Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME- SEMESTER II– EXAMINATION – SUMMER 2015

Subject Code: 2721312 **Date: 30/05/2015**

Subject Name: Airport System Planning and Design

Time: 2:30 PM – 5:00 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)**	Describe briefly the growth of Airline in India. Briefly explain the open sky policy of India.	**07**
	(b)	Name the different characteristics of aircrafts. How do they affect the planning and design of airports?	**07**
Q.2	**(a)**	What do you understand by the term airport capacity? What are the factors affecting airport capacity?	**07**
	(b)	What do you understand by the term runway capacity? What are the factors affecting runway capacity?	**07**
		OR	
	(b)	What are the basic patterns of runway configuration? Discuss each pattern. What pattern has been recommended for international airports in India?	**07**
Q.3	**(a)**	Explain the difference between highway and airport pavements with reference to the tyre pressure, weight of vehicle and load repetitions.	**07**
	(b)	What is wind rose diagram? What is its utility? What are its types? Explain each type	**07**
		OR	
Q.3	**(a)**	Design an exit taxiway which joins a runway and a main parallel taxiway. The total angle of turning is 40^0 The aircraft can enter the taxiway with a maximum turn off speed of 65 kmph. Draw a neat sketch and indicate all the design elements	**07**
	(b)	What do you understand by terminal area? What are the facilities provided in terminal area?	**07**
Q.4	**(a)**	Explain the necessity of airport drainage. What are its special characteristics?	**07**
	(b)	At an airport site at sea level with standard atmospheric condition, the runway lengths required for takeoff and landing are 2000mt. and 2400mt. respectively. The proposed airport is situated at an altitude of 200mt. If the airport reference temperature is 25^0c and if the effective runway gradient is 0.35%, calculate the length of runway to be provided.	**07**
		OR	
Q.4	**(a)**	Draw a typical sketch showing the general lighting pattern for a major airport.	**07**
	(b)	What are the different parking configurations for an aircraft? Explain the merits and demerits of each method of parking.	**07**
Q.5	**(a)**	Explain briefly the various methods of airport pavement design	**07**
	(b)	What are the imaginary surfaces? What is their significance? Explain with the aid of neat sketches the shape of each surface for different types of airport.	**07**
		OR	

Q.5	**(a)**	Explain the various factors which affect the size of gate position. How will you decide the number of gate position required by an airline?	**07**
	(b)	Briefly explain the impact of airport on the environment.	**07**

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