

Seat
No.

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महात्मा - 001

ELECTIVE - I

**Highway, Projects Planning, Designing &
Economic Evaluation**

P. Pages : 1

Time : Three Hours

Max. Marks : 100

Instructions to Candidates :

1. Do not write anything on question paper except Seat No.
2. Answersheet should be written with blue ink only. Graph or diagram should be drawn with the same pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. Solve **any five** questions.

1. Explain the necessity and objects of highway planning. what are the various systems of classifying roads ? Briefly outline the classification based on location and function as suggested in the Nagpur road plan. 20
2. What are the various requirements of an ideal highway way alignment ? Discuss briefly. Also explain the Engineering surveys needed for locating a new highway. 20
3. Discuss the factors governing the width of carriage way. State the IRC specifications for width of carriage way for various classes of road. 20
4. Discuss the factors on which the overtaking sight distance depends. Derive the expression for calculating the overtaking sight distance on a highway. 20
5. Enumerate the different methods of carrying out traffic volume studies. Indicate the principle of each. explain how the traffic volume data are presented and the results used in traffic Engineering. 20
6. a) Explain flexible and rigid pavement and bring out the points of differences. 10
b) What are the various factors to be considered in the pavement design ?
Discuss the significance of each. 10
7. Enumerate the various methods of flexible pavement design. Briefly indicate the basis of design in each case. 20
8. Write short note on following [All]. 20
i) Highway safety.
ii) Net present value (NPV).
iii) Soil Nailing.
iv) PCU.
