GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VIII • EXAMINATION – SUMMER • 2015

Subject Code: 180104   **Date: 05/05/2015**
Subject Name: Aircraft Control & Navigation
Time:10.30am-01.00pm   **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 satellite navigational system with suitable block diagram.	**07**
	(b)	Describe the Euler angle system in detail.	**07**
Q.2	**(a)**	Explain pitch orientation control system with control stick with function diagram.	**07**
	(b)	Explain the principles and applications of aircraft autopilot system with block diagram.	**07**

OR

	(b)	Define navigation. Explain its principles and applications in brief.	**07**
Q.3	**(a)**	With the help of suitable example explain radio navigation system.	**07**
	(b)	Write short note: (1)Turn compensation	**07**
		(2)Dutch roll	

OR

Q.3	**(a)**	Explain inner loop and outer loop control system with suitable block diagram.	**07**
	(b)	Derive the momentum equation of motion of an aircraft.	**07**
Q.4	**(a)**	With the help of suitable example explain high roll rate on stability of an aircraft.	**07**
	(b)	Explain yaw orientation control system with suitable diagram.	**07**

OR

Q.4	**(a)**	Explain inertial cross-coupling with the equation of motion.	**07**
	(b)	Describe acceleration control system with suitable block diagram.	**07**
Q.5	**(a)**	What do you understand by Duplex control system? Explain it with suitable block diagram.	**07**
	(b)	Draw a block diagram and explain roll stabilization of missile control system.	**07**

OR

Q.5	**(a)**	Write a short note:(1)Terrain matching navigation	**07**
		(2)Automatic landing and approach	
	(b)	Explain flight management system with suitable diagram.	**07**

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