Total No. of Questions : 12]

SEAT No :

P 2651

[Total No. of Pages :2

[5154]-22
B.E. (Civil)
ADVANCED TRANSPORTATION ENGINEERING
(2008 Course) (Semester-II) (Elective-IV)

Time : 3 Hours] *[Max. Marks : 100*

Instructions to the candidates:

1) ***Answer Q.1 or Q.2, Q.3 or Q.4, and Q.5 or Q.6 from Section-I Q.7 or Q.8, Q.9 or Q.10 and Q.11 or Q.12 from Section-II.***
2) ***Answer to the two sections should be written in separate books.***
3) ***Figures to the right indicate full marks.***
4) ***Use of logarithmic tables, slide rule, Mollies charts, electronics pocket calculator and steam tables is allowed.***
5) ***Assume suitable data, if necessary.***
6) ***Neat diagrams must be drawn wherever necessary.***

SECTION-I

Q1) a) What is regression analysis? Why is it useful in traffic and transportation planning? Explain with an example. **[6]**

b) Explain how O-D surveys are carried out and how the data is documented and used in transportation planning. **[6]**

c) Explain in brief the following: **[6]**

i) Golden quadrilateral ii) Mono Rail

OR

Q2) Explain in detail following projects:

i) Eastern Freeway link. ii) NHDP various phases. **[18]**

iii) Mumbai Mono-rail project

Q3) a) Discuss in brief the importance of traffic planning for any city. **[6]**

b) Explain in brief House hold survey and O-D Survey. **[10]**

OR

Q4) a) Discuss in brief the challenges faced by local authorities in implementation of BRT system in developing cities of our country. **[6]**

b) What do you mean by intelligent Transportation system? What are the different components of ITS? How it helps to reduce burden on traffic department. **[10]**

[redacted] [redacted] ***P.T.O.***

Q5) a) Explain how to use NPV as an effective tool along with the PBP in daciding various investment alternatives for transport projects with an example. **[12]**

b) What is PCU? Enlist PCU values for any three types of vehicles suggested by IRC. **[4]**

OR

Q6) a) Explain the merits and demerits of BOT projects. **[10]**

b) Write a short note on Internal Rate of return Method. **[6]**

SECTION-II

Q7) a) Explain in brief Floating Car Method of speed and delay study. **[8]**

b) Enlist the various methods of on street parking. Also state the merits and demerits of each method. **[10]**

OR

Q8) a) Explain in brief the factors affecting capacity and level of service. **[10]**

b) Explain in brief the Cordon Line survey and Screen Line survey. **[8]**

Q9) a) Determine the thickness of concrete pavement using Westergaard's corner load formula to support a maximum wheel load of 4100 kg. Allow 10 percent for impact. The tyre pressure may be taken as 5.5 kg/cm^2. The modulus of subgrade reaction is 5.5 kg/cm^3. The flexural strength of concrete may be taken as 40 kg/cm^2. Use a factor of safety of TWO.**[10]**

b) Discuss the guidelines given by IRC for design of flexible pavement design by CBR method. **[6]**

OR

Q10)a) Discuss the various types of failures in flexible pavement. **[10]**

b) What measures you will suggest to avoid delay at Toll collection Points. **[6]**

Q11)a) Why joints are necessary in rigid Pavements? Discuss in brief various types of joints in Rigid pavements. **[10]**

b) Define Unevenness Index. How its measured. **[6]**

OR

Q12)a) What is overlay? Why it is provided? Discuss in brief methodology of design. **[10]**

b) Discuss in brief assumptions made by Mr H M Westergaards while doing analysis of Cement concrete Pavements. **[6]**

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