

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI(NEW) EXAMINATION – WINTER 2022****Subject Code:2160603****Date:15-12-2022****Subject Name:Railway, Bridge & Tunnel 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) Explain necessity of uniformity of gauges in any country. **03**
 (b) Write a short note on Suspension bridge. **04**
 (c) Compare different types of rails based on different criteria. **07**
- Q.2** (a) Write a short note on tilting of rail. **03**
 (b) Define creep of rail & state the effects of creep. **04**
 (c) Describe in detail the Safety in railways – accidents and remedial measures. **07**
- OR**
- (c) Describe Interlocking of signals and points. **07**
- Q.3** (a) Enlist different types of stations and explain any one in brief. **03**
 (b) Describe specification of track ballast. **04**
 (c) Enlist and explain various types of gradients. **07**
- OR**
- Q.3** (a) Explain grade compensation on curves. **03**
 (b) Draw a neat sketch of turnout and explain its components. **04**
 (c) Explain different types of signals used in railway with sketches. **07**
- Q.4** (a) Explain components of bridge with neat sketch. **03**
 (b) Define: Afflux, Scour depth, Economic span, Abutment. **04**
 (c) Explain the advantages of various temporary and movable bridges. **07**
- OR**
- Q.4** (a) Write a short note on maintenance of bridges. **03**
 (b) Describe in brief: rocker and roller bearing. **04**
 (c) Explain classification of bridge based on different criteria. **07**
- Q.5** (a) Describe tunneling in hard rock. **03**
 (b) Write a short note on drainage system in tunnel construction. **04**
 (c) Classify the tunnel based on shape and purposes. **07**
- OR**
- Q.5** (a) Enlist advantages of shaft. **03**
 (b) Describe Safety Precautions in tunneling **04**
 (c) Explain various methods of tunnel ventilation. **07**
