Seat No. | | | | | |

Transportation Engineering - II
(1090)

P. Pages : 2

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. Attempt all **five** questions, from each unit attempt **any two** bit a, b, & c.
5. Neat diagrams must be drawn wherever necessary.
6. Figures to the right indicates full marks.
7. Assume suitable data if necessary.

UNIT - I

1. a) Explain various types of engineering surreys for highway location in detail with their importance. **10**

   b) Enlist various types of Roads. Explain briefly about the material required and method of construction of a WBM road. Also write down advantages & disadvantages of WBM road. **10**

   c) i) Define stopping & overtaking sight distance and derive the expression for calculating stopping sight distance. **5**

   ii) A hill road provided with ruling gradient of 6%. If horizontal curve of 75 m. is to be introduced, calculate the compensated gradient on the curve. **5**

UNIT - II

2. a) What are the importance of traffic engineering ? Explain in brief about the traffic characteristics. **10**

   b) State the desirable properties of bituminous materials. Name the test conducted testing qualities of bituminous material. Explain penetration test with neat sketch & its desirable limits. **10**

   c) i) Differentiate between flexible pavement and Rigid pavement. **5**

   ii) Write short notes on highway drainage. **5**

UNIT - III

3. a) i) Explain in brief factors governing selection of site for heliport.   5

      ii) Explain the suitable zoning requirements for airport site selection.   5

   b) i) Explain in detail about runway & taxiway marking with neat sketches.   6

      ii) Write in short about apron & Hangers.   4

   c) Calculate the actual length of the runway from following data.   10
       Airport elevation = R_L = 100 m.
       Airport reference temperature = 28°C.
       Basic length of runway - 600 m.
       Highest point along length R_L = 98.200
       Lowest point along length R_L = 95.200

UNIT - IV

4. a) Define an economic span of a bridge and work out its expression.
What are the cases in which it is not possible to adopt an economic span ?   10

   b) What are the various methods commonly used in estimation of the flood
discharge at a bridge site ? Explain any one method in detail.   10

   c) i) Enlist different loads considered in design of bridges.   5

      ii) What is clearance and free board ? Why is free board provided.   5

UNIT - V

5. a) Discuss the different methods of erection of steel girder bridges stating
the condition under which each type is used.   10

   b) What are the types of bearings used in bridges ? Explain with neat sketches
three of them.   10

   c) Name the various types of bridges. Explain morable bridge with neat
sketches.   10

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