Code No: 58092 **Set No. 1**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
IV B.Tech. II Sem., II Mid-Term Examinations, April-2014
HELICOPTER ENGINEERING
Objective Exam

Name: _____ Hall Ticket No. | | | | | | A | | | | |

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

I. Choose the correct alternative:

1. In hover the induced losses are about [ ]
a) 60% to 70% b) 50% to 60% c) 70% to 80% d) 45% to 55%

2. The major task in helicopter performance analysis is the calculation of the _____ and _____ [ ]
a) Lift and drag b) rotor force and power c) rotor moment and thrust d) none

3. The profile power C_{p_0} is the energy dissipated by the _____ of the blade. [ ]
a) Nomenclature b) width c) viscous drag d) coefficient of drag

4. The helicopter _____ is obtained from the performance data for the engine. [ ]
a) Power required b) power generated c) power available d) none

5. The figure of merit for the rotor hovering at minimum power loading is [ ]
a) Zero b) infinity c) equal to helicopter weight d) constant

6. The pilot's controls for the helicopter consist of a _____ for control of longitudinal and lateral moments. [ ]
a) Cyclic stick b) collective stick c) foot pedals d) none

7. In forward flight, the collective control is used mainly for _____. [ ]
a) Power trim b) thrust trim c) hover d) decent

8. The rotor collective pitch varies directly with the helicopter _____. [ ]
a) Drag b) lift c) gross weight d) thrust

9. A forward shaft of the helicopter center of gravity requires an _____ tilt of the tip-path plane. [ ]
a) Right side b) left side c) fore d) aft

10. A forward tilt of the control plane is required to maintain the tip-path-plane orientation as speed _____. [ ]
a) Increases b) decreases c) is constant d) none

Cont.....2

II Fill in the Blanks:

11. _____ is a propulsion arrangement whereby a fan, which is a type of propeller, is mounted within a cylindrical shroud or duct.

12. A lift jet is a jet engine angled to provide an aircraft with _____ instead of thrust.

13. A _____ aircraft features a wing that is horizontal for conventional forward flight and rotates up for vertical takeoff and landing.

14. _____ aircraft is an airplane able to take-off or land vertically or on short runways.

15. _____ wing aircraft are those with configurations that derive their lift forces directly from airscrews.

16. _____ chamber is a pressurized housing containing a gas or fluid at positive pressure.

17. Hovercraft are propelled by_____.

18. Hovercraft use _____ to produce a large volume of air below the hull that is slightly above atmospheric pressure.

19. Hovercraft Cushing is contained within a flexible _____ which allows the vehicle to travel over small obstructions without damage.

20. The plenum chamber and _____ jet are similar in concept.

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Code No: 58092 **Set No. 2**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
IV B.Tech. II Sem., II Mid-Term Examinations, April-2014
HELICOPTER ENGINEERING
Objective Exam

Name: _____ Hall Ticket No. | | | | | | A | | | | |

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

I. Choose the correct alternative:

1. The helicopter _____ is obtained from the performance data for the engine. [ ]
   a) Power required b) power generated c) power available d) none

2. The figure of merit for the rotor hovering at minimum power loading is [ ]
   a) Zero b) infinity c) equal to helicopter weight d) constant

3. The pilot's controls for the helicopter consist of a _____ for control of longitudinal and lateral moments. [ ]
   a) Cyclic stick b) collective stick c) foot pedals d) none

4. In forward flight, the collective control is used mainly for _____. [ ]
   a) Power trim b) thrust trim c) hover d) decent

5. The rotor collective pitch varies directly with the helicopter _____. [ ]
   a) Drag b) lift c) gross weight d) thrust

6. A forward shaft of the helicopter center of gravity requires an _____ tilt of the tip-path plane. [ ]
   a) Right side b) left side c) fore d) aft

7 A forward tilt of the control plane is required to maintain the tip-path-plane orientation as speed _____. [ ]
   a) Increases b) decreases c) is constant d) none

8. In hover the induced losses are about [ ]
   a) 60% to 70% b) 50% to 60% c) 70% to 80% d) 45% to 55%

9. The major task in helicopter performance analysis is the calculation of the _____ and _____ [ ]
   a) Lift and drag b) rotor force and power c) rotor moment and thrust d) none

10. The profile power C_{p_0} is the energy dissipated by the _____ of the blade. [ ]
    a) Nomenclature b) width c) viscous drag d) coefficient of drag

Cont.....2

II Fill in the Blanks:

11. _____ aircraft is an airplane able to take-off or land vertically or on short runways.

12. _____ wing aircraft are those with configurations that derive their lift forces directly from airscrews.

13. _____ chamber is a pressurized housing containing a gas or fluid at positive pressure.

14. Hovercraft are propelled by_____.

15. Hovercraft use _____ to produce a large volume of air below the hull that is slightly above atmospheric pressure.

16. Hovercraft Cushing is contained within a flexible _____ which allows the vehicle to travel over small obstructions without damage.

17. The plenum chamber and _____ jet are similar in concept.

18. _____ is a propulsion arrangement whereby a fan, which is a type of propeller, is mounted within a cylindrical shroud or duct.

19. A lift jet is a jet engine angled to provide an aircraft with _____ instead of thrust.

20. A _____ aircraft features a wing that is horizontal for conventional forward flight and rotates up for vertical takeoff and landing.

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Code No: 58092 **Set No. 3**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

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

HELICOPTER ENGINEERING

Objective Exam

Name: _____ Hall Ticket No. | | | | | | A | | | | |

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

I. Choose the correct alternative:

1. The pilot's controls for the helicopter consist of a _____ for control of longitudinal and lateral moments. [ ]
   a) Cyclic stick b) collective stick c) foot pedals d) none

2. In forward flight, the collective control is used mainly for _____. [ ]
   a) Power trim b) thrust trim c) hover d) decent

3. The rotor collective pitch varies directly with the helicopter _____. [ ]
   a) Drag b) lift c) gross weight d) thrust

4. A forward shaft of the helicopter center of gravity requires an _____ tilt of the tip-path plane. [ ]
   a) Right side b) left side c) fore d) aft

5. A forward tilt of the control plane is required to maintain the tip-path-plane orientation as speed _____. [ ]
   a) Increases b) decreases c) is constant d) none

6. In hover the induced losses are about [ ]
   a) 60% to 70% b) 50% to 60% c) 70% to 80% d) 45% to 55%

7. The major task in helicopter performance analysis is the calculation of the _____ and _____ [ ]
   a) Lift and drag b) rotor force and power c) rotor moment and thrust d) none

8. The profile power C_{p_0} is the energy dissipated by the _____ of the blade. [ ]
   a) Nomenclature b) width c) viscous drag d) coefficient of drag

9. The helicopter _____ is obtained from the performance data for the engine. [ ]
   a) Power required b) power generated c) power available d) none

10. The figure of merit for the rotor hovering at minimum power loading is [ ]
    a) Zero b) infinity c) equal to helicopter weight d) constant

Cont.....2

II Fill in the Blanks:

11. _____ chamber is a pressurized housing containing a gas or fluid at positive pressure.

12. Hovercraft are propelled by_____.

13. Hovercraft use _____ to produce a large volume of air below the hull that is slightly above atmospheric pressure.

14. Hovercraft Cushing is contained within a flexible _____ which allows the vehicle to travel over small obstructions without damage.

15. The plenum chamber and _____ jet are similar in concept.

16. _____ is a propulsion arrangement whereby a fan, which is a type of propeller, is mounted within a cylindrical shroud or duct.

17. A lift jet is a jet engine angled to provide an aircraft with _____ instead of thrust.

18. A _____ aircraft features a wing that is horizontal for conventional forward flight and rotates up for vertical takeoff and landing.

19. _____ aircraft is an airplane able to take-off or land vertically or on short runways.

20. _____ wing aircraft are those with configurations that derive their lift forces directly from airscrews.

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Code No: 58092 **Set No. 4**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
IV B.Tech. II Sem., II Mid-Term Examinations, April-2014
HELICOPTER ENGINEERING
Objective Exam

Name: _____ Hall Ticket No. | | | | | | A | | | | |

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

I. Choose the correct alternative:

1. The rotor collective pitch varies directly with the helicopter _____. [ ]
   a) Drag b) lift c) gross weight d) thrust

2. A forward shaft of the helicopter center of gravity requires an _____ tilt of the tip-path plane. [ ]
   a) Right side b) left side c) fore d) aft

3. A forward tilt of the control plane is required to maintain the tip-path-plane orientation as speed _____. [ ]
   a) Increases b) decreases c) is constant d) none

4. In hover the induced losses are about [ ]
   a) 60% to 70% b) 50% to 60% c) 70% to 80% d) 45% to 55%

5. The major task in helicopter performance analysis is the calculation of the _____ and _____ [ ]
   a) Lift and drag b) rotor force and power c) rotor moment and thrust d) none

6. The profile power C_{p_0} is the energy dissipated by the _____ of the blade. [ ]
   a) Nomenclature b) width c) viscous drag d) coefficient of drag

7. The helicopter _____ is obtained from the performance data for the engine. [ ]
   a) Power required b) power generated c) power available d) none

8. The figure of merit for the rotor hovering at minimum power loading is [ ]
   a) Zero b) infinity c) equal to helicopter weight d) constant

9. The pilot's controls for the helicopter consist of a _____ for control of longitudinal and lateral moments. [ ]
   a) Cyclic stick b) collective stick c) foot pedals d) none

10. In forward flight, the collective control is used mainly for _____. [ ]
    a) Power trim b) thrust trim c) hover d) decent

Cont.....2

II Fill in the Blanks:

11. Hovercraft use _____ to produce a large volume of air below the hull that is slightly above atmospheric pressure.

12. Hovercraft Cushing is contained within a flexible _____ which allows the vehicle to travel over small obstructions without damage.

13. The plenum chamber and _____ jet are similar in concept.

14. _____ is a propulsion arrangement whereby a fan, which is a type of propeller, is mounted within a cylindrical shroud or duct.

15. A lift jet is a jet engine angled to provide an aircraft with _____ instead of thrust.

16. A _____ aircraft features a wing that is horizontal for conventional forward flight and rotates up for vertical takeoff and landing.

17. _____ aircraft is an airplane able to take-off or land vertically or on short runways.

18. _____ wing aircraft are those with configurations that derive their lift forces directly from airscrews.

19. _____ chamber is a pressurized housing containing a gas or fluid at positive pressure.

20. Hovercraft are propelled by_____.

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