



INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)
Dundigal, Hyderabad - 500 043

CIVIL ENGINEERING

ASSIGNMENT

Course Name	:	TRANSPORTATION ENGINEERING
Course Code	:	A60132
Class	:	III - B. Tech II SEM
Branch	:	Civil Engineering
Year	:	2017 – 2018
Course Coordinator	:	Mr. D.M.V Praneeth
Course Faculty	:	Mr. D.M.V Praneeth, Mr. SV Konda Reddy Satti

OBJECTIVES:

The objectives of this program are to introduce the students to

- I. Understand the basic concepts and importance of highway development, road classification of roads in India.
- II. Impart knowledge regarding highway cross section elements.
- III. Design various geometric elements like sight distance, super elevation, horizontal curves, gradients etc
- IV. Interpret the various traffic parameters, regulations and methods of traffic data collection.
- V. Analyze traffic signal designs, the importance of intersection designs, grade intersections and rotaries
- VI. Explain about highway construction, maintenance and their importance

S. No	Question	Blooms Taxonomy Level	Course Outcome
UNIT-I HIGHWAY DEVELOPMENT AND PLANNING			
1.	What is the Necessity for highway planning in our country?	Remember	1
2	Write about Jayakar Committee and its Recommendations and write about I.R.C in detail.	Understand	1
3	Draw neat sketches of various road patterns with explain the necessity of Road patterns.	Understand	1
4	List various factors controlling alignment.	Remember	1
5	Write about the difference between First and Second twenty year road development plan.	Understand	2
6	What are various engineering surveys that are to be conducted for highway Alignment?	Remember	2
7	What are the characteristics of good road and the need for a good road?	Remember	2

S. No	Question	Blooms Taxonomy Level	Course Outcome
8	Write a short note on Highway project report and Explain the steps for a new Highway project?	Understand	2
9	Explain the necessity of highway surveys?	Understand	2
10	Explain the classification of Roads?	Remember	1
UNIT-II HIGHWAY GEOMETRIC DESIGN			
1	What is Camber and explain its need on highway?	Remember	3
2	What is Stopping sight distance? Also derive an expression for SSD.	Understand	3
3	What is over taking sight distance? Also derive an expression for OSD	Understand	3
4	Write about Design of Transition curves in detail? Explain the concept of shift?	Remember	4
5	Write about the design of Vertical curves and Explain with an example?	Understand	4
6	What are the factors on which skid resistance depends?	Remember	4
7	Write about Intermediate sight distance and head light sight distance?	Remember	3
8	What are the factors controlling the geometric elements?	Remember	3
9	Write about over taking zones? Explain them with neat sketches.	Understand	4
10	What are the various types of cambers and explain the need of camber on pavement and its recommendations?	Understand	3
UNIT-III TRAFFIC ENGINEERING AND REGULATIONS			
1	Define Traffic volume, Traffic Density and Traffic Capacity? Explain each in detail?	Remember	5
2	Explain the design procedure of Traffic signals according to Webster method?	Understand	7
3	Describe in detail about parking studies?	Understand	6
4	Discuss various methods for collecting origin and destination data?	Remember	6
ASSIGNMENT 2			
5	Show various types of traffic signs with neat sketches.	Understand	6
6	Distinguish between On street and Off street parking?	Remember	6
7	Describe various causes for road accidents and write about measures that are to be taken to reduce the road accidents?	Remember	6
8	What are the different types of traffic signal systems?	Remember	5
9	Write about speed and delay studies? Explain them with any two methods.	Understand	5
10.	What are road markings? What is the need for road markings?	Understand	5
UNIT-IV INTERSECTION DESIGN			
1	What are various types of Grade separated Intersections?	Understand	8
2	Write about Rotary Intersection and explain with a neat sketch?	Remember	9
3	Define intersection? What are the types of Intersections and explain the necessity of Intersections?	Remember	8
4	Explain various safety measures to be taken to prevent accidents at Rotary?	Remember	8
5.	What is Channelization and explain the importance with its advantages and disadvantages?	Understand	8

6	What are the design factors that control the design of rotary intersection and explain them in detail?	Understand	9
7	What are various types of Grade separated Intersections?	Understand	9
8	What are the various types of at grade Intersections and explain them with neat sketches?	Understand	9
9	What are the basic forms of Intersection and explain each with two types?	Remember	9
10	What are the advantages and limitations of Rotary Intersection?	Remember	8
UNIT-V			
HIGHWAY MATERIALS, CONSTRUCTION AND MAINTENANCE			
1	Explain the construction of water bound macadam?	Understand	10
2	Explain the construction of cement concrete roads?	Understand	10
3	Explain the construction of gravel roads?	Remember	10
4	Explain the construction of bituminous pavements?	Remember	10
5	How will construct the joints in cc pavements?	Understand	10
6	What are joint filler and seal?	Understand	10
7	What are the different factors for failure of pavements?	Understand	10
8	What do you mean by surface dressing and what is the role of surface dressing in the construction of highway?	Understand	10
9	Give the difference between water bound macadam roads and bitumen bound macadam.	Remember	10
10	How will do the maintenance of roads?	Understand	10

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HOD, CE