

GUJARAT TECHNOLOGICAL UNIVERSITY
M. E. - SEMESTER – I • EXAMINATION – SUMMER • 2014

Subject code: 711906N**Date: 24-06-2014****Subject Name: Airport Planning and Design****Time: 02:30 pm - 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.

- Q.1** (a) Explain in detail the development of aviation in India. **07**
 (b) List out the various characteristics of aircrafts. How do they affect the planning and design of aircrafts? **07**
- Q.2** (a) Design an exit taxiway joining a runway and a parallel main taxiway. The total angle of turn is 30 degrees and the turn off speed is 65 kmph. Draw neat sketch and show all the design elements in it. Assume $R_1 = 517$ m. Consider the width of runway and main taxiway as 45 m and 22.5 m respectively. **07**
 (b) Discuss the criteria to be kept in mind while selecting the site for airport. **07**
- OR**
- (b) Explain various factors affecting the airport operating capacity. **07**
- Q.3** (a) Describe the different runway geometrics as recommended by ICAO. **07**
 (b) Discuss the principles of design of runway intersection area. Draw a typical sketch showing the gradation of the intersection area. **07**
- OR**
- Q.3** (a) What are the basic patterns of runway configuration? Explain them in detail. **07**
 (b) The length of runway under standard condition is 1620 m. the airport site has an elevation of 280 m. its interference temperature is 33.60°C . If the runway is to be constructed with an effective gradient of 0.20 per cent, determine the corrected runway length. **07**
- Q.4** (a) List out the various methods used for designing flexible airport pavements. Explain any one in detail. **07**
 (b) Draw a neat sketch showing the gate position, pier finger and nose loading bridge for the passengers. Explain them in brief. **07**
- OR**
- Q.4** (a) Explain the different parking configurations for an aircraft. Also mention their merits and demerits. **07**
 (b) Discuss different airport layouts with their neat sketch. **07**
- Q.5** (a) Explain the necessity of airport lighting. **07**
 (b) Explain following terms:
 1. ILS **03**
 2. PAR **02**
 3. ASR **02**
- OR**
- Q.5** (a) Explain the special characteristics of airport drainage. **07**
 (b) Explain floating airports with example. **07**
