

Register No.: ..... Name: .....

## SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

**FIFTH SEMESTER B.TECH DEGREE EXAMINATION (R), DECEMBER 2023**

**CIVIL ENGINEERING**

**(2020 SCHEME)**

**Course Code : 20CET393**

**Course Name: Transportation Systems Management**

**Max. Marks : 100**

**Duration: 3 Hours**

### PART A

*(Answer all questions. Each question carries 3 marks)*

1. Explain the unique challenges and opportunities that Transportation Systems Management faces in the Indian context.
2. Describe the objectives of Transportation Systems Management.
3. Discuss various transit improvement measures.
4. Enumerate the issues related to transit and para transit integration.
5. Compare corridor routes and activity routes.
6. Define accessibility index.
7. Discuss the advantages of bicycle transportation.
8. Suggest the measures to be taken to promote NMT in Indian cities.
9. Describe the concepts of monorail and light rail transit (LRT).
10. Propose unconventional and imaginative features for automated highways to redefine transportation.

### PART B

*(Answer one full question from each module, each question carries 14 marks)*

#### MODULE I

11. a) Explain the concept of reversible lanes and their potential traffic flow benefits in Indian context. (7)  
b) Describe the system approach to transportation planning. (7)

#### OR

12. a) Describe the enchanting ways in which traffic calming measures can transform chaotic traffic into serene and safe transportation corridors. (7)  
b) Explain the strategies of congestion pricing and how it is used to enhance traffic flow in real-world transportation management. (7)

**MODULE II**

13. Enumerate the special privileges granted to High Occupancy Vehicles (HOVs) and elaborate on the details of five of these preferential treatments. (14)

**OR**

14. Elucidate the concept of multimodal coordination, emphasizing the intricacies of integrating various transportation methods. (14)

**MODULE III**

15. a) In a hypothetical urban area with two distinct regions, discuss strategies for creating a suitable bus network considering their unique transportation needs and challenges. How can these strategies align with the goal of achieving an efficient urban transportation system despite regional disparities? (7)
- b) How can the effectiveness of bus route network be evaluated? (7)

**OR**

16. Compare and contrast the different route adopted under network planning strategies. (14)

**MODULE IV**

17. a) Discuss the strategies to be employed for promoting pedestrianization and how they reshape the urban landscape to prioritize walking as a mode of transportation. (7)
- b) Enumerate the characteristics of non-motorised modes of traffic. (7)

**OR**

18. a) Suggest the modifications to be adopted in an urban roadway to enhance the pedestrian facilities in reference to the IRC codes. (7)
- b) How can Level of Service criteria for pedestrian and bicycle facilities be formulated? (7)

**MODULE V**

19. Compare conventional and non-conventional transit systems. (14)

**OR**

20. a) Explain measures that can be adopted for enhancing the usage of rail as a transit mode. (7)
- b) Explain the infrastructural facilities required for a properly planned electric transit vehicle system in a typical Indian city. (7)

\*\*\*\*\*