

Reg. No:

--	--	--	--	--	--	--	--	--	--

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech III Year I Semester Regular Examinations December-2021**TRANSPORTATION ENGINEERING**

(Civil Engineering)

Time: 3 hours

Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)**UNIT-I**

- 1 What are the engineering surveys conducted to fix the alignment of a highway? **L1 12M**

OR

- 2 a A national highway having design speed 80 kmph passing through rolling terrain in heavy rainfall area has a horizontal curve of radius 500 m. Design the length of transition curve assuming suitable data. Pavement is rotated about the center for super elevation. **L3 8M**

- b Explain PIEV theory. **L1 4M**

UNIT-II

- 3 Explain the significance of traffic studies. Briefly explain any four types of traffic studies. **L2 12M**

OR

- 4 Discuss about various Engineering measures that can help in reducing time accident rate. **L2 12M**

UNIT-III

- 5 a Design a new flexible pavement for a two-lane undivided carriageway using the following data: Design CBR value of subgrade = 8.0%, Initial traffic on completion of construction = 1800 CV per day, Average growth rate = 6.0% per year, Design life = 15 years, VDF value = 2.5. **L3 8M**

- b Draw the stress distribution and cross section in flexible pavements and rigid pavements? **L1 4M**

OR

- 6 With sketch show the different components of a rigid pavement and mention the functions of each. **L2 12M**

UNIT-IV

- 7 a What are the advantages and disadvantages of steel sleepers? **L2 6M**

- b Explain causes of creep. **L2 6M**

OR

- 8 a Explain for coning of wheels. L1 6M
b What are the functions and requirements of fastenings? L1 6M

UNIT-V

- 9 a Define grade compensation? If the ruling gradient is 1 in 140 on a particular section of MG and at the same time a 3.8 degree curve is situated on this ruling gradient, find out the allowable ruling gradient. L2 6M
b What are the operational classifications of stations? Write about requirements of transition curve and the difference between pusher gradient and momentum gradient? L2 6M

OR

- 10 a Explain the classification of gradient in railways. L1 6M
b What is grade compensation in railway track design? Why is it necessary to provide grade compensation? L1 6M

*** END ***