

Code No: 56071

Set No. 1

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

III B.Tech. II Sem., II Mid-Term Examinations, April – 2014

CONCEPTUAL DESIGN OF FLIGHT VEHICLES

Objective Exam

Name: _____ Hall Ticket No.

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Answer All Questions. All Questions Carry Equal Marks. Time: 20 Min. Marks: 10.

I Choose the correct alternative:

1. Parasite drag includes skin friction drag and []
(A) Wave drag (B) form drag (C) induced drag (D) Profile drag
2. Theoretical value of slope of lift coefficient given in terms β s ($= M_2 - 1$) is []
(A) β (B) $\beta/2$ (C) $\beta/4$ (D) $4/\beta$
3. V-n diagram gives _____ []
(A) Aerodynamic limit (B) Maximum pitch (C) Gross wait (D) Unstable condition
4. The neutral point is the location of the centre of gravity of the aircraft when []
(A) the net aerodynamic moment about c.g. is zero
(B) the pitch moment coefficient is zero
(C) the slope of the pitch moment coefficient is negative
(D) the slope of the pitch moment coefficient about the c.g. is zero.
5. The derivative of the pitching moment coefficient of a transport aircraft is []
(A) zero (B) positive (C) negative (D) positive while climbing and negative in descent.
6. Elements of life cycle cost of an aircraft include []
(A) RDT&E but not pilot's salary
(B) RDT&E and Disposal
(C) Ground Support Equipment but not flyaway cost
(D) Only fabrication and maintenance costs
7. In the context of the life cycle cost of an aircraft, the D in RDT&E stands for []
(A) Design (B) Development (C) Deployment (D) Disposal
8. At present, a passenger aircraft minus the horizontal stabilizer is []
(A) statically stable (B) statically unstable (C) neutrally stable (D) requires a canard
9. The aircraft currently under development in India are []
(A) LCA and Saras (B) LCA and HF24 (C) LCA and HJT16 (D) Tejas and Kiran
10. Operation maintenance cost includes []
(A) manufacturing (B) tooling (C) fuel and oil (D) RDT&E

Cont.....2

II Fill in the blanks

11. Drag divergence Mach number as defined by Douglas Company is the Mach number at which
12. In the V-n diagram the load factor is _____
13. Schrenk's approximation is used to estimate the _____ distribution over a wing.
14. For a jet aircraft the drag coefficient is given by $C_D = CD_0 + KCL^2$. The drag coefficient corresponding to the best endurance is given by _____
15. The velocity of an aircraft for the best angle to climb is _____ than that for best rate of Climb.
16. For a jet aircraft the drag coefficient is given by $0 D L C = C + K C$. The drag coefficient corresponding to the best range is given by _____
17. Decision speed is the speed of the aircraft at which, _____
18. IOC include _____
19. Elements of life-cycle cost include _____
20. A helicopter with a single rotor is stabilized by _____

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Answer All Questions. All Questions Carry Equal Marks. Time: 20 Min. Marks: 10.

I Choose the correct alternative:

1. The neutral point is the location of the centre of gravity of the aircraft when []
(A) the net aerodynamic moment about c.g. is zero
(B) the pitch moment coefficient is zero
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2. The derivative of the pitching moment coefficient of a transport aircraft is []
(A) zero (B) positive (C) negative (D) positive while climbing and negative in descent.
3. Elements of life cycle cost of an aircraft include []
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(A) LCA and Saras (B) LCA and HF24 (C) LCA and HJT16 (D) Tejas and Kiran
7. Operation maintenance cost includes []
(A) manufacturing (B) tooling (C) fuel and oil (D) RDT&E
8. Parasite drag includes skin friction drag and []
(A) Wave drag (B) form drag (C) induced drag (D) Profile drag
9. Theoretical value of slope of lift coefficient given in terms β s ($= M_2 - 1$) is []
(A) β (B) $\beta/2$ (C) $\beta/4$ (D) $4/\beta$
10. V-n diagram gives _____ []
(A) Aerodynamic limit (B) Maximum pitch (C) Gross wait (D) Unstable condition

Cont.....2

II Fill in the blanks

11. For a jet aircraft the drag coefficient is given by $C_D = CD_0 + KCL^2$. The drag coefficient corresponding to the best endurance is given by _____
12. The velocity of an aircraft for the best angle to climb is _____ than that for best rate of Climb.
13. For a jet aircraft the drag coefficient is given by $0 D L C = C + K C$. The drag coefficient corresponding to the best range is given by _____
14. Decision speed is the speed of the aircraft at which, _____
15. IOC include _____
16. Elements of life-cycle cost include _____
17. A helicopter with a single rotor is stabilized by _____
18. Drag divergence Mach number as defined by Douglas Company is the Mach number at which
19. In the V-n diagram the load factor is _____
20. Schrenk's approximation is used to estimate the _____ distribution over a wing.

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Set No. 3

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Answer All Questions. All Questions Carry Equal Marks. Time: 20 Min. Marks: 10.

I Choose the correct alternative:

1. Elements of life cycle cost of an aircraft include []
(A) RDT&E but not pilot's salary
(B) RDT&E and Disposal
(C) Ground Support Equipment but not flyaway cost
(D) Only fabrication and maintenance costs
2. In the context of the life cycle cost of an aircraft, the D in RDT&E stands for []
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3. At present, a passenger aircraft minus the horizontal stabilizer is []
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6. Parasite drag includes skin friction drag and []
(A) Wave drag (B) form drag (C) induced drag (D) Profile drag
7. Theoretical value of slope of lift coefficient given in terms β s ($= M_2 - 1$) is []
(A) β (B) $\beta/2$ (C) $\beta/4$ (D) $4/\beta$
8. V-n diagram gives _____ []
(A) Aerodynamic limit (B) Maximum pitch (C) Gross weight (D) Unstable condition
9. The neutral point is the location of the centre of gravity of the aircraft when []
(A) the net aerodynamic moment about c.g. is zero
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10. The derivative of the pitching moment coefficient of a transport aircraft is []
(A) zero (B) positive (C) negative (D) positive while climbing and negative in descent.

Cont.....2

II Fill in the blanks

11. IOC include _____
12. Elements of life-cycle cost include _____
13. A helicopter with a single rotor is stabilized by _____
14. Drag divergence Mach number as defined by Douglas Company is the Mach number at which
15. In the V-n diagram the load factor is _____
16. Schrenk's approximation is used to estimate the _____ distribution over a wing.
17. For a jet aircraft the drag coefficient is given by $C_D = CD_0 + KCL^2$. The drag coefficient corresponding to the best endurance is given by _____
18. The velocity of an aircraft for the best angle to climb is _____ than that for best rate of Climb.
19. For a jet aircraft the drag coefficient is given by $0 D L C = C + K C$. The drag coefficient corresponding to the best range is given by _____
20. Decision speed is the speed of the aircraft at which, _____

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Answer All Questions. All Questions Carry Equal Marks. Time: 20 Min. Marks: 10.

I Choose the correct alternative:

1. At present, a passenger aircraft minus the horizontal stabilizer is []
(A) statically stable (B) statically unstable (C) neutrally stable (D) requires a canard
2. The aircraft currently under development in India are []
(A) LCA and Saras (B) LCA and HF24 (C) LCA and HJT16 (D) Tejas and Kiran
3. Operation maintenance cost includes []
(A) manufacturing (B) tooling (C) fuel and oil (D) RDT&E
4. Parasite drag includes skin friction drag and []
(A) Wave drag (B) form drag (C) induced drag (D) Profile drag
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(A) Aerodynamic limit (B) Maximum pitch (C) Gross weight (D) Unstable condition
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8. The derivative of the pitching moment coefficient of a transport aircraft is []
(A) zero (B) positive (C) negative (D) positive while climbing and negative in descent.
9. Elements of life cycle cost of an aircraft include []
(A) RDT&E but not pilot's salary
(B) RDT&E and Disposal
(C) Ground Support Equipment but not flyaway cost
(D) Only fabrication and maintenance costs
10. In the context of the life cycle cost of an aircraft, the D in RDT&E stands for []
(A) Design (B) Development (C) Deployment (D) Disposal

Cont.....2

II Fill in the blanks

11. Drag divergence Mach number as defined by Douglas Company is the Mach number at which
12. In the V-n diagram the load factor is _____
13. Schrenk's approximation is used to estimate the _____ distribution over a wing.
14. For a jet aircraft the drag coefficient is given by $C_D = CD_0 + KCL^2$. The drag coefficient corresponding to the best endurance is given by _____
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17. Decision speed is the speed of the aircraft at which, _____
18. IOC include _____
19. Elements of life-cycle cost include _____
20. A helicopter with a single rotor is stabilized by _____