



Printed Pages : 3

CE – 023

(Following Paper ID and Roll No. to be filled in your Answer Book)

**PAPER ID : 0034**

Roll No.

--	--	--	--	--	--	--	--	--	--	--	--

## **B. Tech.**

(SEM. VIII) EXAMINATION, 2006-07

### **TRAFFIC ENGINEERING**

*Time : 3 Hours]*

*[Total Marks : 100*

- Note :*
- (1) Attempt **all** questions.*
  - (2) All questions carry **equal** marks.*
  - (3) Assume suitable data if required.*
  - (4) Be precise in your answer.*

**1** Attempt any **two** parts of the following : **10×2=20**

- a) Explain the term “Traffic Engineering”. What are the duties of a traffic Engineer? How does the Traffic system in India differs from that in European Countries?
- b) How does the slow moving vehicle affect the capacity of roads? Give examples of slow and fast moving vehicles and their PCU values.
- c) Who are the different types of road users? Explain the factors which affect vehicle performance.

2 Attempt any **two** parts of the following : **10×2=20**

- a) Define overall running or operating speed, peak our factor and traffic density.
- b) Establish relationship between space mean speed and volume, speed and density, and volume and density, and show it by diagram. Also define space and time headway.
- c) What do you understand by queuing theory? Where it is applied and which parameter can be worked out from this theory?

3 Attempt any **two** parts of the following : **10×2=20**

- a) Spot speed studies were carried out at a certain stretch of highway and the consolidated data collected are given below :

<i>Speed range Kmph</i>	<i>No. of Vehicles observed</i>	<i>Speed Range Kmph</i>	<i>No. of vehicles observed</i>
<b>0 to 10</b>	<b>12</b>	<b>51 to 60</b>	<b>255</b>
<b>11 to 20</b>	<b>18</b>	<b>61 to 70</b>	<b>119</b>
<b>21 to 30</b>	<b>68</b>	<b>71 to 80</b>	<b>43</b>
<b>31 to 40</b>	<b>89</b>	<b>81 to 90</b>	<b>33</b>
<b>41 to 50</b>	<b>204</b>	<b>91 to 100</b>	<b>9</b>

Determine (i) the upper and lower values of speed limits for regulations of mixed traffic flow and (ii) the design speed for checking the geometric design elements of the highway.

- b) Explain the terms AADT, hourly flow, and 30<sup>th</sup> highest hourly volume. Where manual methods are preferred over automatic count methods for recording the traffic volume data.
- c) What is the use of origin and destination survey? Name the various O-D survey methods and give merits and demerits of each one.

- 4** Attempt any **four** parts of the following: **5×4=20**
- a) What are the functions of road signs? How many types of road signs you know? Explain each with minimum five examples with sketches.
  - b) How many types of over head signs are there and where these are provided?
  - c) How does the road marking helps in control of traffic? Give different type of road marking and explain the object and zebra line marking.
  - d) What are delineators? Explain the different types of delineators?
  - e) How the traffic rotaries are designed?
  - f) Write a short note on street lighting.
- 5** Attempt any **four** parts of the following : **5×4=20**
- a) What is a traffic island? Write the purpose of providing traffic island.
  - b) What is difference between a grade Separator and interchange? Explain with sketch a Cloverleaf type of interchange.
  - c) Give design criterion for a parking lot.
  - d) What do you understand by kerb parking? Compare it with off street parking.
  - e) Show the conflict points at the intersection of the following types:
    - i) Cross road both two-way
    - ii) T – Intersection, both two way
    - iii) Cross road one way
    - iv) Y-intersection one way.
  - f) Why the parking provided at the basement of a multi-storey building is dangerous?