



INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad-500043

AERONAUTICAL ENGINEERING

TUTORIAL QUESTION BANK

Course Name	:	AIRPORT PLANNING AND MANAGEMENT
Course Code	:	R16- AAE527(GROUP V)
Class	:	B. Tech VI Semester
Branch	:	AERONAUTICAL ENGINEERING
Year	:	2018 – 2019
Course Coordinator	:	Ms D. Anitha, Assistant Professor, Dept of Aeronautical Engineering
Course Faculty	:	Ms D. Anitha, Assistant Professor, Dept of Aeronautical Engineering

OBJECTIVES

To evaluate current air transport design and economic issues and the industry value chain, and learn how to apply your air transport economic knowledge in the workplace. Some prior industry experience is useful to fully understand course content, although sessions are accessible to new industry professionals. This course demystifies the operations and scheduling environment, presenting simplified and easy-to-understand models, applied to straightforward and practical examples.

After introducing the key issues confronting operations and scheduling within airlines, Airline Operations and Scheduling goes on to provide an objective review of the various optimization models adopted in practice. Each model provides airlines with efficient solutions to a range of scenarios, and is accompanied by case studies similar to those experienced by commercial airlines. Using unique source material and combining interviews with alumni working at operations and scheduling departments of various airlines, this solution-orientated approach has been used on many courses with outstanding feedback. As well as, students are been on fuel management systems, baggage handling, aircraft maintenance plans and aircraft boarding strategies.

S No	QUESTION	Blooms taxonomy level	Course Outcomes
UNIT – I			
AIRPORT AS AN OPERATIONAL SYSTEM			
Part - A (Short Answer Questions)			
1	Define the operations of airport planning.	Remember	AAE527.01
2	Write a short note on private airports.	Remember	AAE527.01
3	Write about the Department of Transportation (DOT)?	Understand	AAE527.01
4	Define the enplanements	Remember	AAE527.02
5	Define the term deplanements.	Remember	AAE527.01
6	What are the primary objectives of an airport's public relations process?	Understand	AAE527.02
7	Discuss about based aircraft	Remember	AAE527.02
8	What is Airport privatization?	Understand	AAE527.02
9	What was the function of DLAND?	Remember	AAE527.03
10	Define the term total passengers	Remember	AAE527.02
Part - B (Long Answer Questions)			

1	Who typically owns airports in the United States?	Understand	AAE527.01
2	What are the rules that govern airport management and explain them in detail.	Remember	AAE527.03
3	What do you understand by National Plan of Integrated Airport Systems (NPIAS) and categories the airports listed in the NPIAS?	Understand	AAE527.04
4	Briefly explain the different types of hubs and different patterns of hubs in airport.	Remember	AAE527.05
5	What are the principal duties of a typical airport manager at a medium size commercial airport?	Understand	AAE527.04
6	Write about different organizations affected by the operation of a large airport.	Remember	AAE527.04
7	What is the purpose of an organization chart? And Briefly explain the airport organization chart	Understand	AAE527.04
8	Why are public relations such an important function of airport management?	Understand	AAE527.04
9	What types of formal training and education programs exist for current and future airport managers?	Remember	AAE527.05
10	What was the primary purpose of the Airport and Airway Safety and Capacity Expansion Act of 1987?	Understand	AAE527.05
Part - C (Problem Solving and Critical Thinking Questions)			
1	What is the difference between a private airport and a public-use airport?	Understand	AAE527.01
2	Briefly explain the hierarchical system of airport relationship with help of a neat diagram.	Remember	AAE527.04
3	Briefly explain the organizations that influence airport regulatory policies.	Understand	AAE527.04
4	Discuss the role of complexity of airline planning.	Remember	AAE527.04
5	What purposes do general aviation airports serve and explain them in detail?	Understand	AAE527.04
6	What are the requirements necessary for an airport to be classified as a reliever airport?	Remember	AAE527.05
7	Explain which federal agencies exist in part to support and supervise airport operations?	Understand	AAE527.04
8	What was the difference between the Civil Aeronautics Board and the Civil Aeronautics Administration?	Remember	AAE527.04
9	What is the role of airport manager and explain the public relations and its objectives	Understand	AAE527.04
10	Write about national airport systems and discuss about the two different national systems.	Remember	AAE527.04
UNIT - II			
AIRPORT PLANNING			
Part – A (Short Answer Questions)			
1	What are the components of an airport?	Understand	AAE527.06
2	What is airside of an airport?	Understand	AAE527.06
3	Explain the term airfield?	Remember	AAE527.06
4	What is ARFF?	Understand	AAE527.07
5	How the runway marking is done?	Remember	AAE527.06
6	How we can identify Runway centerlines?	Understand	AAE527.06
7	Define RSA?	Remember	AAE527.06
8	Explain the different types of taxiways?	Understand	AAE527.06
9	What are taxi shoulder markings?	Remember	AAE527.07
10	Explain in brief about SMGCS?	Understand	AAE527.06
Part - B (Long Answer Questions)			
1	Briefly explain the components of an airport-airside and landside.	Understand	AAE527.06
2	Explain in detail about Airfield signage and airfield lighting?	Understand	AAE527.06

3	What is the difference between a displaced threshold and a relocated threshold?	Understand	AAE527.06
4	What are the imaginary surfaces described in FAR Part 77 for? What are the dimensions of these surfaces?	Understand	AAE527.07
5	What makes the GPS system so different from other navigational aid technologies?	Remember	AAE527.06
6	List out the different types of signs that are located on an airfield? How are they marked? What do they mean?	Understand	AAE527.06
7	What types of airport beacons exist? What do the different lighting combinations mean?	Remember	AAE527.06
8	What types of technologies exist on airfields to aid aircraft on approach to landing?	Understand	AAE527.06
9	List the four components that make up an airport and explain them briefly?	Understand	AAE527.07
10	What are the differences between visual, no precision instrument, and precision instrument runways?	Remember	AAE527.06
Part – C (Problem Solving and Critical Thinking)			
1	Discuss the Wind indicators in the components of airport?	Understand	AAE527.06
2	Explain the Security infrastructure on airfields?	Remember	AAE527.06
3	Briefly explain the Weather reporting facilities located on airfields?	Understand	AAE527.06
4	Explain in detail about AWOS Capabilities?	Understand	AAE527.07
5	Explain the functioning of air traffic control tower (ATCT)?	Understand	AAE527.06
6	Briefly explain the Instrument Landing Systems (ILS)?	Remember	AAE527.06
7	Explain in detail Navigational aids (NAVAIDS)?	Remember	AAE527.06
8	What are the two sets of flight rules under which airports may operate?	Understand	AAE527.06
9	Give a detail note on precision approach path indicator (PAPI)?	Understand	AAE527.07
10	Briefly explain about the function of glide slope transmitter?	Remember	AAE527.06
UNIT-III			
GROUND HANDLING AND BAGGAGE HANDLING			
Part - A (Short Answer Questions)			
1	Define rigid pavements.	Understand	AAE527.07
2	What are the typical useful life spans of airfield pavements	Remember	AAE527.09
3	How is an airport's ARFF index determined?	Understand	AAE527.08
4	What are some of the goals of an airport's safety inspection program?	Remember	AAE527.08
5	Explain pavement maintenance?	Understand	AAE527.09
6	Define Biometrics	Understand	AAE527.09
7	What is perimeter security?	Remember	AAE527.08
8	List the types of lighting systems?	Understand	AAE527.09
9	What do you understand by AOPA Airport Watch?	Remember	AAE527.08
10	List the equipment's in general aviation airport?	Understand	AAE527.09
Part – B (Long Answer Questions)			
1	What are the ARFF requirements of an airport based on its index?	Understand	AAE527.08
2	Differentiate between pavement maintenance and pavement rehabilitation?	Understand	AAE527.09
3	What are some of the symptoms of potential pavement failures?	Remember	AAE527.08
4	What are the typical useful life spans of airfield pavements?	Understand	AAE527.08
5	List out some of the goals of an airport's safety inspection program	Understand	AAE527.09

6	How have threats to aviation security evolved since the beginning of civil aviation?	Understand	AAE527.09
7	What are the various security-sensitive areas found at airports, as defined by Transportation Security Regulations?	Remember	AAE527.08
8	How might airports better prepare themselves for future threats to civil aviation security?	Understand	AAE527.09
9	How has airport security traditionally adapted to civil aviation threats?	Remember	AAE527.08
10	What technologies are used to perform the screening of carry-on baggage at airports?	Understand	AAE527.09

Part – C (Problem Solving and Critical Thinking)

1	Differentiate between rigid pavements and flexible pavements?	Understand	AAE527.09
2	Explain in detail about Runway surface friction? What airports does 14 CFR Part 139 apply?	Remember	AAE527.08
3	Discuss the capabilities of Aircraft rescue and firefighting (ARFF)	Remember	AAE527.09
4	List the most common methods for snow and ice removal from airfields?	Understand	AAE527.08
5	What are some of the control techniques associated with bird and wildlife hazard management?	Understand	AAE527.09

6	What technologies are used to perform the screening of checked luggage at airports?	Understand	AAE527.09
7	How does airport security differ between commercial service airports and general aviation airports?	Remember	AAE527.08
8	What are some of the technologies that are used to control access to sensitive security areas at airports?	Remember	AAE527.09
9	List the required for an applicant to receive and refused an SIDA badge?	Understand	AAE527.08
10	What is the organizational structure of the Transportation Security Administration?	Understand	AAE527.09

UNIT-IV

AIRPORT FINANCIAL MANAGEMENT

Part - A (Short Answer Questions)

1	List the types of airport expenses?	Understand	AAE527.10
2	What is the liability insurance?	Remember	AAE527.10
3	Define Airfield?	Remember	AAE527.11
4	Define residual cost approach?	Understand	AAE527.12
5	What is airport improvement program?	Remember	AAE527.12
6	What is sale of products?	Remember	AAE527.10
7	Define line-item budget?	Understand	AAE527.11
8	Who are the Build, operate, and transfer (BOT) contracts?	Remember	AAE527.12
9	What is the Lease, build, and operate (LBO) agreements ?	Understand	AAE527.10
10	Define full privatization?	Remember	AAE527.10

Part – B (Long Answer Questions)

1	Explain in detail about airport financial accounting?	Remember	AAE527.10
2	List the different types of budget strategies found at airports? 3	Understand	AAE527.10
3	List the four categories of O&M expenses that exist at airports? What specific expenses lie within each category?	Remember	AAE527.11
4	Differentiate between operating and non-operating revenues?	Understand	AAE527.12
5	Explain the areas of airport operations are principal areas of potential litigation against airports?	Remember	AAE527.12
6	List the primary differences between the residual cost approach and compensatory approach?	Remember	AAE527.10

7	What is a majority-in-interest clause? How do these clauses affect airport management?	Understand	AAE527.11
8	Differentiate General obligation bonds and General airport revenue bonds.	Remember	AAE527.12
9	Explain the types of financing programs, or bond issues, are available to airports?	Understand	AAE527.10
10	How do bond ratings affect the financial strategies of airports?	Remember	AAE527.12
Part – C (Problem Solving and Critical Thinking)			
1	What grant programs exist on the federal level for airports? How are these programs funded? How may funds from these programs be used at airports?	Understand	AAE527.10
2	What forms of privatization exist at airports? How does each of these strategies differ?	Remember	AAE527.10
3	Briefly explain the revenue strategies at commercial airports?	Remember	AAE527.11
4	Compare the residual and compensatory approaches	Understand	AAE527.12
5	Explain the Operating and maintenance expenses associated with the airfield area and terminal?	Remember	AAE527.12
6	Explain the Operating and maintenance expenses associated with hangars, cargo facilities, other buildings, and grounds?	Understand	AAE527.10
7	Briefly explain the Airport liability coverage?	Remember	AAE527.11
8	Explain the Planning and administering an operating budget in airports?	Understand	AAE527.12
9	Describe the Majority-in-interest (MII) clauses and Term of use agreements	Remember	AAE527.10
10	Briefly explain the Pricing of airport facilities and services in detail.	Understand	AAE527.12
UNIT-V AIRPORT CAPACITY AND DELAY			
Part - A (Short Answer Questions)			
1	What is the theoretical definition of capacity?	Understand	AAE527.13
2	Define throughput capacity?	Remember	AAE527.13
3	What do you understand by estimating capacity?	Remember	AAE527.13
4	What is ASV?	Understand	AAE527.14
5	Define estimating delay.	Remember	AAE527.15
6	What are the measures for practical capacity as pre FAA?	Understand	AAE527.13
7	What is off-peak periods	Remember	AAE527.14
8	What is Quenching Diagram?	Understand	AAE527.15
9	Define delay.	Remember	AAE527.14
10	What is meant by congestive delay?	Understand	AAE527.15
Part – B (Long Answer Questions)			
1	Explain the capacity and its types in detail.	Understand	AAE527.13
2	List the factors affecting capacity and delay?	Remember	AAE527.14
3	Illustrate the capacity with a time-space diagram	Remember	AAE527.14
4	List out the measures of delay and explain them in detail.	Understand	AAE527.15
5	How do runway configurations affect capacity and delay?	Remember	AAE527.14
6	Describe the concept of LAHSO, as it relates to airport capacity.	Understand	AAE527.11
7	Discuss how is a mix index calculated?	Remember	AAE527.12

8	Describe various simulation models used to estimate airport capacity.	Remember	AAE527.14
9	How is queuing theory used to analytically estimate delay?	Understand	AAE527.15
10	What are the various approaches to reducing delay?	Remember	AAE527.15
Part – C (Problem Solving and Critical Thinking)			
1	List the various runway configurations and their rules of operation that affect capacity.	Remember	AAE527.13
2	What is LAHSO? What are the advantages and disadvantages of LAHSO with respect to airport capacity?	Understand	AAE527.14
3	What is the required lateral separation of parallel runways that allows simultaneous operations under IFR?	Remember	AAE527.14
4	What is ROT? How does ROT affect airport capacity?	Remember	AAE527.15
5	How does an aircraft fleet mix affect capacity at an airport?	Remember	AAE527.14
6	What is a time-space diagram? How can a time-space diagram be used in estimating runway capacity?	Understand	AAE527.14
7	How is the FAA airport capacity approximation charts used?	Remember	AAE527.15
8	\What is the two primary sources used by the FAA to gather aircraft delay data?	Understand	AAE527.14
9	List the two of the accepted simulation models that exist to estimate airport capacity?	Remember	AAE527.15
10	Discuss various strategies to reduce delay at airports.	Understand	AAE527.15

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