

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-VII (NEW) EXAMINATION – WINTER 2024****Subject Code:3170619****Date:16-12-2024****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.

MARKS

- | | | |
|------------|--|-----------|
| Q.1 | (a) Explain socio-economical role of railways in development of India. | 03 |
| | (b) Role of the DGCA as regulatory body in field of civil aviation. | 04 |
| | (c) Describe functional classification of railway station in details. | 07 |
| Q.2 | | |
| | (a) What are the facilities provided in the terminal building? | 03 |
| | (b) Write a brief note on diamond crossing. | 04 |
| | (c) Define term “Creep of rails”. Explain causes and effects of creep | 07 |
| OR | | |
| | (c) Explain ICAO recommended geometric design of various runway elements. | 07 |
| Q.3 | | |
| | (a) Write a brief note on holding apron. | 03 |
| | (b) What are switches? Give various types of switches. | 04 |
| | (c) Discuss term ‘Stresses in sleepers’. Also give advantages and disadvantages of concrete sleepers. | 07 |
| OR | | |
| Q.3 | | |
| | (a) Explain importance of airport grading. | 03 |
| | (b) Discuss various gradient used on Indian Railways. What grade compensation on curves is adopted in India? | 04 |
| | (c) Define superelevation. Also give objectives of providing superelevation and discuss negative superelevation in detail. | 07 |
| Q.4 | | |
| | (a) Enumerate different types of spikes used for holding rails. Explain any one briefly. | 03 |
| | (b) Enlist components of railway track. Give functions of sleepers. | 04 |
| | (c) Discuss various factors to be considered while selecting suitable site for an airport. | 07 |
| OR | | |
| Q.4 | | |
| | (a) Enlist fittings and fastenings commonly used for joining rails. Discuss any one briefly. | 03 |
| | (b) Enumerate objectives of signaling. | 04 |
| | (c) Discuss various types of hangers with their functions. | 07 |
| Q.5 | | |
| | (a) Write brief note on runway configuration. | 03 |
| | (b) What is aim of providing adequate and efficient airport drainage? | 04 |
| | (c) Enlist different types of imaginary surfaces. Discuss take-off climb surface and approach surface in detail. | 07 |
| OR | | |
| Q.5 | | |
| | (a) What are purposes of air traffic control? | 03 |
| | (b) Give requirements of a passenger station yard. | 04 |
| | (c) Explain briefly about exit taxiway. Also discuss taxiway lighting | 07 |
