

Hall Ticket No

Question Paper Code: AAE530



# INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad - 500 043

## MODEL QUESTION PAPER-I

B.Tech VII Semester End Examinations, November/December – 2019

**Regulations: IARE - R16**

### AIRPORT OPERATIONS

(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) Explain about the different types of airport models. Describe with suitable diagram. [7M]  
b) Describe airport as a system-function in the airport-complexity of airport operation. [7M]  
How the management is handling and tackling the complexity issues?
2. a) Explain the different types of general aviation airports, reliever airports, and commercial service airports. [7M]  
b) Explain Mathematical formulation for travelling salesman problem. How this issue can be handled to get best output? Explain. [7M]

#### UNIT – II

3. a) Why is forecasting required for Airport planning? What are the parameters you will look as a manager to plan in advance? [7M]  
b) Create an airport layout in a plateau region. Give an example of plateau layout and explain in detail. [7M]
4. a) Build an airport master plan for free and busy cities. How you are going to plan for Hyderabad city to accommodate domestic and international flights? [7M]  
b) Explain the different types of network flow model using the mathematical problem of multi-commodity problem. [7M]

#### UNIT – III

5. a) What do you understand by airport operations and how these operations are performed at the any international airport? [7M]  
b) Define the passenger information systems. How this information has changed the passenger approach towards the airport operations and airline facility system? [7M]
6. a) Briefly Describe the different levels of aircraft boarding strategy. How these strategies are useful for the aircraft boarding? [7M]

- b) Discuss the two philosophies of management of passenger at the airport terminal, and bring out the advantages and disadvantages of each. [7M]

#### UNIT – IV

7. a) Define Meteorology used in airport operations. Why it is so important in operation? [7M]  
b) What do you understand by Probability of an aircraft accident? Show the fatality rate of the aircraft accidents with examples. [7M]
8. a) Write about the level of protection required for any aircraft to undertake flying operations. Write different safety measures to handle a safe flying. [7M]  
b) What is the importance of search and rescue operations? How these operations are undertaken on airport during any accident? [7M]

#### UNIT – V

9. a) Briefly describe flow through the cargo terminal. In an International airport cargo terminal is separate than passenger terminal. Explain. [7M]  
b) Briefly write the philosophies of terminal management related to cargo. [7M]
10. a) Define airport logistics. How the logistics of airport is managed during operations. [7M]  
b) Describe the level of the service existence at airport. How the services can be improved to the level of customer's requirements? [7M]



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## COURSE OBJECTIVES:

The course should enable the students to:

The course should enable the students to:	
I	Understand about the commercial airport operations, functions, planning and facilities needed.
II	Describe about the procedure of ground handling of baggage and also to know about handling process, equipments, and technologies used
III	Explain about airport operation management, pavement management, rescue and safety hazards management.
IV	Impart knowledge on basics of airport terminals, ATC, and control access in different airport areas.
V	Apply the administrative and performance processes to get efficient output.

## COURSE OUTCOMES (COs):

CO 1	Understand about the commercial airport operations, functions , planning and facilities needed.
CO 2	Describe about the procedure of ground handling of baggage and also to know about handling process, equipment's, and technologies used
CO 3	Explain about airport operation management, pavement management, resource, fire fighting, safety, hazardous materials handling managements.
CO 4	Explore the airport terminal services, Air traffic control system, access system, Tele-communication, Meteorology, Aeronautical information system
CO 5	Outline the operational administration and performance related to airport monitoring, equipment's and human resource considerations.

## COURSE LEARNING OUTCOMES (CLOs):

AAE530.01	Remember about the difference between general aviation and commercial airports.
AAE530.02	Understand the hub and its types used in airport system.
AAE530.03	Describe airport planning and master plan.
AAE530.04	Explain about forecasting, design alternatives and land use for the airport operations.
AAE530.05	Remember ground, passenger and ramp handling procedure.
AAE530.06	Understand departure, control methods and divisions of responsibilities.
AAE530.07	Describe baggage handling process and equipment's requires for this purpose.
AAE530.08	Explain about organization management and performance matrices.
AAE530.09	Remember airport operations and pavement management
AAE530.10	Understand the aircraft rescue and firefighting system
AAE530.11	Understand safety aspects like bird and wild life hazards management.
AAE530.12	Remember the factors affecting the security at commercial and general aviation airport.
AAE530.13	Remember the airport technical services available in any airport.

AAE530.14	Understand the Tele-communication, meteorology and airport access.
AAE530.15	Remember the factors affecting airport access and its modes during airport operations.
AAE530.16	Understand the safety management system and Air Traffic control procedure.
AAE530.17	Understand the strategic and tactical administration of an airport.
AAE530.18	Remember the managing operations performance and its key factors.
AAE530.19	Understanding the factors of airport operations and control centers.
AAE530.20	Remember the best practices used for any commercial airport operations and future needs.

### MAPPING OF SEMESTER END EXAMINATION TO COURSE OUTCOMES

SEE Question No	Marks Allotted	CLO Code	Course Learning Outcomes	Course outcomes	Blooms Taxonomy Level	
1	a	7	AAE530.01	Remember about the difference between general aviation and commercial airports.	CO1	Remember
	b	7	AAE530.02	Understand the hub and its types used in airport system.	CO1	Understand
2	a	7	AAE530.03	Describe airport planning and master plan.	CO1	Remember
	b	7	AAE530.04	Explain about forecasting, design alternatives and land use for the airport operations.	CO2	Understand
3	a	7	AAE530.05	Remember ground, passenger and ramp handling procedure.	CO2	Remember
	b	7	AAE530.06	Understand departure, control methods and divisions of responsibilities.	CO2	Evaluate
4	a	7	AAE530.07	Describe baggage handling process and equipment's requires for this purpose.	CO2	Remember
	b	7	AAE530.08	Explain about organization management and performance matrices.	CO2	Understand
5	a	7	AAE530.09	Remember airport operations and pavement management	CO3	Apply
	b	7	AAE530.10	Understand the aircraft rescue and firefighting system	CO3	Apply
6	a	7	AAE530.11	Understand safety aspects like bird and wild life hazards management.	CO3	Remember
	b	7	AAE530.12	Remember the factors affecting the security at commercial and general aviation airport.	CO3	Apply
7	a	7	AAE530.13	Remember the airport technical services available in any airport.	CO4	Remember
	b	7	AAE530.14	Understand the Tele-communication, meteorology and airport access.	CO4	Apply
8	a	7	AAE530.15	Remember the factors affecting airport access and its modes during airport operations.	CO4	Remember
	b	7	AAE530.16	Understand the safety management system and Air Traffic control procedure.	CO4	Apply
9	a	7	AAE530.17	Understand the strategic and tactical administration of an airport.	CO5	Remember
	b	7	AAE530.18	Remember the managing operations performance and its key factors.	CO5	Understand

<b>SEE Question No</b>	<b>Marks Allotted</b>	<b>CLO Code</b>	<b>Course Learning Outcomes</b>	<b>Course outcomes</b>	<b>Blooms Taxonomy Level</b>	
10	a	7	AAE530.19	Understanding the factors of airport operations and control centers.	CO5	Remember
	b	7	AAE530.20	Remember the best practices used for any commercial airport operations and future needs.	CO5	Understand

**Signature of Course Coordinator**

**HOD, AE**