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**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR**  
(AUTONOMOUS)

**B.Tech III Year II Semester Supplementary Examinations July-2021**

**TRANSPORTATION ENGINEERING-I**

(Civil Engineering)

Time: 3 hours

Max. Marks: 60

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

**UNIT-I**

- 1 Explain the classification of roads based on location and function as suggested in the Nagpur road plan. 12M

**OR**

- 2 a What are the salient features of Nagpur road development plan? Discuss. 6M  
b Illustrate the significant recommendations of Jayakar committee report. 6M

**UNIT-II**

- 3 Define 'Stopping Sight Distance'. Derive an expression for SSD for a road section where the Design speed is V kmph and the coefficient of longitudinal friction is f. 12M

**OR**

- 4 Calculate the minimum sight distance required to avoid a head on collision of two cars approaching From the opposite direction at 100 kmph and 80 kmph on a road section. Assume a reaction time of 2.5 seconds, coefficient of friction of 0.7 and brake efficiency of 50% in either case. 6M  
b Describe briefly about PIEV theory. 6M

**UNIT-III**

- 5 Define intersection? What are the various types of at grade Intersections and explain them with neat sketches? 12M

**OR**

- 6 a Explain briefly about various road markings. 6M  
b The average normal flow of traffic on cross roads A and B during design period are 400 and 250 PCU/hr; the saturation flow values on these roads are estimated as 1250 and 1000 PCU/hr Respectively. The all-red time required for pedestrian crossing is 12 secs. Design two-phase traffic Signal by Webster's method. 6M

**UNIT-IV**

- 7 Explain the principle of conducting Los Angeles abrasion test. Mention the recommended LA values for paved construction. 12M

**OR**

- 8 What are modified bituminous binders? What are the advantages of these? 12M

**UNIT-V**

- 9 Draw a sketch of flexible pavement cross section and show the component parts. Enumerate the Functions and importance of each component of the pavement 12M

**OR**

- 10 Classify different types of joints in CC pavements and mention the objects of each. 12M

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