# MALLA REDDY COLLEGE OF ENGINEERING AND TECHNOLOGY DEPARTMENT OF AERONAUTICAL ENGINEERING 

IV B.TECH II SEMESTER

R17 SUPPLEMENTARY PREVIOUS QUESTION PAPERS

| CODE | NAME OF THE SUBJECT |
| :---: | :---: |
| R17A2127 | Helicopter Engineering |
| R17A2130 | Airport Management |

# MALLA REDDY COLLEGE OF ENGINEERING \& TECHNOLOGY <br> (Autonomous Institution - UGC, Govt. of India) <br> IV B.Tech- II Semester Supplementary Examinations, May 2022 <br> Helicopter Engineering <br> (AE) 

| Roll No |  |  |  |  |  |  |  |  |  |  |
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Time: 3 hours
Max. Marks: 70

Note: This question paper Consists of 5 Sections. Answer FIVE Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

## SECTION-I

1 How does a helicopter gain height? Explain the aero dynamics of rotor wings aircraft during climb.
OR

2 Explain in detail about the categories of lift dissymmetry with neat sketches.

## SECTION-II

3 (a)What do you understand by Blade sailing in equivalence of feathering and flapping?
(b) Describe the flow condition through the rotor in different flow states in axial flight.

OR

Explain in detail about autorotation in forward flight of helicopter. Discuss in detail with neat sketch.

## SECTION-III

5 Explain about the blade incidence with different flapping and feathering with the help of sketches.

## OR

6 Explain In Ground effect and Out of Ground effect with neat sketches.

## SECTION-IV

7 Describe the momentum theory for vertical climb of helicopter.
[14M]
OR

8 Write down the reasons for high altitude conditions which reduce the helicopter performance. What are the advantages and disadvantages?

## SECTION-V

9 What do you understand by profile power and explain the reasons why profile power for forward flight differs from that of hover?

OR
10 Derive the expressions for typical flapping coefficients and obtain the corresponding relation for thrust coefficient.

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(Autonomous Institution - UGC, Govt. of India)
IV B.Tech- II Semester Supplementary Examinations, May 2022
Airport Management
(AE)

| Roll No |  |  |  |  |  |  |  |  |  |  |
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Time: 3 hours
Max. Marks: 70

Note: This question paper Consists of 5 Sections. Answer FIVE Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

## SECTION-I

1 What are the rules of airline and Airport Management on an international level, Discuss merits and demerits?
OR

2 What are the essential elements in Airport manager and public relations? And discuss the ownership structures of airports.

SECTION-II
3 Elaborate the development of airport terminals and its components of airport terminal.

OR
4 Describe the transportation Security Administration and show the thrust areas of Security at commercial service airports.

## SECTION-III

5 Discuss about Safety inspection programs and show the process of Bird and wildlife
[14M] hazard management.

## OR

6 Differentiate Pavement Management and Aircraft rescue and firefighting (ARFF). [14M] Discuss in detail?

## SECTION-IV

7 Explain how the Revenue strategies at commercial airports are along with pricing of airport facilities and services. Discuss in detail.

## OR

8 Discuss about the rise in airport financial burdens in Airport funding and Airport financing with merits and demerits?

## SECTION-V

9 What are the factors affecting capacity and delay in airport management and also show the process of estimating capacity.

OR

10 Discuss the steps about Approaches to reducing delay in administrative and demand management with neat flow chart. Show the methods for Analytical estimates of delay.

