Unit 6 - Week - 5

Assignment week-5

1) In general low-wing aircraft's have dihedral wing configuration. This dihedral is primarily used for 1 point

- High lifting characteristic
- Higher longitudinal stability
- Higher lateral stability
- None of these

Accepted Answers:

*Higher lateral stability*

2) Wing-tips are primarily used for 1 point

- Reducing induced drag
- Higher longitudinal stability
- Higher lateral stability
- None of these

Accepted Answers:

*Reducing induced drag*

3) The typical shape of Upswept and Hoerner wing tips are respectively 1 point
4) In an aircraft the horizontal tail is primarily used for
   - High lifting characteristic
   - Higher longitudinal stability
   - Higher lateral stability
   - None of these

   Accepted Answers:
   - **Higher longitudinal stability**

5) In low speed aircraft the primary purpose or leading edge sweep is?
   - Delaying stall
   - Reducing drag
   - Increasing lift
   - Increasing longitudinal stability

   Accepted Answers:
   - **Delaying stall**

6) For positive angle of attack the floating elevator will?
   - Go up
   - Go down
   - Remain unaffected
   - Depends upon aircraft

   Accepted Answers:
   - **Go up**

7) Rudder lock is observed
   - Beyond sideslip angles for which \( \delta r_{\text{float}} \) becomes more than \( \delta r_{\text{required}} \)
   - Before sideslip angles for which \( \delta r_{\text{float}} \) becomes more than \( \delta r_{\text{required}} \)
   - Beyond a fixed sideslip angle for every aircraft
   - Beyond a fixed rudder deflection

   Accepted Answers:
   - **Beyond sideslip angles for which \( \delta r_{\text{float}} \) becomes more than \( \delta r_{\text{required}} \)**
8) Rudder lock can be delayed using
   - Only Dorsal Fin
   - Only Ventral Fin
   - Both A & B
   - None of these

   **Accepted Answers:**
   *Both A & B*

9) The rudder lock phenomena may appear when?
   - $C_{n_{\delta r}}$ for vertical tail is decreased and $C_{n_{\beta}}$ for vertical tail is increased
   - $C_{n_{\delta r}}$ for vertical tail is increased and $C_{n_{\beta}}$ for vertical tail is decreased
   - Rudder area is decreased
   - None of these

   **Accepted Answers:**
   *$C_{n_{\delta r}}$ for vertical tail is increased and $C_{n_{\beta}}$ for vertical tail is decreased*

10) For similar chord length the aerofoil thickness is increased. How the critical Mach number will change?
   - Decrease
   - Increase
   - Will depend upon wing span
   - None of these

   **Accepted Answers:**
   *Decrease*