

Hall Ticket No

Question Paper Code: AAE526



# INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad - 500 043

## MODEL QUESTION PAPER-II

B.Tech VI Semester End Examinations, November- 2019

Regulations: R18

### AIR TRANSPORTATION SYSTEM (AERONAUTICAL ENGINEERING)

Time: 3 hours

Max. Marks: 70

Answer ONE Question from each Unit

All Questions Carry Equal Marks

All parts of the question must be answered in one place only

#### UNIT – I

1. a) What are the causes and effects of the downsizing in two major segments of the government market? Describe the outlook for the civil aviation market in the early 2000s [7M]  
b) Describe briefly about the structure of Airline Industry between the years 1960-1980. [7M]
2. a) A flight carrying 127 passengers over 987km with a seating capacity of 140 and generates 960000 of total passenger revenue. Find the average load factor and yield? [7M]  
b) Explain the economic growth in the air transportation between the years 2000-2005 [7M]

#### UNIT – II

3. a) What is deregulation and Describe about its role in International Air Transport Association [7M]  
b) What is very high frequency? Write about the use of press-to-transmit (PTT) buttons. [7M]
4. a) What is distance measuring equipment and Explain about the difference between DME and VOR. [7M]  
b) Explain about the terms Wireless-telegraphy and radiotelephony in detail with help of neat sketches [7M]

#### UNIT – III

5. a) What do you mean by the Aircraft Communication Addressing and Reporting System and explain with the help of neat sketch? [7M]  
b) What do you mean by Traffic Collision Avoidance System and explain with the help of neat sketch? [7M]

6. a) What do you mean by traffic conflict-alerting system and explain with the help of neat sketch [7M]  
b) What do you mean by the Performance management systems and explain with the help of neat sketch? [7M]

#### UNIT – IV

7. a) What are the different approaches to meet the airport construction successfully by taking issues explain in detail? [7M]  
b) What do you mean by landing distance available and explain about Runway end safety areas? [7M]
8. a) What are Passenger terminals? Explain about different passenger terminals that are found in airports [7M]  
b) What is Obstacle safeguarding in context of airports explain in detail about obstacle limitation surfaces with the help of a neat sketch? [7M]

#### UNIT – V

9. a) What is Federal Aviation Administration and discuss the main functions of the Federal Aviation Administration [7M]  
b) What are first generation 'automated' ATC systems. Explain in detail about the working principle of automated atc system. [7M]
10. a) Explain in detail about different generations of 'automated' Air Traffic control systems [7M]  
b) Explain about the International Civil Aviation Organization future air-navigation systems [7M]



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## COURSE OBJECTIVES:

The course should enable the students to:

|     |   |
|-----|---|
| I   | Apply knowledge and skills in the aviation industry and make more effective decisions for organization.                         |
| II  | Provide insight into current trends and issues in civil aviation, such as aviation safety and security, law and new technology. |
| III | Understand complexity of air transport operation and to find best solution for the issues.                                      |
| IV  | Understand many transport issues involved in handling passengers, freight of aircraft.  |

## COURSE OUTCOMES (COs):

|      |  |
|------|--|
| CO 1 | Explain the roles of the International Civil Aviation Organization and the International Air Transport Association in fostering safe and efficient air transport |
| CO 2 | Describes national and international rules and regulations for air transportation  |
| CO 3 | Identify organizations controlling the regulatory processes in international aviation  |
| CO 4 | Apply basic science principles in estimating stopping and passing sight distance requirements  |
| CO 5 | Understand the factors influencing road vehicle performance characteristics and design.  |

## COURSE LEARNING OUTCOMES (CLOs):

|           |  |
|-----------|--|
| AAE526.01 | Communicate at technical level with aviation service providers and aerospace professionals and organizations about aircraft and their systems. |
| AAE526.02 | Describe the effects the atmosphere has on aircraft operations and the implications for the air transport industry.                            |
| AAE526.03 | Analyze the aerodynamic and associated performance characteristics for aircraft and infer the corresponding economic implications.             |
| AAE526.04 | Assess the impact of contemporary challenges and practical aspects in air transportation.  |
| AAE526.05 | Evaluate pros and cons of emerging technological aspect and responses.   |
| AAE526.06 | Develop an applied knowledge to the global aviation industry and key issues.   |
| AAE526.07 | Understand international law and policies related to air transportation activities.  |
| AAE526.08 | Assess the impact of airline activities and operations on economics and finances.  |
| AAE526.09 | Evaluate the various factors influencing aviation industry and effects of these factors on air transportation.                                 |
| AAE526.10 | Developing capability to assess functions of airports, the basic principles of aviation policy.  |
| AAE526.11 | Execution of aviation policies related to airline economics and flight planning.   |
| AAE526.12 | Implementing standard procedure for air cargo handling and its management.   |
| AAE526.13 | Exposit legal, social, economic, ethical and environment interest while undertaking air transportation system.                                 |

|           |   |
|-----------|---|
| AAE526.14 | Acquire the competencies to handle airspace, aircrafts and air traffic control system.        |
| AAE526.15 | Develop knowledge to coordinate with different organization in the air transportation system. |

### MAPPING OF SEMESTER END EXAMINATION - COURSE OUTCOMES

| SEE Question No | Course Learning Outcomes |           | Course Outcomes  | Blooms Taxonomy Level |            |
|-----------------|--------------------------|-----------|--|-----------------------|------------|
| 1               | a                        | AAE526.02 | Describe the effects the atmosphere has on aircraft operations and the implications for the air transport industry                             | CO 1                  | Understand |
|                 | b                        | AAE526.02 | Describe the effects the atmosphere has on aircraft operations and the implications for the air transport industry                             | CO 1                  | Understand |
| 2               | a                        | AAE526.01 | Communicate at technical level with aviation service providers and aerospace professionals and organizations about aircraft and their systems. | CO 1                  | Understand |
|                 | b                        | AAE526.03 | Analyze the aerodynamic and associated performance characteristics for aircraft and infer the corresponding economic implications              | CO 1                  | Understand |
| 3               | a                        | AAE526.05 | Evaluate pros and cons of emerging technological aspect and responses.   | CO 2                  | Understand |
|                 | b                        | AAE526.06 | Develop an applied knowledge to the global aviation industry and key issues..  | CO 2                  | Remember   |
| 4               | a                        | AAE526.07 | Understand international law and policies related to air transportation activities.  | CO 2                  | Understand |
|                 | b                        | AAE526.06 | Develop an applied knowledge to the global aviation industry and key issues.   | CO 2                  | Understand |
| 5               | a                        | AAE526.08 | Assess the impact of airline activities and operations on economics and finances...  | CO 3                  | Understand |
|                 | b                        | AAE526.09 | Evaluate the various factors influencing aviation industry and effects of these factors on air transportation..                                | CO 3                  | Understand |
| 6               | a                        | AAE526.11 | Execution of aviation policies related to airline economics and flight planning  | CO 3                  | Understand |
|                 | b                        | AAE526.12 | Implementing standard procedure for air cargo handling and its management  | CO 3                  | Understand |
| 7               | a                        | AAE526.11 | Execution of aviation policies related to airline economics and flight planning  | CO 4                  | Understand |
|                 | b                        | AAE526.12 | Implementing standard procedure for air cargo handling and its management  | CO 4                  | Understand |
| 8               | a                        | AAE526.13 | Exposit legal, social, economic, ethical and environment interest while undertaking air transportation system                                  | CO 4                  | Understand |
|                 | b                        | AAE526.12 | Implementing standard procedure for air cargo handling and its management  | CO 4                  | Understand |
| 9               | a                        | AAE526.13 | Exposit legal, social, economic, ethical and environment interest while undertaking air transportation system.                                 | CO 5                  | Understand |
|                 | b                        | AAE526.15 | Develop knowledge to coordinate with different organization in the air transportation system..   | CO 5                  | Understand |
| 10              | a                        | AAE526.14 | Acquire the competencies to handle airspace, aircrafts and air traffic control system.   | CO 5                  | Understand |
|                 | b                        | AAE526.15 | Develop knowledge to coordinate with different organization in the air transportation system..   | CO 5                  | Understand |

Signature of Course Coordinator

HOD, AE