

(M08)基礎空氣動力學：

題號	答案	題目
1(0049273)	C	<p>The International Standard Atmosphere can be described as (A) the atmosphere at 45 degrees north latitude. (B) the atmosphere at the equator with certain conditions. (C) the atmosphere which can be used worldwide to provide comparable performance results.</p> <p>國際標準大氣條件被稱為 (A) 在北緯45度測得之大氣 (B) 某些情況下於赤道測得之大氣 (C) 一世界通用之大氣，用以提供可比較的性能數據結果。</p>
2(0049850)	C	<p>The air consists of (A) 90% oxygen, 6% nitrogen and 4% other gases. (B) 78% nitrogen, 20% hydrogen and 2% other gases. (C) 78% nitrogen, 21% oxygen and 1% other gases.</p> <p>空氣的組成為 (A) 90% 氧，6% 氮和4% 其他氣體。(B) 78% 氮，20% 氫和2% 其他氣體。(C) 78% 氮，21% 氧和1% 其他氣體。</p>
3(0021827)	B	<p>In which condition the drag coefficient is minimum? (A) The angle of attack is negative. (B) The angle of attack is zero. (C) Stall angle.</p> <p>在何種狀況下阻力係數最小？(A) 飛機攻角為負時 (B) 飛機攻角為零時 (C) 失速攻角</p>
4(0049574)	C	<p>Asymmetric flaps will cause (A) the aircraft to descend. (B) the aircraft to ascend. (C) one wing to rise.</p> <p>不對稱襟翼將導致 (A) 飛機下降 (B) 飛機爬升 (C) 其中一側機翼升起</p>
5(0049799)	C	<p>Sweepback of the wings will (A) decrease lateral stability. (B) not affect the lateral stability. (C) increase lateral stability.</p> <p>機翼後掠會 (A) 減低橫向穩定性 (B) 不影響橫向穩定性 (C) 增加橫向穩定性</p>
6(0049891)	C	<p>Given dynamic pressure of airflow in the tube, (A) dynamic pressure is directly proportional to the square of airspeed only. (B) dynamic pressure is directly proportional to air density only. (C) dynamic pressure is directly proportional to the square of airspeed and air</p>

		<p>density.</p> <p>有關流管中之空氣動壓，下列敘述何者正確? (A) 動壓僅與空氣速度平方成正比。 (B) 動壓僅與空氣密度成正比。 (C) 動壓與空氣速度平方和空氣密度成正比</p>
7(0049884)	C	<p>As to the boundary layer, which statement is incorrect? (A) The thickness of boundary layer becomes thicker along the airflow direction. (B) The flow speed in the boundary layer is zero over the wing surface, and the speed gets faster outward along normal line. (C) The flow speed keeps constant in the boundary layer.</p> <p>下列關於邊界層的說法，何者有誤? (A) 邊界層的厚度順著氣流方向是逐漸加厚的。 (B) 邊界層內的流速在機翼的表面為零，沿法線向外，流速逐漸增大。 (C) 邊界層內的流速保持不變。</p>
8(0021806)	A	<p>With increase in altitude, the static pressure in the troposphere will (A) decrease with altitude, but not in a linear manner. (B) increase with altitude, but not in a linear manner. (C) increase with altitude, the rate of decrease is linear.</p> <p>在對流層隨著海拔高度的增加，靜壓力將 (A) 非線性方式減少 (B) 非線性方式增加 (C) 線性方式增加</p>
9(0021700)	B	<p>The kinematic viscosity is the ratio of the coefficient of viscosity and the (A) pressure. (B) density. (C) velocity.</p> <p>動粘滯係數定義為粘度係數與下列何者的比值? (A) 壓力 (B) 密度 (C) 速度</p>
10(0050061)	A	<p>While an airplane is with Dutch roll, (A) its directional stability is weaker than its lateral stability. (B) its directional stability is stronger than its lateral stability. (C) its directional stability equals the lateral stability.</p> <p>飛機出現荷蘭滾的原因為：(A) 其方向穩定性小於橫向穩定性。 (B) 其方向穩定性大於橫向穩定性。 (C) 其方向穩定性等於橫向穩定性。</p>
11(0021713)	A	<p>The fuselage form factor is a function of the (A) fineness ratio of the body. (B) aspect ratio. (C) glide ratio.</p> <p>機身形狀因素是什麼的函數? (A) 機體細長比 (B) 展弦比 (C) 滑翔比</p>

12(0049941)	C	<p>The function of the winglet is (A) to reduce friction drag. (B) to reduce pressure drag. (C) to reduce induced drag.</p> <p>翼尖小翼的功用是?(A) 減小摩擦阻力。(B) 減小壓差阻力。(C) 減小誘導阻力。</p>
13(0049235)	A	<p>If gauge pressure on a standard day at sea level is 25 PSI, the absolute pressure is (A) 39.7 PSI. (B) 10.3 PSI. (C) 20.5 PSI.</p> <p>在一標準天氣，若海平面之錶壓力(Gauge Pressure)值為25 PSI，則絕對壓力值為何?(A) 39.7 PSI。(B) 10.3 PSI。(C) 20.5 PSI。</p>
14(0021805)	C	<p>What is the speed that would be shown by an error-free airspeed indicator? (A) IAS(Indicated Airspeed). (B) CAS(Calibrated Airspeed). (C) EAS(Equivalent Airspeed).</p> <p>經過校正誤差後的空速指的是何種空速(A) 指示空速(B) 校準空速(C) 相當空速</p>
15(0050187)	C	<p>Which statement is wrong? (A) Instability of side drift is prone to occur when the airplane flies in high AOA(Angle of Attack). (B) Providing directional moment and lateral moment do not coincide well, lateral drift would occur. (C) The cause of lateral drift is that longitudinal moment and lateral moment do not coincide well.</p> <p>下列敘述錯誤的是?(A) 飛機在大攻角下飛行時，易產生側向飄移的不穩定性。(B) 若方向力矩和橫向力矩不一致，橫向漂移會發生。(C) 橫向漂移的原因是，縱向力矩和橫向力矩不完全一致。</p>
16(0049896)	B	<p>When an incompressible flow passes through a tube, it is known that cross-sectional area “$A_1 = 2A_2 = 4A_3$.” How about the (flow speed) static pressure? (A) $P_1 = P_2 = P_3$ (B) $P_1 > P_2 > P_3$ (C) $P_1 < P_2 < P_3$</p> <p>當不可壓縮氣流流過一條管道時，已知其截面積$A_1 = 2A_2 = 4A_3$，則其靜壓為 (A) $P_1 = P_2 = P_3$ (B) $P_1 > P_2 > P_3$ (C) $P_1 < P_2 < P_3$</p>
17(0049341)	B	<p>An untapered straight wing will (A) have no yaw effect in banking. (B) stall at the root first. (C) have no change in induced drag in the bank.</p> <p>一個無斜度的平直機翼 (A) 在飛機傾斜轉彎時，不會產生偏航效應 (B) 先在翼根處失速 (C) 在飛機傾斜轉彎時，不會改變誘導阻力</p>
18(0050015)	C	<p>As to stall characteristic of sweptback wings, which statement is correct? (A) The nose auto-pitches down when stall occurs around</p>

		<p>wingtips before wing roots, which results in high-AOA stall. (B) The effective speed which can generate lift force increases, and it impairs stall characteristic of sweptback wings. (C) Wing fence installed on the wing's surface should improve stall characteristic of sweptback wings.</p> <p>關於後掠機翼失速特性，下列說法何者是正確的？(A) 一旦翼尖先於翼根失速，會造成機頭自動下俯，導致飛機大攻角失速。(B) 產生升力的有效速度增加，使後掠機翼的失速特性變壞。(C) 機翼表面安裝的翼擋板(Wing Fence)可以改善後掠機翼失速特性。</p>
19(0049877)	B	<p>The change of airflow along boundary layer over the surface of the wing is (A) from turbulent flow to laminar flow. (B) from laminar flow to turbulent flow. (C) no change.</p> <p>氣流沿機翼表面邊界層的變化是 (A) 從亂流變為層流。(B) 從層流變為紊流。(C) 不會改變。</p>
20(0050107)	C	<p>Weight balance of control surface may be achieved by (A) concentrating the counterweight but this method should aggravate flutter of the flying controls. (B) distributing the counterweight but this method would add the drag. (C) distributing the counterweight and this method is generally used in high-speed airplanes.</p> <p>對操縱面進行重量平衡可以使用 (A) 集中配重，但這種方法會加劇飛行操縱的顫振。(B) 分散配重的方法，但這種方法會增加阻力。(C) 分散配重的方法，且這種方法普遍使用在高速飛機上。</p>
21(0021778)	C	<p>With increase in altitude in the atmosphere, then (A) pressure increases, density decreases. (B) pressure decreases, density increases. (C) pressure decreases, density decreases.</p> <p>大氣層中高度越高則：(A) 壓力增加，密度減少 (B) 壓力減少，密度增加 (C) 壓力減少，密度減少</p>
22(0049336)	B	<p>Wing loading is calculated by weight (A) divided by lift. (B) divided by gross wing area. (D) multiplied by gross wing area.</p> <p>如何計算機翼負載？(A) 重量除以升力 (B) 重量除以機翼總面積 (D) 重量乘以的機翼總面積</p>
23(0049455)	B	<p>_____ angle of attack is known as optimum angle of attack. (A) 5 to 7 degrees (B) 3 to 5 degrees (C) 10 to 12 degrees</p> <p>多少度之攻角可稱為最佳攻角？(A) 5至7度 (B) 3至5度 (C) 10至12</p>

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