

GUJARAT TECHNOLOGICAL UNIVERSITY
M. E. - SEMESTER – I • EXAMINATION – WINTER • 2013

Subject code: 711906N**Date: 06-01-2014****Subject Name: Airport Planning & Design****Time: 10.30 am – 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)** Explain the following terms(with sketches) with respect to Air Transportation/Aviation field: **07**
(i) Airport Capacity (ii) Alternate Airport (iii) Blast-pads
- (b)** State the salient features of Dreamliner 787. **07**
- Q.2 (a)** Explain the following terms (with sketches) with respect to Air Transportation/Aviation field : **07**
(i) Conical Surface (ii) Gate (iii) Holding Apron
- (b)** State the salient features of “flying car” FAA approved and street legal. **07**
- OR**
- (b)** State the salient features of Kansai international airport (JAPAN). **07**
- Q.3 (a)** Explain various categories of runway considering runway length and width as per ICAO. **07**
- (b)** Explain basic runway length. Explain, with sketches (Plan and L-section) the criteria for determining basic runway length for large size turbined power aircraft. **07**
- OR**
- Q.3 (a)** Explain the effect of environs at the airport on the runway length. Give equations for correcting the basic runway length. **07**
- (b)** Explain (with plan view) various components of runway system; specify the widths of the runway as recommended by ICAO for different airports. **07**
- Q.4 (a)** Explain with sketches the significance of Wind (Head, Tail and Cross) for runway orientation. Define usability factor for runway system. **07**
- (b)** Explain taxiway system at the airport. Explain exit taxiway with dimensioned sketch. Sketch typical airport configuration with separate taxiway routes to or from terminal area. **07**
- OR**
- Q.4 (a)** Write note on “Handbook Method of Runway Capacity”. **07**
- (b)** Why pavement markings are required on runway and taxiway? **07**
- Q.5 (a)** What are the functions of Tri-Cycle under-carriage? Sketch Dual-in-tandem wheel configuration. Explain the weight distribution on main gears and nose gear. **07**
- (b)** Explain with sketch the relationship of Payload and Range of Aircraft. **07**
- OR**
- Q.5 (a)** Define Airport Masterplan. Enlist the elements of Airport Masterplan. **07**
- (b)** Explain the difference between highway and airport pavements with reference to tyre pressure, weight of vehicle and load repetitions. **07**
