Telangana State Council Higher Education

Notations :

1.Options shown in green color and with ✔ icon are correct.

2.Options shown in red color and with ✖ icon are incorrect.

Question Paper Name :	Aerospace Engineering 2nd Aug 2022 Shift 2
Subject Name :	Aerospace Engineering
Creation Date :	2022-08-02 17:21:07
Duration :	120
Total Marks :	120
Display Marks:	Yes
Calculator :	None
Magnifying Glass Required? :	No
Ruler Required? :	No
Eraser Required? :	No
Scratch Pad Required? :	No
Rough Sketch/Notepad Required? :	No
Protractor Required? :	No
Show Watermark on Console? :	Yes
Highlighter :	No
Auto Save on Console?	Yes
Change Font Color :	No
Change Background Color :	No
Change Theme :	No
Help Button :	No
Show Reports :	No
Show Progress Bar :	No

Aerospace Engineering

Group Number :	1
Group Id :	34058044
Group Maximum Duration :	0
Group Minimum Duration :	120
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	120
Is this Group for Examiner? :	No
Examiner permission :	Cant View
Show Progress Bar? :	No

Mathematics

Section Id :	34058080
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	10
Number of Questions to be attempted :	10
Section Marks :	10
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	34058080
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 3405805161 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The number of independent rows in the matrix

$$\begin{pmatrix} 1 & -2 & 3 \\ 2 & 1 & 0 \\ 3 & 1 & -4 \\ 5 & 1 & 6 \\ -5 & -2 & 4 \end{pmatrix}$$ is

Options :

34058020641. ✖ 1

34058020642. ✖ 2

34058020643. ✖ 3

34058020644. ✔ 4

Question Number : 2 Question Id : 3405805162 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The number of solutions of the system: $x + y + z = 0$, $2x + y + z = 1$, $3x + 2y - z = 10$, $x - y - 2z = 9$ is

Options :

34058020645. ✔ 1

34058020646. ✖ 2

34058020647. ✖ 3

34058020648. ✖ ∞

Question Number : 3 Question Id : 3405805163 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If $A = \begin{bmatrix} -2 & 1 & 1 \\ 1 & -2 & 1 \\ 1 & 1 & -2 \end{bmatrix}$, then $A^4 + 6A^3 = kA^2$, where $k =$

Options :

34058020649. ✖ 3

34058020650. ✖ 6

34058020651. ✔ 9

34058020652. ✖ 12

Question Number : 4 Question Id : 3405805164 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The number of critical points of $f(x) = 3x - 4\cos 2x$ is

Options :

34058020653. ✔ 0

34058020654. ✖ 1

34058020655. ✖ 2

34058020656. ✖ 3

Question Number : 5 Question Id : 3405805165 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The domain of the real function

$$f(x) = \frac{x^2+1}{\log\sqrt{|x^2-1|}}$$ is

Options :

34058020657. ✖ $[-1, \ 1]-\{0\}$

34058020658. ✖ $[-1, 1)$

34058020659. ✔ $(-1, 1)-\{0\}$

34058020660. ✖ $(-1, 1)$

Question Number : 6 Question Id : 3405805166 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The function f(x) = cosec x is continuous on

Options :

34058020661. ✔ $\mathbb{R} - \{n\pi : n\varepsilon\mathbb{Z}\}$

34058020662. ✖ $\mathbb{Q} - \{n\pi : n\varepsilon\mathbb{Z}\}$

34058020663. ✖ $\{n\pi : n\varepsilon\mathbb{Z}\}$

34058020664. ✖ $\mathbb{Q}$

Question Number : 7 Question Id : 3405805167 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If $f(x, y) = x^2y + xy^2$, $x = t\cos t$, $y = \sin t$ then $\frac{df}{dt}$ at $t = \frac{\pi}{2}$ is

Options :

34058020665. ✔ $\frac{-\pi}{2}$

34058020666. ✖ $\frac{\pi}{2}$

34058020667. ✖ 0

34058020668. ✖ -1

Question Number : 8 Question Id : 3405805168 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The directional derivative of $f(x, y) = 2x^2 - 3xy + 4y^2 - 6x + 3y - 4$ in the direction of $\bar{i} + \bar{j}$ at (3, 3) is

Options :

34058020669. ✖ $-8\sqrt{2}$

34058020670. ✔ $7\sqrt{2}$

34058020671. ✖ $-7\sqrt{2}$

34058020672. ✖ $8\sqrt{2}$

Question Number : 9 Question Id : 3405805169 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If the particular integral of $y'' + y = 1 + x^2$ is $y_b = a + bx + cx^2$, then $a + b + c =$

Options :

34058020673. ✖ 3

34058020674. ✖ 2

34058020675. ✖ -1

34058020676. ✔ 0

Question Number : 10 Question Id : 3405805170 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The solution of $y'' - y = 0$ satisfying $y(0) = 1 = y'(0)$ is

Options :

34058020677. ✖ $y = e^{2x}$

34058020678. ✖ $e^{-x} = y$

34058020679. ✔ $y = e^{x}$

34058020680. ✖ $y = x + 1$

Aerospace Engineering

Section Id :	34058081
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	110
Number of Questions to be attempted :	110
Section Marks :	110
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0

Sub-Section Number : 1

Sub-Section Id : 34058081

Question Shuffling Allowed : Yes

Question Number : 11 Question Id : 3405805171 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For the flow past an airfoil at an angle of attack, which of the following statements is correct

Options :

34058020681. ✖ Resultant of normal force and axial force is equal to lift

34058020682. ✖ Resultant of normal force and axial force is equal to drag

34058020683. ✔ Resultant of normal force and axial force is equal to resultant of lift and drag

34058020684. ✖ Normal force is equal to resultant of lift and drag

Question Number : 12 Question Id : 3405805172 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For an aircraft moving at 100 m/s under standard atmospheric conditions at sea level, the freestream dynamic pressure is

Options :

34058020685. ✔ 6.125 kPa

34058020686. ✖ 0.6125 kPa

34058020687. ✖ 12.25 kPa

34058020688. ✖ 1.225 kPa

Question Number : 13 Question Id : 3405805173 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The location of center of pressure measured from the leading edge for an airfoil at an angle of attack having $c_l = 0.9$ and $c_{m,c/4} = -0.09$ (pitch-up moment is considered positive) is

Options :

34058020689. ✖ $0.15c$

34058020690. ✖ $0.25c$

34058020691. ✔ $0.35c$

34058020692. ✖ $0.45c$

Question Number : 14 Question Id : 3405805174 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For the flow fields over two different bodies to be dynamically similar, which of the following conditions is necessary

Options :

34058020693. ✔ The bodies are geometrically similar

34058020694. ✖ The bodies are identical is size and shape

34058020695. ✖ The freestream velocity has to be the same for both flow fields

34058020696. ✖ The freestream pressure has to be the same for both flow fields

Question Number : 15 Question Id : 3405805175 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider an aircraft flying with a velocity of 250 m/s at an altitude where the temperature is 200K. The Mach number of the aircraft is

Options :

34058020697. ✖ 1.25

34058020698. ✖ 1.13

34058020699. ✖ 1.00

34058020700. ✔ 0.88

Question Number : 16 Question Id : 3405805176 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The stall velocity of an aircraft having a conventional configuration is independent of

Options :

34058020701. ✖ Angle of attack

34058020702. ✖ $C_{L,max}$

34058020703. ✖ Altitude

34058020704. ✔ $C_{D,min}$

Question Number : 17 Question Id : 3405805177 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The Bernoulli's equation is not valid for

Options :

34058020705. ✖ Inviscid flow

34058020706. ✖ Incompressible flow

34058020707. ✖ Steady flow

34058020708. ✔ Viscous flow

Question Number : 18 Question Id : 3405805178 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For an open-circuit low-speed wind tunnel

Options :

34058020709. ✔ The length of diffuser is greater than that of the nozzle

34058020710. ✖ The length of diffuser is lesser than that of the nozzle

34058020711. ✖ The length of diffuser is equal to that of the nozzle

34058020712. ✖ The length of diffuser is equal to that of the test section

Question Number : 19 Question Id : 3405805179 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Pitot-static probe is used for measuring _____ in a flow

Options :

34058020713. ✖ Temperature

34058020714. ✔ Velocity

34058020715. ✖ Angular velocity

34058020716. ✖ Density

Question Number : 20 Question Id : 3405805180 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Considering inviscid and incompressible flow, the superposition of a source and uniform mean flow will result in flow over

Options :

34058020717. ✖ A Rankine oval

34058020718. ✔ A semi-infinite body

34058020719. ✖ A cylinder

34058020720. ✖ An Ellipse

Question Number : 21 Question Id : 3405805181 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For the inviscid, incompressible flow over a cylinder, the minimum value of C_p on the cylinder is

Options :

34058020721. ✖ -1

34058020722. ✖ -2

34058020723. ✔ -3

34058020724. ✖ -4

Question Number : 22 Question Id : 3405805182 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following statements about NACA 2418 airfoil is not correct

Options :

34058020725. ✔ It is a symmetrical airfoil

34058020726. ✖ The maximum thickness of the airfoil is 18 % of the chord

34058020727. ✖ The maximum camber is 2 % of the chord

34058020728. ✖ The maximum camber is located at $0.4c$ from the leading edge

Question Number : 23 Question Id : 3405805183 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The sum of skin friction drag and form drag due to flow separation is called

Options :

34058020729. ✖ Wave drag

34058020730. ✖ Induced drag

34058020731. ✔ Parasitic drag

34058020732. ✖ Form drag

Question Number : 24 Question Id : 3405805184 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Aerodynamic center of an airfoil is defined as that point about which

Options :

34058020733. ✖ Lift is acting

34058020734. ✖ Drag is acting

34058020735. ✖ Aerodynamic moment is zero

34058020736. ✔ Aerodynamic moment is independent of the angle of attack

Question Number : 25 Question Id : 3405805185 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The classical thin airfoil theory does not predict the

Options :

34058020737. ✖ Slope of c_l versus angle of attack curve

34058020738. ✖ Angle of attack corresponding to zero lift for a symmetric airfoil

34058020739. ✖ Aerodynamic center and center of pressure of an airfoil

34058020740. ✔ Stall characteristics of an airfoil

Question Number : 26 Question Id : 3405805186 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The thin airfoil theory predicts the aerodynamic center for a cambered airfoil in incompressible flow to be at the

Options :

34058020741. ✔ Quarter-chord of the airfoil

34058020742. ✖ Leading edge of the airfoil

34058020743. ✖ Trailing edge of the airfoil

34058020744. ✖ Mid-chord of the airfoil

Question Number : 27 Question Id : 3405805187 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following statements about high-lift devices is false

Options :

34058020745. ✖ High lift devices increases $C_{L,max}$

34058020746. ✖ High lift devices are operated during take-off

34058020747. ✖ High lift devices are operated during landing

34058020748. ✔ High lift devices are operated during cruise

Question Number : 28 Question Id : 3405805188 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Induced drag is produced due to

Options :

34058020749. ✖ Infinite size of wing

34058020750. ✖ Shear stress acting on the wing

34058020751. ✖ Flow separation

34058020752. ✔ Drag produced by the downwash

Question Number : 29 Question Id : 3405805189 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Prandtl's classical lifting-line theory predicts that for an elliptical circulation distribution the downwash is

Options :

34058020753. ✖ zero

34058020754. ✔ constant along the span

34058020755. ✖ linearly increases along the span

34058020756. ✖ linearly decreases along the span

Question Number : 30 Question Id : 3405805190 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Prandtl's classical lifting-line theory predicts that

Options :

34058020757. ✔ $C_{D,i} = \frac{C_L^2}{\pi eAR}$

34058020758. ✖ $C_{D,i} = \frac{C_L^3}{\pi eAR}$

34058020759. ✖ $C_{D,i} = \frac{C_L^2}{\pi e}$

34058020760. ✖ $C_{D,i} = \frac{ARC_L^2}{\pi e}$

Question Number : 31 Question Id : 3405805191 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For isentropic flow, the pressure and temperature at stations 1 and 2 are related as

Options :

34058020761. ✖ $\frac{p_2}{p_1} = \frac{T_2}{T_1}$

34058020762. ✖ $\frac{p_2}{p_1} = \frac{T_1}{T_2}$

34058020763. ✔ $\frac{p_2}{p_1} = \left(\frac{T_2}{T_1}\right)^{\gamma/(\gamma-1)}$

34058020764. ✖ $\frac{p_2}{p_1} = \left(\frac{T_1}{T_2}\right)^{\gamma/(\gamma-1)}$

Question Number : 32 Question Id : 3405805192 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The thermodynamic quantity which remains constant across a shock wave is

Options :

34058020765. ✔ Stagnation temperature

34058020766. ✖ Stagnation pressure

34058020767. ✖ Entropy

34058020768. ✖ Density

Question Number : 33 Question Id : 3405805193 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following statements about speed of sound in a calorically perfect gas is wrong

Options :

34058020769. ✖ Speed of sound depends on temperature

34058020770. ✖ Speed of sound depends on molecular weight of the gas

34058020771. ✖ Speed of sound is dependent on ratio of specific heats

34058020772. ✔ Speed of sound is independent of temperature and molecular weight

Question Number : 34 Question Id : 3405805194 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The product of the characteristic Mach numbers before and after the normal shock is

Options :

34058020773. ✔ 1

34058020774. ✖ 2

34058020775. ✖ e

34058020776. ✖ π

Question Number : 35 Question Id : 3405805195 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For a normal shock, $\lim_{M_1 \to \infty} M_2 =$

Options :

34058020777. ✖ 0

34058020778. ✖ 1

34058020779. ✔ $\sqrt{\frac{\gamma-1}{2\gamma}}$

34058020780. ✖ $\sqrt{\frac{2\gamma}{\gamma-1}}$

Question Number : 36 Question Id : 3405805196 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The Mach angle is related to the Mach number as

Options :

34058020781. ✖ $\sin^{-1}\frac{M}{2}$

34058020782. ✔ $\sin^{-1}\frac{1}{M}$

34058020783. ✖ $\cos^{-1}\frac{M}{2}$

34058020784. ✖ $\cos^{-1}\frac{1}{M}$

Question Number : 37 Question Id : 3405805197 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For an oblique shock, the shock-wave angle corresponding to strong shock is

Options :

34058020785. ✖ Equal to that of weak shock

34058020786. ✔ Greater than that of weak shock

34058020787. ✖ Less than that of weak shock

34058020788. ✖ Independent of Mach number

Question Number : 38 Question Id : 3405805198 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider the shock wave angle for a cone in relation to that of a wedge for the same half angle and Mach number. Which of the following statements is correct

Options :

34058020789. ✖ Both will have the same shock wave angle

34058020790. ✖ The shock wave angle for the cone will be higher

34058020791. ✔ The shock wave angle for the wedge will be higher

34058020792. ✖ The shock wave angle is independent of the half angle of cone or wedge

Question Number : 39 Question Id : 3405805199 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following statements about Prandtl-Meyer expansion waves is wrong

Options :

34058020793. ✖ The flow across a Prandtl-Meyer expansion wave is isentropic

34058020794. ✖ The Mach number of the flow across Prandtl-Meyer expansion wave increases

34058020795. ✔ The flow direction across a Prandtl-Meyer expansion wave remains same

34058020796. ✖ The flow across a Prandtl-Meyer expansion wave is adiabatic

Question Number : 40 Question Id : 3405805200 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Using the Prandtl-Glauret rule, the compressible C_p distribution based on the incompressible $C_{p,0}$ distribution is given by

Options :

34058020797. ✖ $C_p = \frac{C_{p,0}}{1-M_\infty^2}$

34058020798. ✔ $C_p = \frac{C_{p,0}}{\sqrt{1-M_\infty^2}}$

34058020799. ✖ $C_p = \frac{C_{p,0}}{\sqrt{1+M_\infty^2}}$

34058020800. ✖ $C_p = \frac{C_{p,0}}{1+M_\infty^2}$

Question Number : 41 Question Id : 3405805201 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The critical Mach number for an airfoil is the

Options :

34058020801. ✖ Lowest Mach number at which bow shock appears in front of the airfoil

34058020802. ✖ Lowest Mach number at which drag starts increasing significantly

34058020803. ✖ Lowest Mach number at which unsteady flow is observed over the airfoil

34058020804. ✔ Lowest Mach number at which sonic flow is achieved over the airfoil

Question Number : 42 Question Id : 3405805202 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For the flow through a convergent-divergent nozzle under perfectly expanded conditions

Options :

34058020805. ✔ Pressure decreases monotonously from the chamber to the exit

34058020806. ✖ Pressure increases monotonously from the chamber to the exit

34058020807. ✖ Pressure increases from the chamber to the throat and then decreases from throat to exit

34058020808. ✖ Pressure decreases from the chamber to the throat and then increases from throat to exit

Question Number : 43 Question Id : 3405805203 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The Newtonian theory for hypersonic flow predicts the C_p distribution as (θ is the angle between tangent to the surface and freestream)

Options :

34058020809. ✔ $C_p = 2\sin^2\theta$

34058020810. ✖ $C_p = 2\cos^2\theta$

34058020811. ✖ $C_p = 2\sin^3\theta$

34058020812. ✖ $C_p = 2\cos^3\theta$

Question Number : 44 Question Id : 3405805204 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The propulsive efficiency of a jet engine is defined as (V_j is the jet velocity and V_∞ is the freestream velocity)

Options :

34058020813. ✖ $\frac{V_\infty}{V_\infty+V_j}$

34058020814. ✖ $\frac{V_\infty}{V_\infty-V_j}$

34058020815. ✖ $\frac{V_j}{V_\infty+V_j}$

34058020816. ✔ $\frac{2V_\infty}{V_\infty+V_j}$

Question Number : 45 Question Id : 3405805205 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For reciprocating engines without superchargers

Options :

34058020817. ✖ Shaft power increases with increase in altitude

34058020818. ✔ Shaft power decreases with increase in altitude

34058020819. ✖ Shaft power remains constant with altitude

34058020820. ✖ Shaft power increases linearly up to certain altitude and then remain constant with altitude

Question Number : 46 Question Id : 3405805206 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In a turbojet engine, which of the following statements is correct

Options :

34058020821. ✖ Thrust increases linearly with freestream velocity

34058020822. ✖ Thrust increases exponentially with freestream velocity

34058020823. ✖ Thrust decreases linearly with freestream velocity

34058020824. ✔ Thrust remains almost constant with freestream velocity

Question Number : 47 Question Id : 3405805207 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In comparison to a turbojet engine which produces similar amount of thrust, the thrust specific fuel consumption of a turbofan engine is

Options :

34058020825. ✖ Significantly higher than that of the turbojet engine

34058020826. ✖ Equal to that of the turbojet engine

34058020827. ✔ Significantly lower than that of the turbojet engine

34058020828. ✖ Marginally higher than that of the turbojet engine

Question Number : 48 Question Id : 3405805208 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following statements about turboprop engines is wrong

Options :

34058020829. ✖ Turboprop engine is essentially a propeller driven by a gas-turbine engine

34058020830. ✖ For most turboprops, about 5-10 % of the thrust is associated with the jet exhaust

34058020831. ✖ The free stream Mach number is restricted to about 0.7

34058020832. ✔ Turboprop is an ideal choice as engine for supersonic aircraft

Question Number : 49 Question Id : 3405805209 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following statements about use of afterburners in turbojet/turbofan engines is wrong

Options :

34058020833. ✔ Use of afterburner results in reduced specific fuel consumption

34058020834. ✖ Use of afterburners results in enhanced levels of thrust

34058020835. ✖ Afterburner is used only during short bursts when higher thrust is required

34058020836. ✖ An afterburner is a duct downstream of the turbine into which extra fuel is sprayed and burned

Question Number : 50 Question Id : 3405805210 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

During the steady, level flight of an aircraft, which of the following relations is correct

Options :

34058020837. ✖ Thrust = Weight of the aircraft

34058020838. ✖ Lift = Drag

34058020839. ✖ Thrust = Lift

34058020840. ✔ Lift = Weight of the aircraft

Question Number : 51 Question Id : 3405805211 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The velocity of an aircraft corresponding to minimum thrust required for steady, level flight

Options :

34058020841. ✔ Increases with altitude

34058020842. ✖ Decreases with altitude

34058020843. ✖ Is independent of altitude

34058020844. ✖ Remains constant up to about 11 km altitude

Question Number : 52 Question Id : 3405805212 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For an aircraft flying in steady, level flight with maximum value of lift to drag ratio

Options :

34058020845. ✔ Zero-lift drag = Drag due to lift

34058020846. ✖ Zero-lift drag = 3 X Drag due to lift

34058020847. ✖ Zero-lift drag = Drag due to lift /3

34058020848. ✖ Zero-lift drag = 2 X Drag due to lift

Question Number : 53 Question Id : 3405805213 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In steady, level flight, the maximum velocity of an aircraft is determined by the

Options :

34058020849. ✖ Minimum value of thrust required curve

34058020850. ✔ High-speed intersection of the thrust required and thrust available curves

34058020851. ✖ Low-speed intersection of the thrust required and thrust available curves

34058020852. ✖ Average of the high-speed and low-speed intersections of the thrust required and thrust available curves

Question Number : 54 Question Id : 3405805214 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is not an example of high-lift device

Options :

34058020853. ✖ Kruger flap

34058020854. ✖ Fowler flap

34058020855. ✔ Ventral strake

34058020856. ✖ Leading-edge slat

Question Number : 55 Question Id : 3405805215 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

During steady, unaccelerated climb of an aircraft, the rate of climb is given by

Options :

34058020857. ✖ Weight/Excess power

34058020858. ✖ Weight/Excess thrust

34058020859. ✔ Excess power/Weight

34058020860. ✖ Excess thrust/Weight

Question Number : 56 Question Id : 3405805216 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For a jet-powered aircraft, the maximum rate of climb during steady, unaccelerated flight is

Options :

34058020861. ✖ Independent of altitude

34058020862. ✔ Dependent on thrust to weight ratio

34058020863. ✖ Unaffected by wing loading

34058020864. ✖ Independent of drag polar

Question Number : 57 Question Id : 3405805217 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

During gliding of an unpowered aircraft, the equilibrium glide angle measured with respect to local horizontal is given by

Options :

34058020865. ✖ $\tan\theta = \frac{L}{D}$

34058020866. ✖ $\cos\theta = \frac{L}{D}$

34058020867. ✔ $\tan\theta = \frac{D}{L}$

34058020868. ✖ $\cos\theta = \frac{D}{L}$

Question Number : 58 Question Id : 3405805218 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Absolute ceiling of an aircraft is defined as the height at which

Options :

34058020869. ✖ The maximum thrust is zero

34058020870. ✖ The maximum velocity is zero

34058020871. ✔ The maximum rate of climb is zero

34058020872. ✖ The maximum rate of climb is 100 feet/minute

Question Number : 59 Question Id : 3405805219 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The range of a jet-propelled aircraft is directly proportional to

Options :

34058020873. ✖ Thrust specific fuel consumption

34058020874. ✔ $\frac{\sqrt{C_L}}{C_D}$

34058020875. ✖ $\frac{C_D}{C_L}$

34058020876. ✖ $\frac{\sqrt{C_D}}{C_L}$

Question Number : 60 Question Id : 3405805220 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Endurance of an aircraft is defined as the

Options :

34058020877. ✔ Amount of time the aircraft can stay in air on one load of fuel

34058020878. ✖ Maximum distance that the aircraft can cover on one load of fuel

34058020879. ✖ Maximum distance that the aircraft can cover while gliding

34058020880. ✖ Amount of time the aircraft can stay in air while gliding

Question Number : 61 Question Id : 3405805221 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For a steady level turn of an aircraft, the turn radius (R) is related to the freestream velocity (V_∞) and load factor (n) as

Options :

34058020881. ✖ $R = \frac{V_\infty^2}{g\sqrt{n^2+1}}$

34058020882. ✔ $R = \frac{V_\infty^2}{g\sqrt{n^2-1}}$

34058020883. ✖ $R = \frac{V_\infty^2}{\sqrt{n^2-1}}$

34058020884. ✖ $R = \frac{gV_\infty^2}{\sqrt{n^2-1}}$

Question Number : 62 Question Id : 3405805222 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The maximum turn rate for steady level turn does not depend on

Options :

34058020885. ✖ Thrust to weight ratio

34058020886. ✖ Wing loading

34058020887. ✖ Drag polar

34058020888. ✔ Excess power

Question Number : 63 Question Id : 3405805223 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

On the V-N diagram for an airplane, the corner velocity does not correspond to

Options :

34058020889. ✖ C_L and n are simultaneously at their maximum value

34058020890. ✔ C_D is having its minimum value

34058020891. ✖ Smallest possible instantaneous turn radius

34058020892. ✖ Largest possible instantaneous turn rate

Question Number : 64 Question Id : 3405805224 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The ground-roll distance required for take-off of a jet aircraft

Options :

34058020893. ✖ Decreases with wing loading

34058020894. ✖ Increases with thrust to weight ratio

34058020895. ✖ Decreases with altitude

34058020896. ✔ Decreases with $(C_L)_{max}$

Question Number : 65 Question Id : 3405805225 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is not an advantage of a pusher configuration for the engine

Options :

34058020897. ✖ Less disturbed flow field over wing and fuselage

34058020898. ✖ Engine noise in the cabin is reduced

34058020899. ✔ CG is shifted rearward and hence affecting longitudinal stability

34058020900. ✖ Pilot's field of view is better

Question Number : 66 Question Id : 3405805226 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Kepler's first law states that

Options :

34058020901. ✖ Planets follow circular orbits around the Sun

34058020902. ✔ Planets follow elliptical orbits around the Sun

34058020903. ✖ Planets follow parabolic orbits around the Sun

34058020904. ✖ Planets follow hyperbolic orbits around the Sun

Question Number : 67 Question Id : 3405805227 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Low Earth Orbits are not used by

Options :

34058020905. ✖ Remote sensing satellites

34058020906. ✖ International Space Station

34058020907. ✖ Hubble Space Telescope

34058020908. ✔ GPS satellites

Question Number : 68 Question Id : 3405805228 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is not an advantage of Low Earth Orbits

Options :

34058020909. ✖ Less energy is required to place a satellite in LEO compared to Medium Earth Orbit or Geosynchronous orbit

34058020910. ✖ Lower communication delay

34058020911. ✖ Able to observe Earth more clearly because of proximity

34058020912. ✔ Atmospheric drag

Question Number : 69 Question Id : 3405805229 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is not a characteristic of a satellite in Geostationary orbit

Options :

34058020913. ✖ The satellite remains above the same point on the Earth's equator

34058020914. ✖ The orbit of the satellite is circular around earth

34058020915. ✔ The distance of the satellite from the Earth's surface is 6378 km

34058020916. ✖ The satellite has the same angular velocity as that of Earth

Question Number : 70 Question Id : 3405805230 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The maximum latitude visible from a satellite in geostationary orbit at a distance of 42164 km from the Earth's center is (Given that the radius of Earth is 6378 km)

Options :

34058020917. ✖ $\sin^{-1}\left(\frac{6378}{42164}\right)$

34058020918. ✔ $\cos^{-1}\left(\frac{6378}{42164}\right)$

34058020919. ✖ $\tan^{-1}\left(\frac{6378}{42164}\right)$

34058020920. ✖ $\tan^{-1}\left(\frac{42164}{6378}\right)$

Question Number : 71 Question Id : 3405805231 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For a satellite in an elliptical orbit

Options :

34058020921. ✖ The time period is directly proportional to the semi major axis

34058020922. ✖ The time period is inversely proportional to the semi major axis

34058020923. ✔ The square of the time period is directly proportional to the cube of the semi major axis

34058020924. ✖ The cube of the time period is directly proportional to the square of the semi major axis

Question Number : 72 Question Id : 3405805232 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The escape velocity from a planet of mass M and radius R is

Options :

34058020925. ✔

$\sqrt{\frac{2GM}{R}}$

34058020926. ✖ $\sqrt{\frac{GM}{R}}$

34058020927. ✖ $\sqrt{\frac{GM}{2R}}$

34058020928. ✖ $\sqrt{\frac{GM}{3R}}$

Question Number : 73 Question Id : 3405805233 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider the restricted three body problem where m_1, m_2 and m_3 are the masses with m_1, $m_2 >> m_3$. In a noninertial, co-moving coordinate system with the origin at the center of mass of m_1 and m_2 and x-axis oriented towards m_2, the third mass (m_3) will have _____ at the Lagrange points

Options :

34058020929. ✖ Zero velocity and non-zero acceleration

34058020930. ✔ Zero velocity and zero acceleration

34058020931. ✖ Non-zero velocity and non-zero acceleration

34058020932. ✖ Non-zero velocity and zero acceleration

Question Number : 74 Question Id : 3405805234 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The number of Lagrange points for the Earth-Moon system is

Options :

34058020933. ✖ One

34058020934. ✖ Three

34058020935. ✔ Five

34058020936. ✖ Seven

Question Number : 75 Question Id : 3405805235 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is not true about Hohmann transfer

Options :

34058020937. ✖ It involves transfer between two coplanar circular orbits sharing the same focus

34058020938. ✖ It involves two impulse manoeuvres

34058020939. ✖ The trajectory is an elliptical orbit tangent to both circles

34058020940. ✔ It involves continuous operation of onboard rockets

Question Number : 76 Question Id : 3405805236 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Launching a satellite due east from the equator has the benefit of

Options :

34058020941. ✔ Taking advantage of the Earth's rotational velocity

34058020942. ✖ Reduced gravitational pull of the Earth

34058020943. ✖ Atmospheric wind conditions being favorable

34058020944. ✖ Gravitational pull from the Moon

Question Number : 77 Question Id : 3405805237 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The characteristic velocity of a rocket propulsion system is defined as (p_1 is the chamber pressure, A_t is the throat area and $\dot{m}$ is the propellant mass flow rate)

Options :

34058020945. ✖ $\frac{p_1}{A_t \dot{m}}$

34058020946. ✔ $\frac{p_1 A_t}{\dot{m}}$

34058020947. ✖ $\frac{p_1 \dot{m}}{A_t}$

34058020948. ✖ $\frac{A_t}{p_1 \dot{m}}$

Question Number : 78 Question Id : 3405805238 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Propellant mass fraction for a rocket refers to the ratio of

Options :

34058020949. ✖ Oxidizer mass to fuel mass

34058020950. ✔ Propellant mass to initial mass of the rocket

34058020951. ✖ Fuel mass to oxidizer mass

34058020952. ✖ Fuel mass to mass of rocket structure

Question Number : 79 Question Id : 3405805239 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For a given chamber pressure to ambient pressure, the optimum thrust coefficient of a rocket nozzle is achieved when

Options :

34058020953. ✖ Exit pressure = 2 X ambient pressure

34058020954. ✖ Exit pressure = 3 X ambient pressure

34058020955. ✔ Exit pressure = ambient pressure

34058020956. ✖ Exit pressure = ambient pressure / 2

Question Number : 80 Question Id : 3405805240 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following statements about characteristic velocity of a rocket propulsion system is wrong

Options :

34058020957. ✖ It is a function of propellant characteristics

34058020958. ✖ It is dependent on combustion chamber design

34058020959. ✖ It is used as a figure of merit in comparing propellant combinations

34058020960. ✔ It can be used for seeing the altitude variation for a given nozzle configuration

Question Number : 81 Question Id : 3405805241 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following characteristics about a convergent-divergent rocket nozzle operating at under-expanded condition is wrong

Options :

34058020961. ✖ The exit pressure is greater than the eternal pressure

34058020962. ✖ Exit area is too small for optimum expansion

34058020963. ✖ Expansion waves are seen outside the nozzle

34058020964. ✔ Normal shocks are present inside the nozzle

Question Number : 82 Question Id : 3405805242 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For a rocket operating in gravity-free & drag-free environment, the velocity increment (u) is related to effective exhaust velocity (c), initial mass (m_0) and final mass (m_f) as

Options :

34058020965. ✔ $u = c \ln\left(\frac{m_0}{m_f}\right)$

34058020966. ✖

$$u = c\left(\frac{m_0}{m_f}\right)$$

34058020967. ✖ $$u = c\ \ln\left(\frac{m_f}{m_0}\right)$$

34058020968. ✖ $$u = c\ \left(\frac{m_f}{m_0}\right)$$

Question Number : 83 Question Id : 3405805243 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is not significant cause for perturbations for satellite trajectory in low altitude orbits

Options :

34058020969. ✖ Earth's oblateness

34058020970. ✖ Aerodynamics drag

34058020971. ✖ Solar radiation

34058020972. ✔ Earth's rotation

Question Number : 84 Question Id : 3405805244 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is not an advantage associated with multi-staging in rockets

Options :

34058020973. ✖ Can provide higher velocities

34058020974. ✖ Can carry higher payload

34058020975. ✖ Improved overall performance

34058020976. ✔ Extra weight associated with stage-separation mechanism

Question Number : 85 Question Id : 3405805245 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For stable combustion of solid propellants, the burning rate exponent (n) should be

Options :

34058020977. ✖ $n = 0$

34058020978. ✖ $n = 1$

34058020979. ✔ $0 < n < 1$

34058020980. ✖ $n > 1$

Question Number : 86 Question Id : 3405805246 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Star grain configuration of solid rocket propellant results in

Options :

34058020981. ✔ Neutral burning

34058020982. ✖ Progressive burning

34058020983. ✖ Regressive burning

34058020984. ✖ Progressive-regressive burning

Question Number : 87 Question Id : 3405805247 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A common binder used in composite solid propellants is

Options :

34058020985. ✖ Nitroglycerine

34058020986. ✖ Nitrocellulose

34058020987. ✔ Hydroxyl terminated polybutadiene

34058020988. ✖ Ammonium perchlorate

Question Number : 88 Question Id : 3405805248 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is not an advantage of liquid rocket engine relative to solid rocket motor

Options :

34058020989. ✖ Higher specific impulse

34058020990. ✔ Simple design

34058020991. ✖ Can be randomly stopped and restarted

34058020992. ✖ Can be tested at full thrust on ground

Question Number : 89 Question Id : 3405805249 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Arcjet electrothermal thrusters using Hydrogen give specific impulse around

Options :

34058020993. ✖ 1 to 10 seconds

34058020994. ✔ 500 to 1000 seconds

34058020995. ✖ 100 to 200 seconds

34058020996. ✖ 400 to 500 seconds

Question Number : 90 Question Id : 3405805250 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For the two dimensional state of stress at a point represented by the Mohr's circle, which of the following statement is false

Options :

34058020997. ✖ The center of the circle lies on the σ axis

34058020998. ✔ The radius of the circle is equal to the maximum value of principal stress

34058020999. ✖ The radius of the circle is equal to the maximum value of shear stress

34058021000. ✖ The radius of the circle is equal to half the difference between the maximum and minimum principal stresses

Question Number : 91 Question Id : 3405805251 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The modulus of rigidity (G) is related to the Young's modulus (E) and Poisson's ratio (ν) as

Options :

34058021001. ✔ $G = \frac{E}{2(1+\nu)}$

34058021002. ✖ $G = \frac{E}{2}$

34058021003. ✖

$G = \frac{E}{(1+\nu)}$

34058021004. ✖ $G = \frac{E}{2(1-\nu)}$

Question Number : 92 Question Id : 3405805252 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The vertical deflection produced by a tip load (P) on a cantilever of length (L) and bending rigidity (EI) is

Options :

34058021005. ✔ $\frac{PL^3}{3EI}$

34058021006. ✖ $\frac{PL^3}{2EI}$

34058021007. ✖ $\frac{PL^2}{3EI}$

34058021008. ✖ $\frac{PL^2}{2EI}$

Question Number : 93 Question Id : 3405805253 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The maximum deflection for a square plate (a x a) and thickness (t), simply supported on all four edges and subjected to uniform load of intensity (q) with Young's Modulus (E) and Poisson's ratio = 0.3, is proportional to

Options :

34058021009. ✔ $\frac{qa^4}{Et^3}$

34058021010. ✖ $\frac{qa^4}{Et^4}$

34058021011. ✖ $\frac{qt^4}{Ea^3}$

34058021012. ✖ $\frac{qt^4}{Ea^4}$

Question Number : 94 Question Id : 3405805254 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The buckling load associated with a beam of length (L) and bending rigidity (EI) and simply supported on both edges is

Options :

34058021013. ✔ $\frac{\pi^2 EI}{L^2}$

34058021014. ✖ $\frac{\pi^2 EI}{L^3}$

34058021015. ✖ $\frac{\pi^2 EI}{L}$

34058021016. ✖ $\frac{\pi(EI)^2}{L^2}$

Question Number : 95 Question Id : 3405805255 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The buckling load of a clamped-clamped beam is _____ that of a simply-supported beam of same length and bending rigidity

Options :

34058021017. ✖ Equal to

34058021018. ✖ Twice

34058021019. ✔ Four times

34058021020. ✖ Half

Question Number : 96 Question Id : 3405805256 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The 2024 alloy of aluminum contains

Options :

34058021021. ✖ Copper, zinc and titanium

34058021022. ✔

Copper, magnesium and manganese

34058021023. ✖ Copper and iron

34058021024. ✖ Iron and suphur

Question Number : 97 Question Id : 3405805257 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is not a correct reason for using titanium for load bearing structural components in aircraft

Options :

34058021025. ✖ High specific strength and stiffness

34058021026. ✖ Considerable strength at temperatures 400^0C -500^0C

34058021027. ✖ Good resistance to corrosion

34058021028. ✔ Lower density compared to aluminum

Question Number : 98 Question Id : 3405805258 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is a disadvantage associated with CFRP in comparison to Aluminum alloys

Options :

34058021029. ✖ Higher Young's modulus

34058021030. ✖ Higher tensile strength

34058021031. ✔ Brittle in nature

34058021032. ✖ Lower density

Question Number : 99 Question Id : 3405805259 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is not a function of ribs in the aircraft wing structure

Options :

34058021033. ✔ Provide bending stiffness to the wing

34058021034. ✖ Maintain shape of cross section of wings

34058021035. ✖ Providing end restraint to stiffeners and enhance buckling load

34058021036. ✖ Act of formers of the aerofoil shape of wing

Question Number : 100 Question Id : 3405805260 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following statement is false about the nature of loading on the wing

Options :

34058021037. ✖ On the ground, the upper surface of wing experiences tensile forces and the lower surface experiences compressive forces

34058021038. ✖ In flight, the upper surface of wing experiences compressive forces and the lower surface experiences tensile forces

34058021039. ✔ Wings do not experience bending loads

34058021040. ✖ Wings with engines mounted on them can experience torsional loads

Question Number : 101 Question Id : 3405805261 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following statement about "safe life" and "fail-safe" approaches to design of aircraft structural components is wrong

Options :

34058021041. ✖ In the safe life approach, the structure is designed to have a minimum life during which no catastrophic damage will occur

34058021042. ✖ The fail-safe approach considers that the failure of a member in a redundant structure does not lead to collapse of complete structure

34058021043. ✔ Critical load bearing components need not have a safe life

34058021044. ✖ More economical to design part of structure using fail-safe approach

Question Number : 102 Question Id : 3405805262 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For a beam in bending, which of the following statement about neutral axis is wrong

Options :

34058021045. ✖ It is assumed that plane sections perpendicular to the axis remain plane after bending

34058021046. ✔ The shear stress on the neutral axis is zero

34058021047. ✖ The normal stress on the neutral axis is zero

34058021048. ✖ The neutral axis passes through the centroid of the cross sectional area

Question Number : 103 Question Id : 3405805263 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The fundamental natural frequency of a simply supported beam of length (L), density (ρ), area of cross section (A) and bending stiffness (EI)

Options :

34058021049. ✔ $\frac{\pi}{2L^2}\sqrt{\frac{EI}{\rho A}}$

34058021050. ✖ $\frac{\pi}{2L^2}\sqrt{\frac{\rho A}{EI}}$

34058021051. ✖ $\frac{\pi}{2L}\sqrt{\frac{EI}{\rho A}}$

34058021052. ✖ $\frac{\pi}{2L}\sqrt{\frac{\rho A}{EI}}$

Question Number : 104 Question Id : 3405805264 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The function of the spoilers is not to

Options :

34058021053. ✖ Reduce the lift

34058021054. ✖ Increase the drag

34058021055. ✔ Reduce the thrust

34058021056. ✖ Reduce the airspeed

Question Number : 105 Question Id : 3405805265 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

When the left rudder pedal is pushed forward

Options :

34058021057. ✔ Aircraft nose yaws towards left

34058021058. ✖ Aircraft pitches up

34058021059. ✖ Aircraft pitches down

34058021060. ✖ Aircraft rolls starboard wing down

Question Number : 106 Question Id : 3405805266 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Temperature inversion refers to

Options :

34058021061. ✖ Change of sign of temperature when expressed in degree Celsius

34058021062. ✖ Change of sign of temperature when expressed in degree Fahrenheit

34058021063. ✔ Change of sign of the lapse rate relative to its usual sign at any layer in the atmosphere

34058021064. ✖ Temperature at any altitude reducing below the surface temperature

Question Number : 107 Question Id : 3405805267 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Doldrums are

Options :

34058021065. ✔ Calm winds prevailing near the Equator

34058021066. ✖ Winds from high-pressure sub-tropical belt to Equator

34058021067. ✖ Southwesterly winds in the northern hemisphere

34058021068. ✖ Cold winds blowing in the Arctic region

Question Number : 108 Question Id : 3405805268 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For incompressible flows, the equivalent air speed (V_{EAS}) is related to true air speed (V) and density ratio ($\sigma = \frac{\rho}{\rho_{Sea\ level}}$)

Options :

34058021069. ✖ $V_{EAS} = V\sigma$

34058021070. ✔ $V_{EAS} = V\sqrt{\sigma}$

34058021071. ✖ $V_{EAS} = V/\sigma$

34058021072. ✖ $V_{EAS} = V/\sqrt{\sigma}$

Question Number : 109 Question Id : 3405805269 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Beaufort scale is use to

Options :

34058021073. ✖ Measure pressure

34058021074. ✖ Measure density

34058021075. ✖ Classify humidity

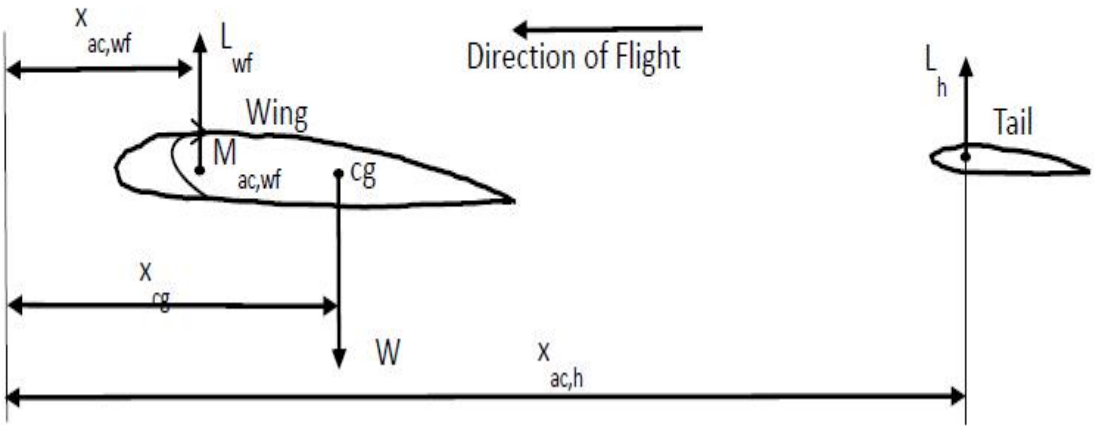
34058021076. ✔ Classify wind speeds

Question Number : 110 Question Id : 3405805270 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

. The wing-tail arrangement of a conventional airplane can be represented as below.

For moment equilibrium, the following condition must hold



Options :

34058021077. ✖ $M_{ac,wf} + W(x_{cg} - x_{ac,wf}) = 0$

34058021078. ✔ $M_{ac,wf} + L_{wf}(x_{cg} - x_{ac,wf}) - L_h(x_{ac,h} - x_{cg}) = 0$

34058021079. ✖ $M_{ac,wf} + W(x_{cg} - x_{ac,wf}) - L_h(x_{ac,h} - x_{cg}) = 0$

34058021080. ✖ $M_{ac,wf} + L_{wf}(x_{cg} - x_{ac,wf}) - W(x_{ac,h} - x_{cg}) = 0$

Question Number : 111 Question Id : 3405805271 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If $x_{cg} < x_{ac,wf}$ and $M_{ac,wf} < 0$ for a conventional aircraft configuration, then to satisfy the moment equilibrium (L_h is the lift produced by the horizontal tail)

Options :

34058021081. ✖ $L_h = 0$

34058021082. ✔ $L_h < 0$

34058021083. ✖ $L_h > 0$

34058021084. ✖ $L_{wf} = 0$

Question Number : 112 Question Id : 3405805272 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For an aircraft having a conventional configuration, the elevator hinge moment does not depend on

Options :

34058021085. ✖ Angle of attack

34058021086. ✖ Elevator angle

34058021087. ✔ Rudder angle

34058021088. ✖ Elevator tab angle

Question Number : 113 Question Id : 3405805273 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The function of the elevator trim tab is to

Options :

34058021089. ✖ Enhance lift

34058021090. ✖ Reduce drag

34058021091. ✖ Throttle the engine

34058021092. ✔ Maintain steady flight with zero stick force

Question Number : 114 Question Id : 3405805274 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following statement about the neutral point of an aircraft in a conventional configuration is true

Options :

34058021093. ✔ The stick-free neutral point is forward of the stick-fixed neutral point

34058021094. ✖ The stick-free neutral point is aft of the stick-fixed neutral point

34058021095. ✖ The stick-free neutral point is always at the cg of the aircraft

34058021096. ✖ The stick-free neutral point is always at the midpoint of the wing

Question Number : 115 Question Id : 3405805275 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The short period undamped natural frequency associated with the longitudinal motion of a conventional aircraft configuration does not depend on the

Options :

34058021097. ✖ Location of CG relative to the aerodynamic center of the aircraft

34058021098. ✖ Dynamic pressure

34058021099. ✖ Pitching moment of inertia

34058021100. ✔ Rolling moment of inertia

Question Number : 116 Question Id : 3405805276 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following statements about the phugoid motion in longitudinal mode is wrong

Options :

34058021101. ✖ During the motion, angle of attack remains constant

34058021102. ✖ The undamped natural frequency is dependent on the velocity

34058021103. ✖ The damping ratio depends on the aerodynamic coefficients

34058021104. ✔ The damping ratio is independent of the aspect ratio of the wings

Question Number : 117 Question Id : 3405805277 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The undamped Dutch roll natural frequency does not depend on

Options :

34058021105. ✖ Static directional stability

34058021106. ✖ Dynamic pressure

34058021107. ✔ Pitching moment of inertia

34058021108. ✖ Yawing moment of inertia

Question Number : 118 Question Id : 3405805278 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The Cooper-Harper pilot rating scale is used to

Options :

34058021109. ✔ Rate the flying qualities of a given aircraft

34058021110. ✖ Rate the speed of the aircraft

34058021111. ✖ Rate the appearance of the aircraft

34058021112. ✖ Rate the endurance of the aircraft

Question Number : 119 Question Id : 3405805279 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Degree of reaction in a turbomachine rotor is defined as the

Options :

34058021113. ✖ Ratio of change in stagnation enthalpy across stage to the change in enthalpy across rotor

34058021114. ✔ Ratio of change in enthalpy across rotor to the change in stagnation enthalpy across stage

34058021115. ✖ Ratio of change in enthalpy across stator to the change in stagnation enthalpy across stage

34058021116. ✖ Ratio of change in enthalpy across rotor to the change in enthalpy across stator

Question Number : 120 Question Id : 3405805280 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Midspan shrouds are provided in turbomachinery blades to

Options :

34058021117. ✖ Induce separation of flow

34058021118. ✖ Enhance the inertia of the blade

34058021119. ✖ Improved heat transfer

34058021120. ✔ Reduce blade vibration