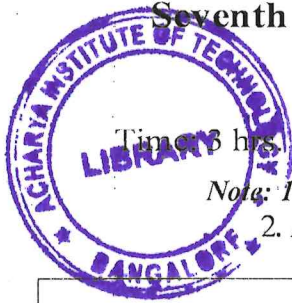


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Seventh Semester B.E./B.Tech. Degree Examination, June/July 2026 Air Traffic and Weather

Time: 3 hrs.

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.*

Module – 1			M	L	C
Q.1	a.	Describe the structure of the Earth's atmospheres, highlighting the characteristics of each layer.	10	L2	CO2
	b.	Explain the principle of altimetry and derive the expression for pressure altitude. Discuss the factors affecting the accuracy of altimeter readings.	10	L3	CO2
OR					
Q.2	a.	At sea level, the atmospheric pressure is 1013m bar. Calculate the pressure at an altitude of 5 Km above sea level, assuming a temperatures lapse rate of 6.5 °C/Km and a sea level temperature of 288 K.	5	L3	CO1
	b.	Explain the process of cloud formation and precipitation. Discuss the role of wind pattern and moisture in influencing regional climate and weather.	15	L2	CO2
Module – 2					
Q.3	a.	Explain icing types that occur on aircraft surface.	5	L1	CO1
	b.	Explain the formation of jet streams and their impact on aviation.	10	L2	CO1
	c.	List out the consequences of ice formation over the aircraft.	5	L1	CO1
OR					
Q.4	a.	Discuss the specific challenges of flying in Arctic versus tropical weather.	10	L2	CO3
	b.	Explain the strategies used for thunderstorm detection, avoidance and mitigation in air traffic operation.	10	L2	CO3
Module – 3					
Q.5	a.	Illustrate the overview of Time-Based Flow Management (TBFM) used in Air traffic.	10	L2	CO1
	b.	Briefly describe the types of working of Ground Delay Programs (GDP) in air traffic management.	10	L2	CO2

OR

Q.6	a.	What is Airport Capacity? Discuss the various factors affecting airport capacity.	10	L2	CO1
	b.	Give a brief description about day to day problem faced by Air Traffic Control System.	10	L2	CO1

Module – 4

Q.7	a.	Elucidate the different weathers information tools used in making traffic management decisions.	10	L3	CO1
	b.	Discuss the Severe Weather Avoidance Plan (SWAP) used in ATC system.	10	L2	CO1

OR

Q.8	a.	Write short note on : i) Routes ii) Coded Departure Routes iii) National Playbook iv) Airspace Flow Programs.	12	L2	CO
	b.	Illustrate the concept and operation of global air traffic management.	8	L3	CO

Module – 5

Q.9	a.	List the basic technologies used in air traffic control systems. Describe in detail.	10	L2	CO
	b.	Give brief discussion about purpose and features of Aviation Call Signs.	10	L2	CO

OR

Q.10	a.	Discuss and Describe about METAR for reporting weather information.	10	L2	CO3
	b.	Describe about METAR for reporting weather information.	10	L2	CO3
