

II B. Tech II Semester Supplementary Examinations, November - 2019
TRANSPORTATION ENGINEERING-I
 (Civil Engineering)

Time: 3 hours

Max. Marks: 70

- Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
 2. Answer **ALL** the question in **Part-A**
 3. Answer any **FOUR** Questions from **Part-B**

PART-A (14 Marks)

1. a) What is the road development vision 2021? (2M)
- b) What is gradient? (3M)
- c) What is collision diagram? (3M)
- d) Differentiate between bitumen and tar. (2M)
- e) Discuss about frictional stresses in rigid pavements. (2M)
- f) What is structural evaluation of a pavement? (2M)

PART-B (4x14 = 56 Marks)

2. a) What are the various objectives of preliminary survey for highway alignment? Enumerate the details to be collected and the various steps in the conventional method. (7M)
- b) Briefly outline the highway development in India. (7M)
3. a) Derive an expression for calculating the overtaking sight distance on a highway. (7M)
- b) The speed of overtaking and overtaken vehicles are 70 and 40 kmph, respectively on a two way traffic road. If the acceleration of overtaking vehicle is 0.99 m/s^2 , calculate the safe overtaking sight distance. (7M)
4. a) Explain spot speed, running speed, space mean speed, time mean speed and average speed. How are spot speed studies carried out? (7M)
- b) What are the advantages and disadvantages of traffic signals? (7M)
5. a) Explain briefly the Marshall method of bituminous mix design. (7M)
- b) What are the various tests for judging the suitability of road stones? Discuss the objects of carrying out each of these tests and their advantages and limitations. (7M)
6. a) Discuss the advantages and limitations of CBR method of design. (7M)
- b) Discuss the application of Burmister's two layer theory in pavement design. (7M)
7. a) What are the advantages and drawbacks of cement concrete roads? Explain cement grouted and rolled concrete layers and their uses. (7M)
- b) Explain briefly the construction of earth roads. Discuss the advantages and limitations of earth roads. (7M)

