Fourth Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025
Transportation Engineering

Time: 3 hrs.   Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Briefly explain characteristics of road transport and Jayakar committee recommendations.	10	L1	CO1
	b.	With a neat sketches, explain various tractors affecting alignment.	10	L2	CO1
		OR			
Q.2	a.	Briefly explain about attainment of super elevation.	10	L1	CO1
	b.	Calculate length of transition curve for design speed 65 kmph, radius of curve 220 m, pavement width including extra widening 7.5 m. Allowable rate of introduction of super elevation lin/so (pavement rotated about centre line).	10	L3	CO1
		Module – 2			
Q.3	a.	What are properties of Bituminous mixes? Explain briefly.	8	L2	CO2
	b.	With a neat sketch, briefly explain different types of rigid pavement joints.	12	L1	CO2
		OR			
Q.4	a.	Briefly explain about various functions of components of flexible pavement.	10	L1	CO2
	b.	Briefly explain importance and requirements of Highway Drainage system.	10	L2	CO2
		Module – 3			
Q.5	a.	Briefly explain about Road user and vehicular characteristics.	10	L2	CO3
	b.	Spot speed studies were conducted out at a certain stretch of a highway with mixed traffic flow and consolidated data collected are given below. Determine: i) Upper and lower values of speed limits. ii) Design speed.	10	L4	CO3

Speed range kmph	No of vehicles observed	Speed range kmph	No of vehicles observed
0-10	12	50-60	255
10-20	18	60-70	119
20-30	68	70-80	43
30-40	89	80-90	33
40-50	204	90-100	9

		OR			
Q.6	a.	Explain O and D studies objectives and methods of data collections.	12	L3	CO3
	b.	Explain the steps involved in the IRC method of signal design.	8	L2	CO3
		Module – 4			
Q.7	a.	With neat sketch, explain permanent way and its requirements.	10	L1	CO4
	b.	Estimate the quantities of materials required to construct 1 km long B.G. track with sleeper density.	10	L3	CO4
		OR			
Q.8	a.	Briefly explain the functions and requirements of sleeper and ballast.	10	L1	CO4
	b.	Define station yards. Explain different types of station yards.	10	L2	CO4
		Module – 5			
Q.9	a.	Explain the characteristics of an aircraft which affects the planning and design of air ports.	10	L2	CO4
	b.	Write the comparison between runway of highway.	10	L1	CO4
		OR			
Q.10	a.	Draw a neat sketch of layout of an airport and explain the functions of various components ports.	10	L2	CO4
	b.	The length of runway under standard conditions is 1700 m. The airport site is at an elevation of 260 m. Its reference temperature 32°C. If the runway is to constructed with an effective gradient of 0.2%. Determine corrected runway length.	10	L3	CO4

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