

(OLD COURSE)**QP Code : 1897**

(3 Hours)

[Total Marks : 100

- N.B. (1) Question No. 1 is compulsory
 (2) Attempt any four questions from remaining Six questions
 (3) Assume appropriate data if necessary and state them clearly

1. Write short notes on any four :

- (a) Factor to be considered while selecting a highway alignment
 (b) Difference between bitumen & tar
 (c) Rotary island
 (d) Peripheral parking scheme
 (e) 30th highest hourly volume

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2. (a) What are the methods of pavement evaluation 5
 (b) Explain PIEV theory with sketch 5
 (c) The speed of overtaking & overtaken vehicles are 70 & 40 kmph respectively on a two way traffic road. If the acceleration of overtaking vehicle is 0.99m/sec^2 10
 (i) Calculate safe overtaking sight distance
 (ii) Mention the minimum length of overtaking zone.
 (iii) Draw a neat sketch of the overtaking zone & show positions of sign posts.
3. (a) Derive an expression for finding the extra widening required on horizontal Curve also explain hoe widening of pavement introduced in field. 10
 (b) Explain the types of bridges bearings. 10
4. (a) What are the objectives of conducting O-D study? State at least four application of O-D study?
 (b) Explain importance of highway maintenance. 6
 (c) Write short note on geotextile & geogrid. 6

5. Write short notes on:-

- (a) Pier & abutment.
 (b) Water bound macadam road.
 (c) Method of soil stabilization.
 (d) PCU

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(TURN OVER)

QP-Con. 8448-15.

6. (a) Differentiate between flexible & rigid pavement in details with neat sketches 10
(b) Explain the drainage problem in hill roads. 5
(c) Afflux 5
7. (a) Calculate the length of stopping sight distance for a two way traffic in A single lane road. The design speed is 70 kmph. Assume reaction time Of driver is 2.5 sec & co-eff of friction is 0.6 for sloping road with
(i) Ascending slope of 2%
(ii) Descending slope of 3% 10
- (b) What are the various test carried out on Bitumen. Explain all test in brief. 10