

GUJARAT TECHNOLOGICAL UNIVERSITY
BACHELOR OF ENGINEERING – SEMESTER 5 – EXAMINATION – SUMMER 2026

Subject Code: 3150611

Date: 06/06/2026

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.**

- Q.1**
- (a) Give merits and demerits of railway transportation. **03**
 - (b) Write short note on: Airport Authority of India. **04**
 - (c) Draw a cross section of road structure showing its components and functions of each. **07**
- Q.2**
- (a) Explain the term : (i) Skid (ii) Slip **03**
 - (b) Explain flakiness and elongation index of aggregates. **04**
 - (c) What are the various tests carried out on bitumen? Explain ductility test. **07**
- OR
- Q.2**
- (c) Discuss the desirable properties of bitumen. Explain the penetration test and its use. **07**
- Q.3**
- (a) What are the advantages of bituminous roads? **03**
 - (b) Distinguish between flexible pavement and rigid pavement. **04**
 - (c) Write short note on: Equivalent Single Wheel Load. **07**
- OR
- Q.3**
- (a) Explain construction steps for WBM. **03**
 - (b) What is routine maintenance of highway? State the item included under it. **04**
 - (c) Explain with sketches the functioning of joints filler and sealer. Discuss the desirable properties of these materials. **07**
- Q.4**
- (a) What are the objects of road side arboriculture? What are its disadvantages? **03**
 - (b) What are the purpose of parking studies? Explain various parking studies. **04**
 - (c) Discuss briefly the different causes of traffic accidents. Also explain the collision diagram and condition diagram. **07**
- OR
- Q.4**
- (a) Give the requirements of an ideal permanent way. **03**
 - (b) Explain 'Coning of wheels' with neat sketch. **04**
 - (c) Draw a neat sketch of simple left hand turnout and show its various components. **07**
- Q.5**
- (a) Write short note on: Marshalling yard. **03**
 - (b) Describe aircraft component parts drawing sketch. **04**
 - (c) List various types of sleeper used on Indian railway. Which one would you consider to be best for modern track? **07**

OR

- Q.5** (a) What is wind rose diagram? What are its uses? **03**
- (b) What is terminal building? What are the facilities provided in the terminal building? **04**
- (c) Enlist different type of breakwater and describe wall type breakwater. **07**
