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PRESIDENCY UNIVERSITY BENGALURU

SCHOOL OF ENGINEERING

SUMMER TERM

SUMMER TERM END TERM EXAMINATION – AUGUST 2024

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| **Semester : 4TH** | **Date : 06-08-2024** |
| **Course Code : CIV2006** | **Time : 1:00PM to 4.00PM** |
| **Course Name : INFRASTRUCTURE SYSTEMS FOR SMART CITIES** | **Max Marks : 100** |
| **Program :BTECH** | **Weightage : 50%** |

**Instructions:**

1. *Read all questions carefully and answer accordingly.*
2. *Question paper consists of 3 parts.*
3. *Scientific and non-programmable calculator are permitted.*
4. *Do not write any information on the question paper other than Roll Number.*

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| **PART A** | | | |
| **ANSWER ANY 5 QUESTIONS 5Q X 6M=30M** | | | |
| 1 | A Smart City has basic infrastructure that uses smart solution to make infrastructure and services better and relies on area based development. Write a note on smart water. | (CO 3) | [Knowledge] |
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| 2 | Decentralization refers to the transfer of power and authority from central level government to the regional or lower levels. Write the significance of decentralization. | (CO 3) | [Knowledge] |
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| 3 | National Smart Cities Mission is an urban renewal and [retrofitting](https://en.wikipedia.org/wiki/Retrofitting) program by the [Government of India](https://en.wikipedia.org/wiki/Government_of_India) with the mission to develop [smart cities](https://en.wikipedia.org/wiki/Smart_city) across the country, making them citizen friendly and sustainable. In relation to this define Resilient cities and list the areas that drive Resilient cities. | (CO 2) | [Knowledge] |
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| 4 | Disaster is a serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts. Classify Disasters. | (CO 3) | [Knowledge] |
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| 5 | Efficient infrastructure is the backbone of any smart city. Draw smart citizen engagement framework. | (CO 2) | [Knowledge] |
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| 6 | The Smart Cities Mission of the Government is a bold, new initiative. It is meant to set examples that can be replicated both within and outside the Smart City, catalyzing the creation of similar Smart Cities in various regions and parts of the country. Draw venn diagram of sustainable development. | (CO 2) | [Knowledge] |
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| **PART B** | | | |
| **ANSWER ANY 5 QUESTIONS 5Q X 10M=50M** | | | |
| 7 | 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 well-being are leading the way to a sustainable urban future. Discuss about Urban consultation Process. | (CO 2) | [Comprehension] |
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| 8 | There are many areas of action of the Smart Environment and its benefits for citizens, including smart cities that are committed to the efficient management of energy and natural resources, with the aim of achieving energy efficiency, optimising consumption and increasing and optimising the use of renewable energies, as well as reducing CO2 emissions. Indicate any 4 benefits of IoT in the Environment. Describe the features of any two Hardware requirements for building IoT devices for Smart Environment. | (CO 3) | [Comprehension] |
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| 9 | Smart cities use intelligent solutions to optimize infrastructure and smart and responsive governance to engage citizens in the management of their city. Discuss the benefits of smart cities. | (CO 1) | [Comprehension] |
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| 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. Explain the Building blocks of digitalization. | (CO 1) | [Comprehension] |
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| 11 | The key point in waste management for smart cities is that municipalities who are responsible for waste management in cities have various needs, and latest technologies present efficient and proper waste management solutions for [sustainable municipal waste management](https://evreka.co/blog/smart-city-waste-management-going-smart-is-now-inevitable/)**.**Present about automated waste collection system and aims of the smart solid waste management system. | (CO 3) | [Comprehension] |
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| 12 | 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. Indicate the smart mobility systems in a flow chart. | (CO 3) | [Comprehension] |
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| **PART C** | | | |
| **ANSWER ANY 1 QUESTIONS 1Q X 20M=20M** | | | |
| 14 | Water distribution systems are significant parts of every smart city. Conventional methods of water distribution from the water source to the customer premises are not suitable and efficient, especially for diagnosing any leakage in the pipeline or other parts of the system. Illustrate the components/layers required to make water supply system smart. | (CO 3) | [Application] |
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| 15 | Smart city Mission was launched by Prime Minister Shri Narendra Modi on 25 June, 2015. Smart city is a technologically modern [urban area](https://en.wikipedia.org/wiki/Urban_area) that uses different types of [electronic](https://en.wikipedia.org/wiki/Electronics) methods and sensors to [collect specific data](https://en.wikipedia.org/wiki/Data_collection). Information gained from that [data](https://en.wikipedia.org/wiki/Data) is used to manage assets, resources and services efficiently; in return, that data is used to improve operations across the city. Demonstrate about smart governance. | (CO 2) | [Application] |
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