1.	a) What do you mean by eonsistency test, and which are the experiments we perform for this test? b) How we determine the hardness of aggregate? c) In traffic volume survey why we take the volume of various classes of vehicles?
2.	a) In a flexible pavement why many layers are provided?b) Mention the functions of those layers.c) Will you provide similar layers in a rigid pavement? Justify your answer.d) Why drainage is required in urban streets and regional highways? Are they same or different explain.
3.	 a) When bitumen behaves i) almost as an elastic (brittle) solid. ii) almost as a viscous fluid. iii) within the vireo-elastic range. b) While measuring the stress-strain relationship of bitumen what loading form is used and why? c) What do you mean by emulsion? How emulsions are produced form the base bitumen and why we do so? d) How a cationic and anionic emulsions are produced. Also write the equations.
4.	 a) We can cross the water body by using water-transport, without constructing any bridges or culvert. Then why we consider these two elements as integral parts of a transportation system. b) Compare between bridges and culverts. c) Show the sketch- diagrams of various types of bridges including. i) Suspension bridge, ii) R.C.C. Beam and slab type bridge, iii) Arch type bridge, and iv) R.C.C Bowstring girder. d) What purpose is served by the roadside arboriculture?

5. The properties of two graphs are, a) e=5, v=7 p=3, and μ = 1. b) e=4, v=3, p=1 and μ = 2.

Graph- b

Please draw both the graphs here (below):

Graph - a

CEL 241 (Part-B)

Name :_____

All questions carry equal marks (Total Marks 74+6). Answer should be to the point (in brief). Answer question no 5 and question no 8 on this paper within the vaeant spaces given below,

Major Test

Entry No :_

each of them.

Tuesday 28th November, 06

Group No:_

Majortes CEL 241 Part (C) 28 Nov 2006

Entry No:	Name:		Growp	No:	
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- a. A mixture having the following composition had a compacted unit weight of 2.25 g/c.c. Calculate the void content of the mixture. Coarse aggregate=65% with specific gravity of 2.70, fine aggregate=30% with specific gravity of 2.60, Asphalt=5% with specific gravity 1.00.
 - b. A moist sample has a volume of 460 cc. in natural state and a weight of 790g. The dry weight of the sample is 730g. and specific gravity 2.68. Determine the void ratio, porosity, water content and degree of saturation. Also calculate the shrinkage limit of soil.
 - c. Find the total widening required for a for-lane highway on a horizontal curve of radius 380 m. The design speed of highway is 80 Km ph and the length of longest wheel base of vehicle expected on the highway is 6.8 m.
- 7. In the pavement where fly ash has been used show.
 - a. The detailed cross- section with the various layers, its types and thicknesses.
 - b. What is blanket, why we provide this explain with figure?
 - c. If the fly as is found dry or wet what do we for them respectively?
 - d. What will you do?
 - i) if optimum moisture content (O.M.C.) is satisfied but density not satisfied?
 - ii) if moisture content is greater than O.M.C.?
 - iii) if moisture content is less than O.M.C.?
- Put the chart in order. (within the vacant table given on the right side).
 Column I, II, III, and IV represent Level of Service (LoS), Flow Characteristic (FC), Average Speed (AS), and Traffic Flow (TF) respectively.

LoS	FC	AS	TF
		(Km/hr)	Veh/time/hr
I	П	Ш	IV
F	Free Flow	100	1200
Α	Stable	8	1500
	(Restricted		
	Freedom)		
D	Unstable	65	1200
С	Unstable	190	850
	(Frequent,		
	Stoppages)		
В	Stable	155	1800
	(Reasonable		
	Freedom)		
E	Forced Flow	20	5

I	П	Ш	IV