

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER- VI EXAMINATION – SUMMER 2020****Subject Code: 2160603****Date: 26/10/2020****Subject Name: RAILWAY, BRIDGE & TUNNEL 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.

- Q.1**
- (a) Compare railway transportation and road transportation **03**
- (b) Define and state the effect of creep. Explain theory of creep. **04**
- (c) Define and explain the following : Ruling Gradient, super elevation, cant deficiency, negative super elevation , grade compensation **07**
- Q.2**
- (a) Draw a neat sketch of Right hand turn out in railways. **03**
- (b) Differentiate between (i) Station and Yard (ii) Junction and Terminal station **04**
- (c) Describe in detail the Safety in railways – accidents and remedial measures.. **07**
- OR**
- (c) Describe in detail the Interlocking of. signals and points **07**
- Q.3**
- (a) Cross section of Permanent way a railway track in embankment.. **03**
- (b) Explain the stages of construction of new railway line. **04**
- (c) Describe in detail the drainage, maintenance works for a railway track **07**
- OR**
- Q.3**
- (a) Enlist the points to be considered for the site selection for construction of a bridge. **03**
- (b) Enlist the function of bearing in the bridge. Explain rocker and roller bearing **04**
- (c) Explain the following (i) Abutment (ii) Bearing (iii) Afflux (iv) Ease water (v) cut water (vi) Economic span of bridge (vii) wing wall **07**
- Q.4**
- (a) Enlist and explain the advantages of various temporary and movable bridges **03**
- (b) Describe the method of erection of steel girder bridge **04**
- (c) Discuss the methods of testing and strengthening of bridges. **07**
- OR**
- Q.4**
- (a) Give classification of Tunnels with respect to shape and purposal. **03**
- (b) Write short note on “ Safety Precautions in tunneling” **04**
- (c) Discuss in detail the river training works . with neat sketches **07**

- Q.5** (a) State the importance of the alignment of a tunnel and Shafts **03**
- (b) Explain with neat sketch one method of Tunneling in Hard Rock . **04**
- (c) Discuss about (i) Tunnel lining (ii) Lighting in tunnels **07**

OR

- Q.5** (a) Why drainage is necessary in tunnel, explain one method of drainage system. **03**
- (b) Explain with neat sketch one method of Tunneling in Soft ground **04**
- (c) Discuss with neat sketch the method for ventilation during tunnel construction and the measures taken for dust control. **07**

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