TEMA: 0292 FLT/DSP - (CHAP. 03) AERODYNAMICS

COD PREG:	PREGUNTA:	RPTA:
PREG20084835	Which is a purpose of ground spoilers?	A
OPCION A:	Reduce the wings' lift upon landing.	
OPCION B:	Aid in rolling an airplane into a turn.	
OPCION C:	Increase the rate of descent without gaining airspeed.	
PREG20084829	What is the purpose of a servo tab?	B
OPCION A:	Move the flight controls in the event of manual reversion.	
OPCION B:	Reduce control forces by deflecting in the proper direction to move a primary flight control.	
OPCION C:	Prevent a control surface from moving to a full-deflection position due to aerodynamic forces.	
PREG20084826	Which of the following is considered an auxiliary flight control?	C
OPCION A:	Ruddervator.	
OPCION B:	Upper rudder.	
OPCION C:	Leading-edge flaps.	
PREG20084825	Which of the following is considered a primary flight control?	B
OPCION A:	Slats.	
OPCION B:	Elevator.	
OPCION C:	Dorsal fin.	
PREG20084824	When are outboard ailerons normally used?	A
OPCION A:	Low-speed flight only.	
OPCION B:	High-speed flight only.	
OPCION C:	Low-speed and high-speed flight.	
PREG20084823	When are inboard ailerons normally used?	C
OPCION A:	Low-speed flight only.	
OPCION B:	High-speed flight only.	
OPCION C:	Low-speed and high-speed flight.	
PREG20084853	Airflow separation over the wing can be delayed by using vortex generators	C
OPCION A:	directing high pressure air over the top of the wing or flap through slots and making the wing surface smooth.	
OPCION B:	directing a suction over the top of the wing or flap through slots and making the wing surface smooth.	
OPCION C:	making the wing surface rough and/or directing high pressure air over the top of the wing or flap through slots.	

PREG20084827	What is the purpose of a control tab?	A
OPCION A:	Move the flight controls in the event of manual reversion.	
OPCION B:	Reduce control forces by deflecting in the proper direction to move a primary flight control.	
OPCION C:	Prevent a control surface from moving to a full-deflection position due to aerodynamic forces.	

PREG20084836	Which direction from the primary control surface does an anti-servo tab move?	A
OPCION A:	Same direction.	
OPCION B:	Opposite direction.	
OPCION C:	Remains fixed for all positions.	

PREG20084828	What is the purpose of an anti-servo tab?	C
OPCION A:	Move the flight controls in the event of manual reversion.	
OPCION B:	Reduce control forces by deflecting in the proper direction to move a primary flight control.	
OPCION C:	Prevent a control surface from moving to a full-deflection position due to aerodynamic forces.	

PREG20084838	Which direction from the primary control surface does an elevator adjustable trim tab move when the control surface is moved?	C
OPCION A:	Same direction.	
OPCION B:	Opposite direction.	
OPCION C:	Remains fixed for all positions.	

PREG20084851	Upon which factor does wing loading during a level coordinated turn in smooth air depend?	B
OPCION A:	Rate of turn.	
OPCION B:	Angle of bank.	
OPCION C:	True airspeed.	

PREG20084837	Which direction from the primary control surface does a servo tab move?	B
OPCION A:	Same direction.	
OPCION B:	Opposite direction.	
OPCION C:	Remains fixed for all positions.	

PREG20084850	What is the relationship of the rate of turn with the radius of turn with a constant angle of bank but increasing airspeed?	A
OPCION A:	Rate will decrease and radius will increase.	
OPCION B:	Rate will increase and radius will decrease.	
OPCION C:	Rate and radius will increase.	

PREG20084849	How can the pilot increase the rate of turn and decrease the radius at the same time?	B
OPCION A:	Steepen the bank and increase airspeed.	
OPCION B:	Steepen the bank and decrease airspeed.	
OPCION C:	Shallow the bank and increase airspeed.	

PREG20084847	If no corrective action is taken by the pilot as angle of bank is increased, how is the vertical component of lift and sink rate affected?	C
OPCION A:	Lift increases and the sink rate increases.	
OPCION B:	Lift decreases and the sink rate decreases.	
OPCION C:	Lift decreases and the sink rate increases.	

PREG20084846	What affects indicated stall speed?	A
OPCION A:	Weight, load factor, and power.	
OPCION B:	Load factor, angle of attack, and power.	
OPCION C:	Angle of attack, weight, and air density.	

PREG20084848	Why must the angle of attack be increased during a turn to maintain altitude?	A
OPCION A:	Compensate for loss of vertical component of lift.	
OPCION B:	Increase the horizontal component of lift equal to the vertical component.	
OPCION C:	Compensate for increase in drag.	

PREG20084844	What is the effect on total drag of an aircraft if the airspeed decreases in level flight below that speed for maximum L/D?	A
OPCION A:	Drag increases because of increased induced drag.	
OPCION B:	Drag increases because of increased parasite drag.	
OPCION C:	Drag decreases because of lower induced drag.	

PREG20084843	What effect does an increase in airspeed have on a coordinated turn while maintaining a constant angle of bank and altitude?	C
OPCION A:	The rate of turn will decrease resulting in a decreased load factor.	
OPCION B:	The rate of turn will increase resulting in a increased load factor.	
OPCION C:	The rate of turn will decrease resulting in no changes in load factor.	

PREG20084839	What is the purpose of an elevator trim tab?	C
OPCION A:	Provide horizontal balance as airspeed is increased to allow hands-off flight.	
OPCION B:	Adjust the speed tail load for different airspeeds in flight allowing neutral control forces.	
OPCION C:	Modify the downward tail load for various airspeeds in flight eliminating flight-control pressures.	

PREG20084841	Why do some airplanes equipped with inboard/outboard ailerons use the outboards for slow flight only?	B
OPCION A:	Increased surface are provides greater controllability with flap extension.	
OPCION B:	Aerodynamic loads on the outboard ailerons tend to twist the wingtips at high speeds.	
OPCION C:	Locking out the outboard ailerons in high-speed flight provides variable flight control feel.	

PREG20084845	What is load factor?	C
OPCION A:	Lift multiplied by the total weight.	
OPCION B:	Lift substracted from the total weight.	
OPCION C:	Lift divided by the total weight.	

PREG20084840	Which is a purpose of wing-mounted vortex generators?	A
OPCION A:	Reduce the drag caused by supersonic flow over portions of the wing.	
OPCION B:	Increase the onset of drag divergence and aid in aileron effectiveness at high speed.	
OPCION C:	Break the airflow over the wing so the stall will progress from the root out to the tip of the wing.	

PREG20084864	What characteristic should exist if an airplane is loaded to the rear of its CG range?	C
OPCION A:	Sluggish in aileron control.	
OPCION B:	Sluggish in rudder control.	
OPCION C:	Unstable about the lateral axis.	

PREG20084867	How can an airplane produce the same lift in ground effect as when out of ground effect?	B
OPCION A:	The same angle of attack.	
OPCION B:	A lower angle of attack.	
OPCION C:	A higher angle of attack.	

PREG20084866	What true airspeed and angle of attack should be used to generate the same amount of lift as altitude is increased?	B
OPCION A:	The same true airspeed and angle of attack.	
OPCION B:	A higher true airspeed for any given angle of attack.	
OPCION C:	A lower true airspeed and higher angle of attack.	

PREG20084856	What effect, if any, does altitude have on Vmc for an airplane with unsupercharged engines?	C
OPCION A:	None.	
OPCION B:	Increases with altitude.	
OPCION C:	Decreases with altitude.	

PREG20084865	What will be the ratio between airspeed and lift if the angle of attack and other factors remain constant and airspeed is doubled? Lift will be	C
OPCION A:	the same.	
OPCION B:	two times greater.	
OPCION C:	four times greater.	

PREG20084863	What flight condition should be expected when an aircraft leaves ground effect?	A
OPCION A:	An increase in induced drag requiring a higher angle of attack.	
OPCION B:	A decrease in parasite drag permitting a lower angle of attack.	
OPCION C:	An increase in dynamic stability.	

PREG20084860	Describe dynamic longitudinal stability.	B
OPCION A:	Motion about the longitudinal axis.	
OPCION B:	Motion abou the lateral axis.	
OPCION C:	Motion about the vertical axis.	

PREG20084861	Identify the type stability if the aircraft attitude tends to move farther from its original position after the controls have been neutralized.	A
OPCION A:	Negative static stability.	
OPCION B:	Positive static stability.	
OPCION C:	Negative dynamic stability.	

PREG20084859	What is a characteristic of longitudinal instability?	A
OPCION A:	Pitch oscillations becoming progressively greater.	
OPCION B:	Bank oscillations becoming progressively greater.	
OPCION C:	Aircraft constantly tries to pitch down.	

PREG20084858	Identify the type stability if the aircraft attitude remains in the new position after the controls have been neutralized.	C
OPCION A:	Negative longitudinal static stability.	
OPCION B:	Neutral longitudinal dynamic stability.	
OPCION C:	Neutral longitudinal static stability.	

PREG20084857	Under what condition should stalls never be practiced in a twin-engine airplane?	A
OPCION A:	With one engine inoperative.	
OPCION B:	With climb power on.	
OPCION C:	With full flaps and gear extended.	

PREG20084868	What are some characteristics of an airplane loaded with the CG at the limit?	A
OPCION A:	Lowest stall speed, highest cruise speed, and least stability.	

OPCION B:	Highest stall speed, highest cruise speed, and least stability.	
OPCION C:	Lowest stall speed, lowest cruise speed, and highest stability.	

PREG20084862	Identify the type stability if the aircraft attitude tends to return to its original position after the controls have been neutralized.	B
OPCION A:	Positive dynamic stability.	
OPCION B:	Positive static stability.	
OPCION C:	Neutral dynamic stability.	

PREG20084869	By changing the angle of attack of a wing, the pilot can control the airplane's	B
OPCION A:	lift, gross weight, and drag.	
OPCION B:	lift, airspeed, and drag.	
OPCION C:	lift and airspeed, but not drag.	

PREG20084877	What is the principal advantage of a sweepback design wing over a straightwing design?	A
OPCION A:	The critical Mach number will increase significantly.	
OPCION B:	Sweepback will increase changes in the magnitude of force coefficients due to compressibility.	
OPCION C:	Sweepback will accelerate the onset of compressibility effect.	

PREG20084871	What is the primary function of the leading edge flaps in landing configuration during the flare before touchdown?	A
OPCION A:	Prevent flow separation.	
OPCION B:	Decrease rate of sink.	
OPCION C:	Increase profile drag.	

PREG20084855	What criteria determines which engine is the "critical" engine of a twin-engine airplane?	A
OPCION A:	The one with the center of thrust closest to the centerline of the fuselage.	
OPCION B:	The one designated by the manufacturer which develops most usable thrust.	
OPCION C:	The one with the center of thrust farthest from the centerline of the fuselage.	

PREG20084884	At which speed will increasing the pitch attitude cause an airplane to climb?	B
OPCION A:	Low speed.	
OPCION B:	High speed.	
OPCION C:	Any speed.	

PREG20084883	What is the relationship between induced and parasite drag when the gross weight is increased?	B

OPCION A:	Parasite drag increases more than induced drag.	
OPCION B:	Induced drag increases more than parasite drag.	
OPCION C:	Both parasite and induced drag are equally increased.	

PREG20084882	For a given angle of bank, the load factor imposed on both the aircraft and pilot in a coordinated constant-altitude turn	C
OPCION A:	is directly related to the airplane's gross weight.	
OPCION B:	varies with the rate of turn.	
OPCION C:	is constant.	

PREG20084881	What is the movement of the center of pressure when the wingtips of a sweptwing airplane are shock-stalled first?	B
OPCION A:	Inward and aft.	
OPCION B:	Inward and forward.	
OPCION C:	Outward and forward.	

PREG20084880	What is the condition known as when gusts cause a sweptwing-type airplane to roll in one direction while yawing in the other?	C
OPCION A:	Porpoise.	
OPCION B:	Wingover.	
OPCION C:	Dutch roll.	

PREG20084879	What is one disadvantage of a sweptwing design?	B
OPCION A:	The wing root stalls prior to the wingtip section.	
OPCION B:	The wingtip section stalls prior to the wing root.	
OPCION C:	Severe pitchdown moment when the center of pressure shifts forward.	

PREG20084878	What is the result of a shock-induced separation of airflow occurring symmetrically near the wing root of a sweptwing aircraft?	B
OPCION A:	A high-speed stall and sudden pitchup.	
OPCION B:	A severe moment or "tuck under".	
OPCION C:	Severe porpoising.	

PREG20084876	At what Mach range does the subsonic flight range normally occur?	A
OPCION A:	Below .75 Mach.	
OPCION B:	From .75 to 1.20 Mach.	
OPCION C:	From 1.20 to 2.50 Mach.	

PREG20084875	What is the free stream Mach number which produces first evidence of local sonic flow?	C
OPCION A:	Supersonic Mach number.	
OPCION B:	Transonic Mach number.	
OPCION C:	Critical Mach number.	

PREG20084874	What is the highest speed possible without supersonic flow over the wing?	B
OPCION A:	Initial buffet speed.	
OPCION B:	Critical Mach number.	
OPCION C:	Transonic index.	

PREG20084873	Within what Mach range does transonic flight regimes usually occur?	B
OPCION A:	.50 to .75 Mach.	
OPCION B:	.75 to 1.20 Mach.	
OPCION C:	1.20 to 2.50 Mach.	

PREG20084872	What effect does the leading edge slot in the wing have on performance?	B
OPCION A:	Decreases profile drag.	
OPCION B:	Changes the stalling angle of attack to a higher angle.	
OPCION C:	Decelerates the upper surface boundary layer air.	

PREG20084870	The primary purpose of high-lift devices is to increase the	B
OPCION A:	L/Dmax.	
OPCION B:	lift at low speeds.	
OPCION C:	drag and reduce airspeed.	

PREG20084854	What procedure is recommended for an engine-out approach and landing?	A
OPCION A:	The flightpath and procedures should be almost identical to a normal approach and landing.	
OPCION B:	The altitude and airspeed should be considerably higher than normal throughout the approach.	
OPCION C:	A normal approach, except do not extend the landing gear or flaps until over the runway threshold.	

PREG20084842	Which of the following are considered primary flight controls?	C
OPCION A:	Tabs.	
OPCION B:	Flaps.	
OPCION C:	Outboard ailerons.	

PREG20084852	If an aircraft with a gross weight of 2,000 pounds were subjected to a total of 6,000 pounds in flight, the load factor would be	B
OPCION A:	2 Gs.	
OPCION B:	3 Gs.	
OPCION C:	9 Gs.	

PREG20084834	Which is a purpose of leading-edge slats on high-performance wings?	C

OPCION A:	Decrease lift at relative slow speeds.	
OPCION B:	Improve aileron control during low angles of attack.	
OPCION C:	Direct air from the high pressure area under the leading edge along the top of the wing.	

PREG20084833	Which is a purpose of leading-edge slats on high-performance wings?	A
OPCION A:	Increase lift at relative slow speeds.	
OPCION B:	Improve aileron control during low angles of attack.	
OPCION C:	Direct air from the low pressure area under the leading edge along the top of the wing.	

PREG20084832	For which purpose may flight spoilers be used?	A
OPCION A:	Reduce the wings' lift upon landing.	
OPCION B:	Increase the rate of descent without increasing aerodynamic drag.	
OPCION C:	Aid longitudinal balance when rolling an airplane into a turn.	

PREG20084831	What is a purpose of flight spoilers?	B
OPCION A:	Increase the camber of the wing.	
OPCION B:	Reduce lift without increasing airspeed.	
OPCION C:	Direct airflow over the top of the wing at high angles of attack.	

PREG20084830	Which is a purpose of leading-edge flaps?	A
OPCION A:	Increase the camber of the wing.	
OPCION B:	Reduce lift without increasing airspeed.	
OPCION C:	Direct airflow over the top of the wing at high angles of attack.	