

Code: CE5T5

**III B.Tech - I Semester – Regular/Supplementary Examinations
October 2019**

**TRANSPORTATION ENGINEERING-I
(CIVIL ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

PART – A

Answer *all* the questions. All questions carry equal marks

11x 2 = 22 M

1.

- a) What are the objectives of highway planning?
- b) What are the different Road Network Patterns available?
- c) Explain the term traffic volume.
- d) Differentiate between Parking Index and parking turnover.
- e) Explain briefly on Unified Soil classification system.
- f) What is Traffic Rotary?
- g) Write about wheel load stresses of rigid pavement.
- h) What are the different layers of a Flexible Pavement?
- i) How the excavation is done in highway construction?
- j) What are the various soil stabilization techniques?
- k) Write short notes on Surface dressing.

PART – B

Answer any **THREE** questions. All questions carry equal marks.

$$3 \times 16 = 48$$

2. a) What are the most important events in the chronological history of the Development of Highways in India?
Elaborate. 8 M
- b) Briefly outline the main feature of various road patterns commonly used. Explain with neat sketches the star and grid pattern. 8 M
3. a) Explain how the speed and delay studies are carried out.
What are the various uses of them? 8 M
- b) Derive an expression for finding the stopping sight distance at levels and at grades. 8 M
4. a) How do you determine the flakiness index of road aggregates? What are the prescribed limits of flakiness index for the road aggregates given by IRC? 9 M
- b) What are the various types of Islands used? Explain the uses of each. 7 M
5. a) What are the factors to be considered in design of pavements? 8 M

b) State the stepwise recommended design procedure for rigid pavements for highways. 8 M

6. a) Specify the materials required for construction of WBM roads. What are the uses and limitations of this type of roads? 8 M

b) Explain the principle, scope and factors affecting the properties of soil-lime stabilization. 8 M