Q.P. Code: 19CE0118 **R19**

Reg. No: | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech III Year I Semester Supplementary Examinations August-2022

TRANSPORTATION ENGINEERING

(Civil Engineering)

Time: 3 hours Max. Marks: 60

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

UNIT-I

1	Write the basic requirements and factors controlling for ideal alignment between two terminal stations.		**L1**	**12M**

OR

2	**a**	List the Factors affecting OSD. Explain Lag distance and Braking distance.	**L2**	**6M**
	b	Explain PIEV theory.	**L1**	**6M**

UNIT-II

3	The results of a speed study is given in the form of a frequency distribution table. Find the time mean speed and space mean speed.		**L3**	**12M**

No.	speed range	average speed (v_i)
1	2-5	3.5
2	6-9	7.5
3	10-13	11.5
4	14-17	15.5

OR

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

UNIT-III

5	**a**	What are warping stresses? List out the stresses in rigid pavement.	**L1**	**6M**
	b	List out the types of pavement based on structural behaviour.	**L1**	**6M**

OR

6	A cement concrete pavement has a thickness of 26 cm and lane width of 3.5 m. Design the tie bars Along the longitudinal joints using the data given below: Allowable working stress in steel tie bars, Ss = 1250 kg/cm^2 Unit weight of CC, W = 2400 kg/cm^3 Maximum value of friction coefficient, f = 1.2 Allowable tensile stress in deformed tie bar, Ss = 2000 kg/cm^2 Allowable bond stress in deformed bars, Sb = 24.6 kg/cm^2		**L3**	**12M**

UNIT-IV

7	**a**	What are the functions of sleepers? Bring out the differences between suspended and supported rail joints.	**L2**	**6M**
	b	Draw a typical cross section of permanent way and show various components.	**L2**	**6M**

OR

8	**a**	Explain for coning of wheels.	**L1**	**6M**
	b	What are the requirements of a ideal permanent way?	**L1**	**6M**

UNIT-V

9	**a**	Calculate the maximum permissible speed on a curve of high speed for the following data on a M.G track. Degree of curve 0.9^0, amount of super elevation 8.0 cm, length of transition curve 135 m, maximum speed of the section likely sanction speed = 120 kmph.	**L3**	**6M**
	b	What is cant deficiency? Discuss briefly about the limits of cant deficiency.	**L1**	**6M**
		OR		
10	**a**	If a ruling gradient of 1 in 250 is fixed on a B.G section and a horizontal curve of 4^0 is also to be introduced over it. What should be the actual ruling gradient?	**L1**	**6M**
	b	Explain the classification of gradient in railways.	**L1**	**6M**

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