CLASS:	MUP			SEMESTER : II
BRANCH:	ARCHITECTURE & PLANNING			SESSION : SP/22

	SUBJECT: AR656 TRANSPORTATION PLANNING			
TIME:2.00	HOURS			FULL MARKS: 50

INSTRUCTIONS:
1. Candidates are required to answer all questions
2. The missing data, if any, may be assumed suitably.
3. Before attempting the question paper, be sure that you have got the correct question paper.

Q.1	What is a design vehicle and what are the parameters of a design vehicle that influences the design of road infrastructure? .	[2]
Q.2	Define the three parameters of traffic flow. State the relationship between speed, flow, and density of traffic.	[2]
Q.3	What are the types of urban and rural roads in India?	[2]
Q.4	In the context of road geometry, what is a curve? Explain the two types of curve along with their implication.	[2]
Q.5	Draw a schematic cross section of a 30 meter wide ROW. Name all the parts clearly on the diagram	[2]
Q.6	What is extra widening? Clearly state and explain the benefits of providing extra widening	[2]
Q.7	What are the differences between economic and financial analysis?	[2]
Q.8	If a goods vehicle with a load: power ratio of 200 lb/hp enters a 2% slop at a speed of 100km/h and travels for 800 meters before it enters a slop of 3% that lasts for 400 meters and merges with a plain stretch of carriageway. What will be the speed of the vehicle when it reaches the plain stretch of the highway? (refer the following graph to solve this)	[4]
Q.9	What is a cordon line? How is it different than zone? State the considerations while identifying cordon line for a study	[4]
Q.10	What is transportation planning? Explain the major challenges associated with it.	[4]
Q.11	What is transportation demand? What are the ways that can be adopted to manage transportation demand in a city?	[4]

Q.12a	Upgradation of a two lane state highway to a six lane highway is planned to be done 5 years from now which will cost Rs.50,00,000. What should be the series of uniform annual payments that need to be set apart to accumulate this amount if the interest rate is 8% per annum?	[5]
	OR	
Q.12b	The cost of construction of a new facility is Rs.20,00,000 at current price, and is met by raising a loan. What is the annual payment amount for 25 years to repay the loan if the rate of interest is 12% per annum?	
Q.13a	Speed of 30 cars were observed, 9 cars were noted to travel at 30 km/h, 12 cars at 40 km/h, 4 cars at 50 km/h, and 5 cars at 45 km/h. Assuming that each car was travelling at a constant speed, determine the time mean speed.	[5]
	OR	
Q.13b	Speed of 30 cars were observed, 9 cars were noted to travel at 30 km/h, 12 cars at 40 km/h, 4 cars at 50 km/h, and 5 cars at 45 km/h Assuming that each car was travelling at a constant speed, determine the space mean speed.	
Q.14	What is TOD? Explain the benefits and challenges associated with TOD.	[5]
Q.15a	What is Road Safety Audit? Explain the stages at which RSA can be performed.	[5]
	OR	
Q.15b	Explain the Traditional Four-Step Travel Demand Forecasting Process	