



B.Tech - Odd Sem : End Semester Exam

Academic Year:2020-2021

18CE3103 - Transportation Engineering

Set No: 3

Time:		Max.Marks: 100					
S.NO	Answer All Questions	Choice	Options	Marks	CO	CO BTL	COI BTL
1.	Discuss about Telford's construction with a neat sketch	choice Q-2		10Marks	CO1	2	1
2.	Discuss about Map study and Reconnaissance survey			10Marks	CO1	2	2
3.	answer all questions	choice Q-4		15Marks	CO1	2	1
3.A.	Explain about the factors affecting alignment			7Marks	CO1	2	1
3.B.	Discuss about any two engineering surveys for deciding alignment			8Marks	CO1	2	2
4.	answer all questions			15Marks	CO1	2	1
4.A.	Outline the recommendations of Jayakar committee			7Marks	CO1	2	1
4.B.	Discuss about 1st twenty year road development plan			8Marks	CO1	2	2
5.	Calculate the extra widening required for a pavement of width 7.5 m on a horizontal curve of radius 220 m if the longest wheel base of vehicle expected on the road is 6.6 m. Design speed is 75 kmph.	choice Q-6		10Marks	CO2	3	1
6.	A MDR passing through a flat terrain has a horizontal curve of radius equal to 180 m. Design super elevation, assuming suitable data.			10Marks	CO2	3	1
7.	answer all questions	choice Q-8		15Marks	CO2	3	1
7.A.	A valley Curve is formed by a descending gradient of 1 in 40 which meets an ascending gradient of 1 in 30. Design the total length of valley curve if the design speed is 100kmph so as to fulfill both comfort condition and headlight sight distance for night driving, after calculating the SSD required			7Marks	CO2	3	1
7.B.	On a two lane highway car A & B are moving at a speed of 40 kmph and 80 kmph. Distance between A & C is 450 m. After initial hesitation period of 2 sec driver of A started overtaking operation. Distance between A & B at that time was 30 m. Acceleration of Vehicle A is 1.20 m/Sec ² . Distance between B & A is 25 m. Determine the distance between two cars A & C at the instance of completion of overtaking operation also calculate the desirable length of overtaking zone			8Marks	CO2	3	3
8.	answer all questions			15Marks	CO2	3	2
8.A.	An up gradient of 1 in 50 is meeting with a down gradient of 1 in 40. Design the vertical curve, assuming suitable data			7Marks	CO2	3	2
8.B.	The design speed of a highway is 100 kmph. There is a			8Marks	CO2	3	3

	horizontal curve of radius 300 m on a certain locality. Safe limit of transverse coefficient of friction is 0.15. a) Calculate the super elevation required to maintain the speed? b) If the maximum super elevation of 0.07 is not to be exceeded, calculate the maximum allowable speed on this horizontal curve as it is not possible to increase the radius						
9.	Draw the cross section of flexible pavement and explain about individual layers	choice Q-10		10Marks	CO3	3	1
10.	Draw the cross section of Rigid Pavement and explain about individual layers			10Marks	CO3	3	2
11.	answer all questions	choice Q-12		15Marks	CO3	3	1
11.A.	Discuss about the procedure for determining effective CBR for the design of pavement			7Marks	CO3	3	1
11.B.	Discuss in detail design traffic for flexible pavement design			8Marks	CO3	3	2
12.	answer all questions			15Marks	CO3	3	1
12.A.	Draw a pavement model as per IRC:37-2012 with different strains developed in flexible pavement layers			7Marks	CO3	3	2
12.B.	Discuss about the RIGID PAVEMENT design procedure as per IRC-58-2011			8Marks	CO3	3	2
13.	Discuss about equipments used for highway construction	choice Q-14		10Marks	CO4	3	1
14.	Discuss about Dowel bars and Tie bars and their construction			10Marks	CO4	3	2
15.	answer all questions	choice Q-16		15Marks	CO4	3	1
15.A.	explain the prime coat, Tack coat and seal coat			7Marks	CO4	3	1
15.B.	List out types of deformation and explain about remedial measures			8Marks	CO4	3	2
16.	answer all questions			15Marks	CO4	3	3
16.A.	Discuss about the design procedure of Signals with a sketch			7Marks	CO4	3	3
16.B.	Explain Macroscopic Speed-flow and Flow-Density relations			8Marks	CO4	3	3

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