

Reg. No.

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**B.E./ B. TECH.DEGREE EXAMINATIONS, MAY 2024**  
 Eighth Semester  
**CE18004 – TRANSPORTATION PLANNING & SYSTEMS**  
*Civil Engineering*  
**(Regulation 2018 / 2018A)**

TIME:3 HOURS

MAX. MARKS: 100

COURSE OUTCOMES	STATEMENT	RBT LEVEL
CO 1	After successful completion of this course, the students will be able to Explain the concepts and surveys in Transportation Planning	2
CO 2	Apply trip generation, assignment and distribution techniques in transportation system.	2
CO 3	Examine transportation projects through various case studies.	2
CO 4	Explain how to plan bus transportation system in urban areas.	2
CO 5	Explain how to plan rail transportation and policies.	2

**PART- A(10x2=20Marks)**  
 (Answer all Questions)

	CO	RBT LEVEL
1. List any two objectives of transportation planning.	1	2
2. Relate the expansion factor with the sample survey.	1	2
3. Draw a flowchart showing four step model used for urban transportation planning.	2	2
4. Explain the term 'Validation of the model'.	2	2
5. Define Vehicle Operating Cost.	3	2
6. How land use influences trip generation?	3	2
7. List the advantages of smart card fare collection system in Public mode.	4	2
8. Define break-even point.	4	2
9. State the role of Chennai Unified Metropolitan Transport Authority (CUMTA).	5	2
10. Give expansion for the following abbreviations: RRT; LRT	5	2

**PART- B (5x 14=70Marks)**

	Marks	CO	RBT LEVEL
11. (a) (i) Illustrate the process of delineation of a study area with a neat sketch.	(10)	1	2
(ii) List the data to be collected during street inventory survey.	(4)	1	2
<b>(OR)</b>			
(b) Write a short note on the following headings:	(14)	1	2
(a) Post card questionnaire survey – 7 marks			
(b) Classified volume count survey @ urban area – 7 marks			

- 12. (a)** Explain the following terms:  
 (a) Trip – 2marks  
 (b) Category analysis – 4 marks  
 (c) Constant Factor Method of trip distribution – 8 marks  
**(OR)**
- (b)** Explain the terms ‘mode choice model’ & ‘composition of traffic’. How both are inter-related? **(14) 2 2**
- 13. (a)** Discuss briefly on Comprehensive Mobility Plan (CMP) with reference to toolkit published by Ministry of Housing and Urban Affairs. **(14) 3 2**  
**(OR)**
- (b)** How Environmental Impact Assessment is done for a road widening project? Discuss elaborately. **(14) 3 2**
- 14. (a)** Discuss the factors considered during bus network planning. **(14) 4 2**  
**(OR)**
- (b)** Elaborate the factors considered while fixing a bus terminal station. **(14) 4 2**
- 15. (a)** Write a short note on:  
 (a) Suburban Rail – 4 marks  
 (b) Metro Rail – 4 marks  
 (c) Mass rapid Transit System – 4 marks  
 (d) Mono Rail – 2 marks  
**(OR)**
- (b)** “Transit Oriented Development (TOD)” **(14) 5 2**  
 Explain the above concept with respect to rail mode. – 10 marks  
 How our Chennai metro fits into the above concept? Justify. – 4 marks

**PART- C (1x 10=10Marks)**

(Q.No.16 is compulsory)

- 16.** Estimate the future number of trip distribution using Uniform (Constant) factor Method for the given data: **(10) 2 3**

<b>O \ D</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>1</b>	60	100	200	150
<b>2</b>	100	20	300	125
<b>3</b>	200	300	20	1
<b>4</b>	150	100	50	75

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