



INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad - 500 043

AERONAUTICAL ENGINEERING

TUTORIAL QUESTION BANK

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| Course Name | : | AIR TRANSPORTATION SYSTEMS |
| Course Code | : | A52110 |
| Class | : | III B. Tech I Semester |
| Branch | : | AERO |
| Year | : | 2017 – 2018 |
| Course Coordinator | : | Ms. Mary Thraza, Assistant Professor |
| Course Faculty | : | Mr. R Suresh Kumar, Assistant Professor, Ms. Mary Thraza, Assistant Professor |

OBJECTIVES

To meet the challenge of ensuring excellence in engineering education, the issue of quality needs to be addressed, debated and taken forward in a systematic manner. Accreditation is the principal means of quality assurance in higher education. The major emphasis of accreditation process is to measure the outcomes of the program that is being accredited.

In line with this, Faculty of Institute of Aeronautical Engineering, Hyderabad has taken a lead in incorporating philosophy of outcome based education in the process of problem solving and career development. So, all students of the institute should understand the depth and approach of course to be taught through this question bank, which will enhance learner's learning process.

| S No | Question | Blooms taxonomy level | Course Outcomes |
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| UNIT - I AVIATION INDUSTRY & ITS REGULATORY AUTHORITIES Part - A (Short Answer Questions) | | | |
| 1 | What are the main points about history of aviation evolution in the era of 1960 | Knowledge | 1 |
| 2 | Define development, growth in the aircraft transportations | Knowledge | 1 |
| 3 | Define oligopolistic | Create | 1 |
| 4 | Define the following : industry , transportation systems | Create | 1 |
| 5 | Write about the economic growth in a country | Knowledge | 1 |
| 6 | What do you mean by passenger load factor | Create | 1 |
| 7 | Describe the aviation industry characteristics | Create | 2 |
| 8 | Write about economic impact types in air transportation systems | Create | 2 |
| 9 | What are the characteristics of oligopolistic industries | Create | 2 |
| 10 | What effects got improved after world war- ii | Create | 2 |

| Part - B (Long Answer Questions) | | | |
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| 1 | Explain the history evolution for the aircraft systems | Understand | 1 |
| 2 | Explain the economic characteristics. | Knowledge | 1 |
| 3 | Explain the Significance of airline passenger load factors. | Knowledge | 2 |
| 4 | Explain the Significance economic impact | Create | 2 |
| 5 | Explain the development, growth, challenges | Understand | 2 |
| 6 | Explain the Airlines as oligopolistic | Create | 2 |
| 7 | Explain the Airline Industry structure in the 1960-1980' | Understand | 2 |
| 8 | Explain the economic growth in the air transportation | Understand | 1 |
| 9 | Explain the economic impact- types and causes in the airlines | Knowledge | 1 |
| 10 | Explain the Aerospace Industry As common term | Understand | 1 |
| Part - C (Problem Solving and Critical Thinking Questions) | | | |
| 1 | Explain the history evolution for the aircraft systems | Understand | 2 |
| 2 | Explain the economic characteristics and Significance of airline passenger load factors. | Apply | 2 |
| 3 | Explain the Aerospace Industry As common terms in detail | Apply | 2 |
| 4 | Explain the Significance economic impact and development, growth, challenges | Apply | 2 |
| UNIT - II AIRSPACE Part – A (Short Answer Questions) | | | |
| 1 | What do you mean by physical issues | Create | 4 |
| 2 | Define the following :demand forecast | Knowledge | 3 |
| 3 | Define the following FAA,ICAO ,DGCA | Create | 3 |
| 4 | Write about the functions of FAA | Create | 3 |
| 5 | Write about the functions of DGCA | Create | 3 |
| 6 | Write about the functions of ICAO | Knowledge | 3 |
| 7 | Write about the functions of IATA | Create | 3 |
| 8 | Write about the types of risk assessments | Create | 3 |
| 9 | Write about the security regulation types | Knowledge | 3 |
| 10 | Write about Reliability of forecasts | Knowledge | 3 |
| Part - B (Long Answer Questions) | | | |
| 1 | Explain the formation of international air law | Create | 3 |
| 2 | Explain the formation and responsibilities of regulatory bodies like ICAO,IATA,DGCA and FAA. | Knowledge | 4 |
| 3 | Explain the importance of air safety regulations | Understand | 4 |
| 4 | Explain FEDERAL AVIATION ADMINISTRATION (FAA) is the one of the national authority what is the main functions of the FAA ,and how can you support your answer as it's very important to fly with these certificates in every national policies explain with FAA administration chart. | Apply | 4 |

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| 5 | Explain The International Civil Aviation Organization (ICAO) is the one of the national authority what is the main functions of the ICAO ,explain with flow chart support your answer it's compulsory required license to fly different nations | Understand | 4 |
| 6 | Explain about ICAO future air navigation systems (FANS) and its advantages and disadvantages when compared to existing systems | Create | 3 |
| 7 | Explain International Air Transport Association(IATA) is an international industry trade group of airlines write about its functions and regulations | Knowledge | 4 |
| 8 | Write about the risk assessment in the airport support your answer with it's compulsory for every airport | Understand | 4 |
| 9 | Write the security regulation types in the airports and aviation field for travelling of passenger in different countries | Create | 3 |
| 10 | Write the functions of ICAO and it's certifications | Create | 4 |

Part - C (Problem Solving and Critical Thinking Questions)

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| 1 | Explain the formation of international air law | Create | 3 |
| 2 | Explain the formation and responsibilities of regulatory bodies like ICAO,IATA,DGCA and FAA. | Knowledge | 4 |
| 3 | Explain the importance of air safety regulations | Understand | 4 |
| 4 | Explain FEDERAL AVIATION ADMINISTRATION (FAA) is the one of the national authority what is the main functions of the FAA ,and how can you support your answer as it's very important to fly with these certificates in every national policies explain with FAA administration chart. | Apply | 4 |
| 5 | Explain The International Civil Aviation Organization (ICAO) is the one of the national authority what is the main functions of the ICAO ,explain with flow chart support your answer it's compulsory required license to fly different nations | Understand | 4 |
| 6 | Explain about ICAO future air navigation systems (FANS) and its advantages and disadvantages when compared to existing systems | Create | 3 |
| 7 | Explain International Air Transport Association(IATA) is an international industry trade group of airlines write about its functions and regulations | Knowledge | 4 |
| 8 | Write about the risk assessment in the airport support your answer with it's compulsory for every airport | Understand | 4 |
| 9 | Write the security regulation types in the airports and aviation field for travelling of passenger in different countries | Create | 3 |
| 10 | Write the functions of ICAO and it's certifications | Create | 4 |

**UNIT-III
AIRCRAFT**

Part - A (Short Answer Questions)

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| 1 | Explain about the about the DME with the help of neat sketch | Knowledge | 4 |
| 2 | Explain about the SSR with the help of neat sketch | Knowledge | 4 |
| 3 | Explain about the NAVIGATION with the help of neat sketch | Knowledge | 3 |
| 4 | What do you mean by the ACARS and explain with the help of neat sketch | Knowledge | 4 |
| 5 | What do you mean by the GPWE and explain with the help of neat sketch | Knowledge | 4 |
| 6 | What do you mean by TCAS and explain with the help of neat sketch | Knowledge | 3 |
| 7 | What do you mean by EFIS and explain with the help of neat sketch | Knowledge | 4 |

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| 8 | What do you mean by AFCS and explain with the help of neat sketch | Knowledge | 4 |
| 9 | What do you mean by VHF and explain with the help of neat sketch | Knowledge | 1 |
| 10 | What do you mean by the PMS and explain with the help of neat sketch | Knowledge | 5 |
| Part – B (Long Answer Questions) | | | |
| 1 | Explain the deferent type of the frequencies used in the navigation felid with ranges in hedges | Understand | 4 |
| 2 | Explain the process of Secondary surveillance radar (SSR) in the aviation signaling process explain with proper diagram | Understand | 4 |
| 3 | Explain Distance measuring equipment (DME)process for the aviation system with neat figure and support your answer it's compulsory in the pilot cabin | Understand | 3 |
| 4 | Explain Aircraft Communications Addressing and Reporting System(ACARS) is the navigation system used from satellites for navigation explain the process of ACARS in detail with figure | Understand | 4 |
| 5 | Explain Traffic collision avoidance system(TCAS) is important in safe journey explain process with figure | Understand | 4 |
| 6 | Write a short notes on: a) Passenger Load factor b) Unique economic characteristics of Air transportation systems. | Create | 3 |
| 7 | Explain Instrument landing system (ILS) is for the safety landing system explain the process with neat sketch, | Understand | 4 |
| 8 | Explain VHF omni- directional radio range (VOR) is the signals explain with diagrams and write applications of any four explain with diagrams and write applications of any four | Understand | 4 |
| 9 | Explain Navigation has the process of locating points and positions in the earth this is done by satiates explain the process of navigatiion | Understand | 3 |
| 10 | Explain the process of radar in the aviation field SSR and primary radar process | Understand | 4 |
| Part - C (Problem Solving and Critical Thinking Questions) | | | |
| 1 | Explain Aircraft Communications Addressing and Reporting System(ACARS) is the navigation system used from satellites for navigation explain the process of ACARS in detail with figure | Understand | 5 |
| 2 | Explain Traffic collision avoidance system(TCAS) is important in safe journey explain process with figures | Understand | 5 |
| 3 | Write a short notes on: a) Passenger Load factor b) Unique economic characteristics of Air transportation systems. | Create | 5 |
| 4 | Explain Instrument landing system (ILS) is for the safety landing system explain the process with neat sketch, | Understand | 6 |
| 5 | Explain VHF omni- directional radio range (VOR) is the signals explain with diagrams and write applications of any four explain with diagrams and write applications of any four | Understand | 6 |
| 6 | Explain Navigation has the process of locating points and positions in the earth this is done by satiates explain the process of navigatiion | Understand | 6 |
| 7 | Explain the process of radar in the aviation field SSR and primary radar process | Understand | 6 |
| UNIT-IV AIRPORTS Part – A (Short Answer Questions) | | | |
| 1 | What do you mean by air fleet utilization | Knowledge | 6 |

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| 2 | What do you mean by Indirect operating costs | Knowledge | 6 |
| 3 | What do you mean by direct operating costs | Knowledge | 4 |
| 4 | What do you mean by Computerized reservation systems | Knowledge | 4 |
| 5 | What is the meaning of run way capacity | Knowledge | 3 |
| 6 | Explain about run way characteristics of an airport | Knowledge | 4 |
| 7 | What is the meaning of apron | Knowledge | 4 |
| 8 | What do you mean by passenger terminals | knowledge | 7 |
| 9 | What do you mean by monitoring | Knowledge | 7 |
| 10 | What do you mean by maneuvering area, airfield lightening | Knowledge | 7 |
| Part – B (Long Answer Questions) | | | |
| 1 | Define the runway length according to the length it has been categorized four types what are they explain in detailed | Knowledge | 6 |
| 2 | What is the importance of the safe guard in the airport explain in detail with figures | Knowledge | 6 |
| 3 | Explain Passengers terminals plays an important role in the airport environment write the terminal entrance role in the airport and security process | Knowledge | 6 |
| 4 | Explain computer reservation systems revolutionize the profits out of the industry? | Knowledge | 6 |
| 5 | Explain the need for the Maneuvering area airfield lighting in the airport | Understand | 6 |
| 6 | Explain the indirect cost in the aviation budgets for the airline growth and it's development | Understand | 6 |
| 7 | Explain the direct cost in the aviation budgets for the airline growth and it's development | Understand | 7 |
| 8 | What is mean by apron are in the airport explain in detail | Knowledge | 7 |
| 9 | What are the different approaches to meet the airport construction successfully by taking issues explain in detail | Knowledge | 7 |
| 10 | Explain the ticketing process growth in the last few years with neat figures | Knowledge | 7 |
| Part – C (Problem Solving and Critical Thinking) | | | |
| 1 | Explain the need for the Maneuvering area airfield lighting in the airport | Understand | 6 |
| 2 | Explain the indirect cost in the aviation budgets for the airline growth and it's development | Understand | 6 |
| 3 | Explain the direct cost in the aviation budgets for the airline growth and it's development | Understand | 7 |
| 4 | What is mean by apron are in the airport explain in detail | Knowledge | 7 |
| 5 | What are the different approaches to meet the airport construction successfully by taking issues explain in detail | Knowledge | 7 |
| 6 | Explain the ticketing process growth in the last few years with neat figures | Knowledge | 7 |

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