Total No. of Questions : 10]

SEAT No. :

P3064

[Total No. of Pages :4

[5059]-522
B.E.(Civil)
ADVANCED TRANSPORTATION ENGG.
(2012 Pattern)(Semester-II)(Elective-IV)(401010-B)

Time :2½Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answer Q.No1 or 2, Q.No3 or 4, Q.No 5 or 6, Q.No7 or 8 ,Q.No 9 or 10.***
2) ***All questions are compulsory.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***
5) ***Use of logaritmic tables, sliderule, elelectronic pocket calculator is allowed.***

Q1) a) With a flow diagram only explain the comprehensive transport planning process and explain in detail **[6]**

b) Discuss the various factors affecting the trip generation within a study area. **[4]**

OR

Q2) a) Explain the home interview technique of carrying Origin Destination (O-D) survey **[5]**

b) Explain in brief PMGSY project. **[5]**

Q3) a) Explain how would you as a transportation planner integrate the Intelligent Transportation systems (ITS) to the present Smart city concept. **[5]**

b) Discuss the salient features of JNNURM scheme. **[5]**

OR

Q4) a) What do you mean by Pavement Management System? How are they useful in the management of highway projects. **[5]**

b) Explain **[5]**

i) Congestion cost

ii) Vehicle OPerating Cost.

P.T.O.

Q5) a) Explain in detail the necessity and procedure of conducting parking survey. **[10]**

b) With neat sketches explain the necessity of grade separated intersections. **[6]**

OR

Q6) a) During a traffic survey the following data was recorded on a particular road network **[10]**

i) Two wheelers- 1000 numbers

ii) Cars - 500 numbers

iii) Buses - 100 numbers

iv) Auto rickshaw - 200 numbers

v) Cycle - 50 numbers

1. Work out the PCU using IRC 106-1990.

2. How would you use the obtained data in planning the road network?

b) Write a short note on Automated Signals. **[6]**

Q7) a) Desing a flexible pavement as per IRC 37-2001 for the construction of a new road based on following data. Draw a typical cross- section showing all the basic layers. **[10]**

i) Dual two lane carriageway.

ii) Initial traffic in the year of completion of construction =5600CVPD in both directions.

iii) Traffic growth rate per annum=8%

iv) Design life = 10 years.

v) CBR = 5%

vi) Terrain-Rolling

b) Discuss the advantages of flexible pavements over rigid pavements.**[6]**

OR

Q8) a) Explain the procedure and computation involved in the evaluation of pavement using Benkelmen Beam as per the IRC codal provisions.**[10]**

b) Write a note on skid resistance of a road. **[6]**

Q9) a) Explain the purpose of providing overlays and the design procedure for estimating the thickness of the overlay using IRC 81 **[10]**

b) Explain with neat sketches various types of distresses in rigid pavement. **[8]**

OR

Q10) With respect to rigid pavement, explain the following concepts **[18]**

a) Wheel Load Stresses

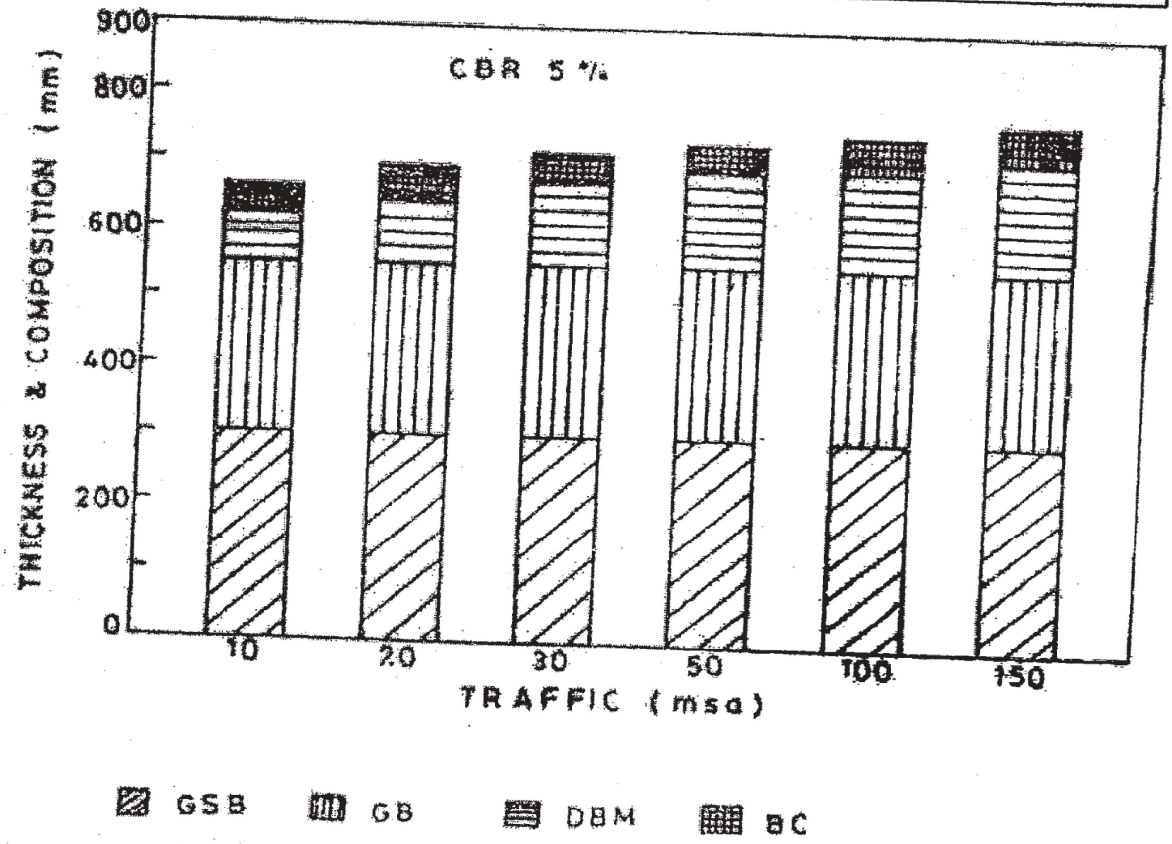
b) Temperature Stresses

c) Joints in the pavement

PAVEMENT DESIGN CATALOGUE

PLATE 2 – RECOMMENDED DESIGNS FOR TRAFFIC RANGE 10-150 msa

CBR 5%				
Cumulative Traffic (msa)	Total Pavement Thickness (mm)	PAVEMENT COMPOSITION		
		Bituminous Surfacing		Granular Base & Sub-base (mm)
		BC (mm)	DBM (mm)	
10	660	40	70	Base = 250 Sub-base = 300
20	690	40	100	
30	710	40	120	
50	730	40	140	
100	750	50	150	
150	770	50	170	



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