

**Centre for Aerospace & Defence Laws (CADL)
DIRECTORATE OF DISTANCE EDUCATION
NALSAR UNIVERSITY OF LAW, HYDERABAD**

M.A. (AVIATION LAW & AIR TRANSPORT MANAGEMENT)

Academic Year: 2024-2025

Third Semester Repeat Examination (May, 2025)

2.3.8. Air Space & Air Traffic Management

Duration of the Examination: 2 ½ hours

Total Marks: 70 marks

INSTRUCTIONS TO CANDIDATES

- a) Read the instructions carefully and adhere to the same.
 - b) Please mention your DDE ID No., date of the exam, name of the programme & subject on the Answer Sheet and the Additional Answer Sheets, if any.
 - c) The questions to be interpreted as given and no clarification can be sought from the Invigilator.
 - d) Clearly indicate the question numbers while answering them. Answers without question numbers / wrong question numbers will not be evaluated.
 - e) Write the answers clearly and neatly. Answers in illegible handwriting will not be taken into consideration.
 - f) Candidates are prohibited to carry phones or any other electronic devices, books, material etc. in the Examination Hall.
 - g) Copying is strictly prohibited and is considered as a serious academic misconduct and the University will take action as it deems fit.
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Section – A

Answer FIVE questions out of SEVEN questions and each question carries 10 marks. (5 x 10 marks = 50 marks)

1. How is air traffic management done by use of advanced technologies like ADS-B and radar systems?
2. Temporary Reserved Areas (TRAs) are specific portions of airspace that are temporarily allocated for the exclusive use of a particular user, such as military operations or special aviation activities. How do TRAs and restricted airspaces influence the operational strategies and decision-making processes in civilian and military aviation?
3. Using a real-world example, analyze how ICAO's air traffic management provisions contribute to global aviation safety and evaluate their effectiveness in addressing operational challenges.

4. In 2023, during the holiday season, a major international airport in Southeast Asia reported severe delays, particularly due to increased air traffic congestion. The major factors contributing to congestion were the high volume of flights and weather disruptions that led to extended holding patterns, fuel shortages, and passengers' complaints about missed connections and poor service. Airlines struggled to manage schedules, while air traffic controllers worked under immense pressure to ensure safety. Suggest strategies that airlines and air traffic management authorities can adopt to mitigate similar challenges in the future.
5. An airline known for its low-cost strategy is rapidly expanding its fleet and routes. How can the expansion impact air traffic management systems without compromising safety?
6. What are the key technologies used in ensuring seamless coordination between pilots and air traffic controllers (ATC)? Explain each of their roles by providing a suitable example.
7. Unmanned Aerial Vehicles (UAVs), commonly referred to as drones, are aircraft that operate autonomously or through remote control without a human pilot onboard. Examine the process of integrating UAVs into controlled airspace, highlighting the associated challenges and proposing solutions to ensure safe and efficient operations.

Section – B

Write short notes on any FOUR questions out of SIX questions and each question carries 05 marks. (4 x 5 marks = 20 marks)

- A) What are the challenges faced by Air Traffic Control (ATC) due to uncertain weather conditions?
- B) Outline the key guidelines set by the International Civil Aviation Organization (ICAO) regarding air traffic management.
- C) How are airspaces classified? Discuss the importance of each classification.
- D) What measures are taken by Air Traffic Control (ATC) to ensure avoidance of collision?
- E) What are the challenges of managing airspace in high-density traffic regions?
- F) What is the purpose of Temporary Reserved Areas (TRA) in airspace management?