

1. Tick the correct option

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1. Sweepback on a wing:

- a) Reduce induce drag at low speed.
- b) Increase the tendency to tip stall.
- c) Reduce the tendency to tip stall.
- d) Cause the stall to occur at a lower angle of attack.

2. A stick pusher is:

- a) A device to prevent an aircraft from stalling.
- b) A type of trim system.
- c) A device to assist the pilot to move the controls at high speed.
- d) A device which automatically compensates for pitch changes at high speed.

3. If the indicated airspeed of an aircraft is increased from 50kts to 100kts, parasite drag will be:

- a) Four times greater
- b) Six times greater
- c) Two times greater
- d) One quarter as much

4. To maintain altitude what must be done as Indicated Air Speed (IAS) is reduced:

- a) Decrease angle of attack to reduce drag
- b) Increase angle of attack to maintain the correct lift force.
- c) Deploy the speed breaks to increase drag
- d) Reduce thrust

5. The angle of attack of a wing directly controls the:

- a) Angle of incidence of the wing.
- b) Distribution of pressure acting on the wing.
- c) Amount of airflow above and below the wing
- d) Dynamic pressure acting in the airflow.

2. Answer the following:5

1. When flaps are lowered what happens to the span wise flow of air over the upper surface of the wing?
2. What happens to the stalling speed if the flaps are lowered?
3. What is the typical stalling angle of attack for a wing without sweepback?
4. What happens to pressure if the velocity of air mass increases?
5. What is the effect of a shock wave on control surface efficiency?

3. Answer in Brief: (Any 2)

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1. Difference between MEL & MMEL.
2. Define lift and how is it generated.
3. Difference between a stick shaker and sticker pusher.

THAKUR COLLEGE OF SCIENCE AND COMMERCE

CLASS TEST: AUGUST 2017

PROGRAM:S.Y.B.sc

MAX MARKS: 75 SEMESTER: 3 COURSE: AVIATION

4. Answer the following (Any 2) 15

1. Explain the different types of flaps with a diagram.
2. Define drag and types of drag
3. Explain the types of first aid kits carried on large aircrafts.
4. What is the cyclic pitch and a collective pitch used for in a helicopter?

5. Explain. (Any 2)

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1. Uses and types of Spoilers
2. Auto ignition system
3. Methods of improving control at transonic speeds
4. Parasite Drag

6. Answer (Any 4)

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1. Types of flaps used for takeoff.
2. Explain the types of Stability.
3. What is V_1 , V_2 , V_r , V_{lof} ?
4. Explain Coffin corner
5. Explain Stall recognition
6. Difference between root stall & tip stall