PRESIDENCY UNIVERSITY
BENGALURU

SCHOOL OF ENGINEERING
MID TERM EXAMINATION - APR 2023

Semester : Semester VI - 2020   **Date :** 13-APR-2023
Course Code : CIV2041   **Time :** 11.30AM - 1.00PM
Course Name : Sem VI - CIV2041 - Fundamentals of Smart City   **Max Marks :** 60
Program : CIV   **Weightage :** 30%

Instructions:
(i) Read all questions carefully and answer accordingly.
(ii) Question paper consists of 3 parts.
(iii) Scientific and non-programmable calculator are permitted.
(iv) Do not write any information on the question paper other than Roll Number.

PART A

ANSWER ALL THE QUESTIONS   **(5 X 2 = 10M)**

1. Algorithm that facilitates registering the transactions in an indisputable way without the use of an intermediary or a central administration is
   a) Block chain technology   (CO1) [Knowledge]
   b) Big data
   c) Artificial technology
   d) Cloud computing

2. The features of smart buildings would include
   a) Optimization of heating, ventilation and cooling systems   (CO1) [Knowledge]
   b) Smart fire detection
   c) Connected controls
   d) All of the above

3. A distinct company with its own assets and liabilities as well as its own legal status created for a specific objective, and often to isolate financial risk and implementation of smart city model is
   a) Urban local body   (CO1) [Knowledge]
   b) Special purpose vehicle
   c) High powered steering committee
   d) None of the above

4. The smart city category that concerns the web environments, which offer local information, online chatting and meeting rooms, and a city's virtual simulation is

   a) Web city   (CO1) [Knowledge]

   b) Knowledge bases

   c) Broadband city

   d) Digital city

5. The capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow no matter the kinds of chronic stresses and acute shocks they experience is called

   a) Urban robustness   (CO2) [Knowledge]

   b) Urban toughness

   c) Urban resilience

   d) None of the above

PART B

ANSWER ALL THE QUESTIONS   (5 X 6 = 30M)

6. 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.

                                                                (CO1) [Comprehension]

7. Area based development will transform existing areas, including slums, into a better planned ones, thereby improving livability of the whole City. Explain the features of Greenfield development type of area based development.

                                                                (CO1) [Comprehension]

8. Disruptive technology is a technology that affects the way how businesses, consumers, or industries function. Briefly explain IoT and Block chain technology.

                                                                (CO1) [Comprehension]

9. Inclusive urban planning is derived from integrated development approach for accessible, resilient, affordable and sustainable urban livelihood. List the strategies of inclusive planning and development.

                                                                (CO1) [Comprehension]

10. Cities should have the ability to face the challenges and thrive to achieve progress. Define Urban resilience. Explain the role of ICT in building City's Resilience.

                                                                (CO2) [Comprehension]

PART C

ANSWER ALL THE QUESTIONS   (2 X 10 = 20M)

11. The concept of smart cities emerged in mid-1990s as the internet and information infrastructure became widespread. With the advent of the internet, telecommunications companies began offering new service models and testing pilot projects. Discuss the evolution of smart cities over time.

                                                                 (CO1) [Application]

12. The concept of inclusive urban planning is derived from integrated development approach for accessible, resilient, affordable and sustainable urban livelihood. Briefly discuss the role of Spatial, Economic and Social interventions in inclusive planning.

                                                                    (CO2) [Application]