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**School of Engineering**

**Mid - Term Examinations - November 2024**

**Semester:** 7<sup>th</sup>

**Date:** 05-11-2024

**Course Code:** CIV2041

**Time:** 02.00pm to 03.30pm

**Course Name:** Fundamentals of Smart City

**Max Marks:** 50

**Program:** B. Tech

**Weightage:** 25%

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**Instructions:**

*(i) Read all questions carefully and answer accordingly.*

*(ii) Do not write anything on the question paper other than roll number.*

**Part A**

**Answer ALL the Questions. Each question carries 2marks.**

**5Qx2M=10M**

- 1** A smart city frame of reference is needed to frame and guide smart city strategy formulation and implementation. In relation to this what is SCRF and SCAS? **2 Marks** **L1** **C02**
- 2** A Smart City has basic infrastructure that uses smart solution to make infrastructure and services better and relies on area based development. Name the basic Infrastructure facilities of smart cities. **2 Marks** **L1** **C01**
- 3** National Smart Cities Mission is an urban renewal and retrofitting program by the Government of India with the mission to develop smart cities across the country, making them citizen friendly and sustainable. In relation to this list the areas that drive Resilient cities. **2 Marks** **L1** **C02**
- 4** Cognitive systems combine machine learning with the ability to interact via natural language and create insight from massive amounts of data. Why cognitive computing can be called as Disruptive technology? **2 Marks** **L1** **C01**
- 5** Smart Cities require the use of sensors to provide more granular information about its hard assets, the environment, and the utilization of services. Recent research has shown that adding sensors can provide demonstrable benefits. What are the key challenges of smart cities? **2 Marks** **L1** **C01**

**Part B**

**Answer ALL Questions. Each question carries 10 marks.**

**4QX10M=40M**

**6** Smart cities use intelligent solutions to optimize infrastructure and smart and responsive governance to engage citizens in the management of their city. Summarize the benefits of smart cities. **10 Marks L2 CO1**

**Or**

**7** Smart mobility is a core element of smart city initiatives. Urban mobility is a major “pain point” for many city dwellers, due to frequent traffic congestion and long commuting times. Summarize the importance of Last mile connectivity in smart mobility? **10 Marks L2 CO1**

**8** The transformation of cities into smarter and more sustainable environments is a current reality that’s significantly reshaping urban living. Enhanced mobility, energy-efficient infrastructures, smart governance, intelligent urban planning and prioritized citizen wellbeing are leading the way to a sustainable urban future. Explain the Urban consultation Process. **10 Marks L2 CO2**

**Or**

**9** The city can be intended as a dynamically and complex system that evolves in space and time following trajectories that are hard to predict. These characteristics of complexity and dynamic evolution have represented the main critical factors for town planning, generally involved in drawing up forecasts closed and static of the future urban layout. It is thus necessary to draw up new theories of town planning that consider the systemic vision. Explain the planning approach in smart cities. **10 Marks L2 CO2**

**10** Smart city encompasses a vision of an urban space that is ecologically friendly, technically integrated and meticulously planned with a particular reliance on the use of information technology to improve efficiency. Construct the flow chart of Building blocks of digitalization. **10 Marks L3 CO1**

**Or**

**11** Smart mobility is an intelligent transport and mobility network. Smart mobility is the connection of various elements of technology and mobility, a rethinking of the transportation infrastructure used in daily life and business. Construct the flow chart of smart mobility systems. **10 Marks L3 CO1**

**12** The Reference Framework includes major action stages in the Smart Cities Mission and identifies a set of reference guides to support the agencies responsible for carrying out the action stages. Build the flow chart of smart city reference framework for India. **10 Marks L3 CO2**

**Or**

**13** Smart cities are all urban settlements that make a conscious effort to capitalize on the new landscape of Information and Communication Technologies in a strategic way, aiming for environmental sustainability, functionality of urban systems, quality of life for all, knowledge-based development and community-driven development. Their basic components are the urban setting, Information and Communication Technologies, people and communities and a strategic approach towards one or more of the previous aims. Build the flow chart of the Strategic Planning Process & Urban Planning and Management Framework. **10 Marks L3 CO2**