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UNIVERSITY WITH A PURPOSE

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, , 2020

Program: BBA AVO	**Semester – VI**
Subject (Course): Airport Capacity Management	**Max. Marks: 100**
Course Code: TRAV 2008	**Duration : 3 Hrs**
No. of page/s:	

Section-A (Attempt all the questions)		
1. The runway Directions is made so that landing and takeoff are. a. Against the wind directions b. Along the Wind direction c. perpendicular To WD d. None of this	5	**CO2**
2. Which of the following do not include the aircraft evaluation process? a. Consideration of design characteristic b. Maintenance needs c. acquisition costs d. .Physical appearance	5	**CO4**
3. NATS Provides the which of the following : a. Aviation Safety b. CNS Training c. Aviation Security d. Aircraft Maintenance	5	**CO2**
4. Air Traffic forecast is not influenced by a. GDP b. Industrial output	5	**C02**

c. Population d. Weather		
5. Maximum gross takeoff weight of an aircraft is: a. Equal to the maximum structural landing weight b. Less than the maximum structural landing weight c. More than the maximum structural landing weight d. Equal to the empty operating weight plus the payload	5	**CO4**
6. Situation A : The ratio of arriving and departing aircrafts influences the airport capacity Situation R :Landing operation is generally given priority over the taking off operation Select your answer :a) Both A and R are true and R is the correct explanation of A b) Both A and R are true and R is not the correct explanation of A c) A is true but R is false .d) A is false but R is true	5	**CO4**
Section B (Attempt all the questions)		
1. Identify and discuss challenges associated with Airport Utilization and mention few practices ?	10	**Co3**
2. What do you understand by Airport Terminal Capacity, mention two approaches of analyzing the terminal capacity?	10	**Co4**
3. Why "declared Capacity" is an Important factor in slot allocation Process?	10	**Co2**
4. Explain how Airport deals with the complex process of "Capacity Vs Safety" in their day to day Operation mention few examples?	10	**CO4**
5. List down the financial risk assessment, Success factor in an Airport Business with examples?	10	**CO4**
SECTION C Attempt all the questions		
Q3. Case study Most of the busiest airports worldwide experience serious congestion and delay problems which call for some immediate capacity and demand	2 X 10 = 20	CO2,CO4

management action. Solutions aiming to manage congestion through better slot scheduling have lately received a great deal of consideration due to their potential for delivering quick and substantial capacity utilisation improvements. A slot scheduling approach brings promises to cope better with congestion problems in the short to medium run and in a more sustainable way based on existing resources. This paper aims to provide a critical review of current research in declared capacity modelling and strategic slot scheduling. Furthermore, it goes beyond the critical review of current research developments by identifying future research issues and gaps and developing concrete directions towards modelling and solving advanced single airport and network-based slot scheduling problems. Our research findings suggest that the next generation of slot scheduling models should explore variations of currently used objectives (e.g., alternative expressions of schedule delay) and most importantly enrich them with fairness and equity, resource utilisation and environmental considerations. Future modelling efforts should also aim to further investigate airlines' utility of alternative slot allocation outcomes, including various acceptability measures and levels of tolerance against schedule displacements. Last but not least, future research should intensively focus on the development and validation of computationally viable and robust slot scheduling models being able to capture the complexity, dynamic nature and weather-induced uncertainty of airport operations, along with hybrid solution approaches being able to deal with the size and complexity of slot allocation at network level.

The primary cause of these problems is a serious mismatch between growing demand and scarce airport supply. Currently, demand exceeds by far capacity at the busiest European airports for the most part or even throughout the day (Steer Davies Gleave 2011). Unfortunately, there is much evidence that the observed mismatch is further magnified by serious mismanagement and misuse of available airport capacity (Madas and Zografos 2008, 2010; Steer Davies Gleave 2011). A pure supply-side solution through capacity expansion/enhancement is capital intensive and has a long-term horizon of implementation. On the other hand, demand management solutions may lead to quick, incremental improvements in the short and medium run by controlling the spatial or temporal distribution of demand.

Answer the following questions:

1. Identify all the critical issue in slot allocation is the determination of declared airport capacity, which practically controls the number of slots available for allocation per unit of time?

2. "Increasing airport capacity utilization through optimum slot scheduling: review of current developments and identification of future needs", Justify this Statement with appropriate example ?