

MANIPAL INSTITUTE OF TECHNOLOGY

V SEMESTER B.TECH. (CIVIL ENGINEERING)

END SEMESTER EXAMINATIONS, NOV/DEC 2016

SUBJECT: HIGHWAY ENGINEERING [CIE 3104]

REVISED CREDIT SYSTEM (03/12/2015)

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

- ✤ Answer ALL the questions.
- Missing data may be suitably assumed
- Code books are not allowed only the design charts and tables are permitted.

1A.	What are the object various geometric	4 MARKS	CO3			
1B.	Find the stopping suitable data. What	3 MARKS	CO3			
1C.	The speeds of over respectively. If the second, calculate the way traffic,	3 MARKS	CO3			
2A.	The radius of a horis 7.6m and super speed of 100kmph.	5 MARKS	CO3			
2B.	What is ESWL? B finding ESWL.	5 MARKS	CO4			
3A.	Briefly discuss the various seasons.	3 MARKS	CO4			
3B.	Design a cement co Traffic volume = 3 Tyre pressure = 8 Elastic modulus of rate of traffic, r = 7 trial thickness of 3-	7 MARKS	CO4			
	Single axle loads		Tandem axle loads			
	Load in tonnes	% of axle loads	Load in tones	% of axle loads		
	19-21	0.3	22-26	5.0		
	17-19	0.6	18-22	0.5		
	15-17	3.0	14-18	3.0		
	13-15	10.6	<14	2.5		
	0_11-13	19.5				
	<9	21.0				

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4A.	Describe the floating car n advantages and disadvantag	5 MARKS	CO2			
4B.	Estimate the design quantity of occurrence of storm from Width of drainage area alor side drain 300m; length of velocity flow = $0.5m/sec$; v = 0.3 .	5 MARKS	CO4			
5A.	List the stages of engineer Briefly discuss the details co	5 MARKS	CO1			
5B.	Calculate the annual cost below:	5 MARKS	CO5			
	Item	Total cost, Rs in lakhs	Estimated life years	Rate of interest.%		
	Land	875	100	8		
	Earth work	95	40	8		
	Bridges, culverts and drainage	210	60	10		
	Pavement	1320	15	10		
	Traffic signs and road appurtenances	85	5	12		