

GUJARAT TECHNOLOGICAL UNIVERSITY**BE – SEMESTER- VII EXAMINATION-SUMMER 2023****Subject Code: 3170619****Date: 19/06/2023****Subject Name: Railway and Airport 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.

- Q.1** (a) Give importance of Railways. **03**
 (b) Give classification of Airports as per ICAO. **04**
 (c) Define creep of rail and enumerate various causes (theories) of creep. **07**
- Q.2** (a) Explain the factors affecting selection of railway gauge. **03**
 (b) Explain the conning of wheel with neat sketch. **04**
 (c) Briefly explain different types of gradients used in Railway. What is grade compensation? **07**
- OR**
- (c) Discuss various components of Permanent way with sketch and also give requirements of an ideal permanent way. **07**
- Q.3** (a) List various track fittings. **03**
 (b) Define sleeper. Write short note on Cast iron sleeper. **04**
 (c) What are the facility requirements of a railway station? Draw a neat sketch of layout of any one type of railway station. **07**
- OR**
- Q.3** (a) What are the requirements of a good track drainage system? **03**
 (b) What are the objectives of signaling and interlocking in railways? Enlist different types of signals used in railway. **04**
 (c) Draw a neat sketch of simple left hand turnout and show its various component parts. Explain the working principle of the turnout. **07**
- Q.4** (a) Define: Airport Capacity, Apron, Ballast **03**
 (b) What is function of taxiway in airports? Draw cross section of taxiway showing all components. **04**
 (c) What are the elements to be considered in the geometric design of runway? Explain in detail. **07**
- OR**
- Q.4** (a) What is the function of hanger? What are the requirements of a good hanger site? **03**
 (b) Describe any two aircraft parking system with its advantage and disadvantages. **04**
 (c) What is airport grading? What is its importance? Explain briefly the requirements of airport drainage systems. **07**
- Q.5** (a) Write short note on: Holding Apron. **03**
 (b) What is runway orientation? What are the factors affecting orientation? **04**
 (c) Write short note on : (1)VFR and IFR (2) runway lighting(with sketch) **07**
- OR**
- Q.5** (a) What are the main components of a terminal building? Explain in brief. **03**
 (b) Write short note on Visual aids for landing of aircraft. **04**
 (c) For location of a large airport and for selecting a suitable site what factors should be taken into account? Summarize in brief. **07**
