise of smart cities across the country though promising is riddled with challenges. Enumerate the key challenges in smart city development and suggest the measures required to overcome these challenges.

(C.O.No.1) [Comprehension]

1. The inclusive city has Participatory planning and decision making at the heart of its development policy. Consultation is done with the community for whom the plan is intended. UN-HABITAT’s Global Campaign on Good Urban Governance sees public participation in urban decision- making process as the key strategy for governments and civil societies to solve urban problems. List any 5 advantages and challenges of urban consultation process.

(C.O.No.2) [Comprehension]

1. The urbanization boom in India is not taking place without heated discussions and an attempt at inclusive planning. If crafted correctly, Indian cities can serve as role models in participatory planning. In fact, many India-based projects and enterprises are leading the way with more inclusive planning methods, hoping to create human-centric cities. Briefly explain the components of inclusive planning and also list any 5 factors which influences inclusive planning.

(C.O.No.2) [Comprehension]

1. The concept of inclusion in cities is complex due to the many factors involved which can be mutually reinforcing, explain the various interventions of inclusive planning.

(C.O.No.2) [Comprehension]

1. A Special Purpose Vehicle is a separate legal entity created by an organization. The SPV is a distinct company with its own assets and liabilities as well as its own legal status Usually, they are created for a specific objective, often to isolate financial risk. Describe the role of SPV in the smart implementation of smart cities.

(C.O.No.3) [Comprehension]

**Part C [Problem Solving Questions]**

**Answer any two Questions. Each question carries 15 marks. (2Qx15M = 30M)**

1. The theories and models of smart city make up the systemic approach that governs its readiness. This contains the in-depth analysis of the concepts of the smart city as it relates to the environment as wells as the energy present. Briefly explain the features of any 5 smart city models.

(C.O.No.1) [Application]

1. Strategic planning is a technique that has been applied to many facets of human activity. However, the application of strategic planning to urban contexts, or cities, regions and other metropolitan areas is a relatively recent development whose beginnings were eminently practical and artistical - a mixture of thought, techniques and art or expertise. Illustrate with the help of a flow chart the process of preparation of Strategic Urban Development Plan.

(C.O.No. 2) [Application]

1. The implementation of the Mission at the City level will be done by a Special Purpose Vehicle (SPV) created for the purpose. Write a note on (i) Implementation by SPV (ii) Financing by convergence with other schemes.

(C.O.No. 3) [Application]