

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V (NEW) EXAMINATION – WINTER 2021****Subject Code:3150611****Date:17/12/2021****Subject Name:Transportation Engineering****Time:02:30 PM TO 05:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

	MARKS
Q.1 (a) Compare the roadway and railway transportation.	03
(b) Write a short note on ICAO.	04
(c) Differentiate between Nagpur and Bombay Road development plan.	07
Q.2 (a) Briefly explain classification of urban roads.	03
(b) Explain PIEV theory.	04
(c) Describe various factors controlling the highway alignment.	07
OR	
(c) Derive an expression for calculating the stopping sight distance on a roadway.	07
Q.3 (a) Explain Impact test on aggregate.	03
(b) What are the requirements of widening pavement on horizontal curves?	04
(c) Calculate the length of OSD for a design speed of 70 kmph on a two lane undivided straight level road. Assume reaction time of a driver 2.2 sec, acceleration power of overtaking vehicles 1.10 m/sec^2 and speed of slow moving vehicles 57 kmph.	07
OR	
Q.3 (a) What are the desirable properties of aggregate used in the road construction?	03
(b) Enlist different tests for bitumen and explain softening test briefly.	04
(c) Derive an equation to calculate super elevation on horizontal circular curve.	07
Q.4 (a) What are the significance and requirements of highway drainage system?	03
(b) Describe Construction procedure of Granular Base Course-WBM.	04
(c) Briefly explain the various types of joints used in the construction of cement concrete pavement.	07
OR	
Q.4 (a) Define – (1) Running Speed (2) Spot Speed (3)Journey Speed	03
(b) Discuss various factors to be considered in flexible pavement design.	04
(c) Enlist types of parking. Explain various methods of on street parking.	07
Q.5 (a) What are the advantages and disadvantages of traffic signals?	03
(b) State the concept of PCU value and the factors affecting PCU values.	04
(c) Discuss preventive measures of the accidents.	07
OR	
Q.5 (a) What is the importance of wind rose diagram in runway orientation?	03
(b) Explain the following terms: (1) Jetty (2) Dolphin (3) Dredging (4) Wharf	04
(c) Explain Points & Crossing with neat sketch.	07
