R09

Code No: 58092

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year II Semester Examinations, September - 2020
HELICOPTER ENGINEERING
(Aeronautical Engineering)

Time: 2 Hours **Max. Marks: 75**

Answer any Five Questions
All Questions Carry Equal Marks
- - -

1. Explain the features of the fully articulated rotor system, semi rigid rotor system and rigid rotor system. [15]

2. What is rotor torque? List out the rotor characteristics. What is control sensitivity? [15]

3. Describe blade element theory in forward flight with a neat sketch of the forces/velocities acting on the blade. [15]

4. How many degrees of freedom does a rotor blade have? Explain steady state and write equations for all the degrees of freedom. [15]

5. Explain the terms Induced power, Profile power and Parasite power for a single rotor helicopter. [15]

6. Explain the importance of studying helicopter stability. Write a short note on directional stability / Instability of a single rotor helicopter. [15]

7. Derive the equations for estimating the performance of rotor in vertical descent. [15]

8. Explain different types of ground effect machines with neat sketches. Write the major applications of hovercraft. [15]

--ooOoo--