

# GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-V (NEW) EXAMINATION – WINTER 2024

**Subject Code:3150611**

**Date:17-12-2024**

**Subject Name:Transportation Engineering**

**Time:10:30 AM TO 01:00 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
<b>Q.1</b> (a) Discuss various modes of transportation	<b>03</b>
(b) Write a short note on IRC	<b>04</b>
(c) Derive an expression for calculating overtaking sight distance. roadway.	<b>07</b>
<b>Q.2</b> (a) Explain flash and fire test.	<b>03</b>
(b) Write a short note on Directorate General of Civil Aviation	<b>04</b>
(c) Explain the factors controlling the alignment of roads	<b>07</b>
<b>OR</b>	
(c) Calculate the stopping sight distance for a design speed of 120 KMPH with ascending and descending gradient 1 in 35. Assume reaction time as 2.5 sec, coefficient of friction as 0.35	<b>07</b>
<b>Q.3</b> (a) What is camber? Sketch the types of camber.	<b>03</b>
(b) Explain PIEV theory.	<b>04</b>
(c) Calculate extra widening required for a pavement having width of 7.5 meter on a horizontal curve of radius 250 m if longest wheel base of expected vehicle is 7.5 m. Consider design speed as 80 KMPH	<b>07</b>
<b>OR</b>	
<b>Q.3</b> (a) Differentiate between bitumen and tar	<b>03</b>
(b) Distinguish between flexible pavement and rigid pavement	<b>04</b>
(c) Explain various typical failures in rigid pavement with the help of neat sketches.	<b>07</b>
<b>Q.4</b> (a) Define (i) Journey Speed (ii) Super elevation (iii) spot speed	<b>03</b>
(b) Write short note on ESWL.	<b>04</b>
(c) Discuss safety measures to avoid accidents.	<b>07</b>
<b>OR</b>	
<b>Q.4</b> (a) What are the importance of highway drainage?	<b>03</b>
(b) Explain conning of wheels	<b>04</b>
(c) Describe types of parking	<b>07</b>
<b>Q.5</b> (a) Write a short note on types of rail section	<b>03</b>
(b) Differentiate between Dry dock and Wet dock	<b>04</b>
(c) Explain the functions of points and crossings with sketch.	<b>07</b>
<b>OR</b>	
<b>Q.5</b> (a) Enlist the different components of airport and show it in a sketch.	<b>03</b>

- (b) Distinguish between harbor and Port. **04**
- (c) What are the factors affecting runway orientation? Briefly explain wind rose diagram. **07**

\*\*\*\*\*