

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E Sem-I Examination January 2010

Subject code: 711906**Subject Name: Airport Planning and Design****Date: 27 / 01 / 2010****Time: 12.00 – 2.30 pm****Total Marks: 60****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain in brief, the structure and organizational Air Transportation with specific roles of national and international organizations. **06**
- (b) State the global scenario (including India) of the airport ownership and management models. **06**

- Q.2** (a) Explain the following terms with the reference to Air Transportation and Aviation field: **06**
- I. Airport Capacity
 - II. Airway
 - III. Approach Surface
 - IV. Blast Pads
 - V. Cruising Speed
 - VI. ILS

- (b) Compare the salient features of A380 and B747 aircrafts. **06**

OR

- (b) Explain the salient features of new Bangalore and new Hyderabad airports **06**

- Q.3** (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. **06**
- (b) Explain the significance of visual aids and aircraft controls for safe landing and take off. **06**

OR

- Q.3** (a) Explain difference between Highway and Airport pavements with reference to tyre pressure, weight of vehicle and load repetitions. **06**

- (b) Enlist and explain various steps in FAA method of Airport pavement design. **06**

- Q.4** (a) Sketch a flow-diagram showing aircraft and passenger flow through various components of the airport. Explain in brief the functions of each component **06**
- (b) Enlist and explain the factors influencing the location of new airport (site selection process) **06**

OR

- Q.4** (a) Explain the function of airport drainage. Explain the basic principles adopted in airport drainage design. **06**

- (b) Enlist and explain the factors affecting airport capacity. **06**

- Q.5** (a) Explain, with sketches (plan and L section) the criteria for determining basic runway length for large size turbine power aircraft **06**

- (b) Calculate basic runway length from the following performance data of the design aircraft. **06**

Sr. No.	Characteristics	Normal Take off	Engine- Failure	
			Take off	Aborted Take off
1	List-off distance	2120	2483	-
2	Distance of 11 m height(D11)	2422	2756	-
3	Accelerated stop distance	-	-	2877

Stop distance (landing) = 1514 m

Note: All distances are in meters

OR

- Q.5** (a) Explain the effects of environs at the airport on the runway length. Give the equations for correcting the basic runway length. **06**
- (b) Enlist various air traffic navigational aids(enroute and terminal area) and their specific functions **06**
