Code No: R07A12101 | **R07** | **Set No. 2**

I B.Tech Examinations,December 2010
INTRODUCTION TO AEROSPACE ENGINEERING
Aeronautical Engineering

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

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1. Describe the difference between conventional landing and tricycle landing gears.
   [16]

2. Explain the factors affecting the performance of the aircraft during steady flight.
   [16]

3. Explain in detail the different types of entry paths of a space vehicle. [16]

4. Consider a rocket with Kerosine - Oxygen as the fuel - oxidiser combination. The ratio of initial weight before blast off to the final weight at burnout is 5.5. Calculate the burner velocity. [16]

5. (a) Define boundary layer. Explain Reynolds number.
   (b) Discuss in detail about the various types of drag in an airplane and methods of minimising the drag. [6+10]

6. (a) Write the purpose of angle of attack indicator?
   (b) Explain about Artificial horizon as can be visualised. [8+8]

7. (a) Discuss about the material commonly used in flight structure?
   (b) State the advantages of aluminum which makes it suitable for aircraft industry.
   [8+8]

8. (a) At what part of a wing does a shock wave is formed first.
   (b) What is the buffer boundary of an aircraft? [8+8]

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Code No: R07A12101 | **R07** | **Set No. 4**

I B.Tech Examinations,December 2010
INTRODUCTION TO AEROSPACE ENGINEERING
Aeronautical Engineering

Time: 3 hours
Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks
⋆ ⋆ ⋆ ⋆ ⋆

1. Consider a rocket with Kerosine - Oxygen as the fuel - oxidiser combination. The ratio of initial weight before blast off to the final weight at burnout is 5.5. Calculate the burner velocity. [16]

2. (a) Define boundary layer. Explain Reynolds number.
   (b) Discuss in detail about the various types of drag in an airplane and methods of minimising the drag. [6+10]

3. Explain the factors affecting the performance of the aircraft during steady flight. [16]

4. Explain in detail the different types of entry paths of a space vehicle. [16]

5. Describe the difference between conventional landing and tricycle landing gears. [16]

6. (a) Write the purpose of angle of attack indicator?
   (b) Explain about Artificial horizon as can be visualised. [8+8]

7. (a) At what part of a wing does a shock wave is formed first.
   (b) What is the buffer boundary of an aircraft? [8+8]

8. (a) Discuss about the material commonly used in flight structure?
   (b) State the advantages of aluminum which makes it suitable for aircraft industry. [8+8]

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Code No: R07A12101   **R07**   **Set No. 1**

I B.Tech Examinations,December 2010
INTRODUCTION TO AEROSPACE ENGINEERING
Aeronautical Engineering

Time: 3 hours   Max Marks: 80
Answer any FIVE Questions
All Questions carry equal marks
⋆ ⋆ ⋆ ⋆ ⋆

1. (a) Write the purpose of angle of attack indicator?

   (b) Explain about Artificial horizon as can be visualised.   [8+8]

2. Describe the difference between conventional landing and tricycle landing gears.
        [16]

3. (a) At what part of a wing does a shock wave is formed first.

   (b) What is the buffer boundary of an aircraft?   [8+8]

4. (a) Discuss about the material commonly used in flight structure?

   (b) State the advantages of aluminum which makes it suitable for aircraft industry.
        [8+8]

5. Explain in detail the different types of entry paths of a space vehicle.   [16]

6. Consider a rocket with Kerosine - Oxygen as the fuel - oxidiser combination. The ratio of initial weight before blast off to the final weight at burnout is 5.5. Calculate the burner velocity.   [16]

7. Explain the factors affecting the performance of the aircraft during steady flight.
        [16]

8. (a) Define boundary layer. Explain Reynolds number.

   (b) Discuss in detail about the various types of drag in an airplane and methods of minimising the drag.   [6+10]

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Code No: R07A12101 | **R07** | **Set No. 3**

I B.Tech Examinations,December 2010
INTRODUCTION TO AEROSPACE ENGINEERING
Aeronautical Engineering

Time: 3 hours   Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks
⋆ ⋆ ⋆ ⋆ ⋆

1. Consider a rocket with Kerosine - Oxygen as the fuel - oxidiser combination. The ratio of initial weight before blast off to the final weight at burnout is 5.5. Calculate the burner velocity.   [16]

2. Explain the factors affecting the performance of the aircraft during steady flight.
                                                                                    [16]

3. (a) At what part of a wing does a shock wave is formed first.
   (b) What is the buffer boundary of an aircraft?   [8+8]

4. Explain in detail the different types of entry paths of a space vehicle.   [16]

5. Describe the difference between conventional landing and tricycle landing gears.
                                                                                    [16]

6. (a) Define boundary layer. Explain Reynolds number.
   (b) Discuss in detail about the various types of drag in an airplane and methods of minimising the drag.   [6+10]

7. (a) Discuss about the material commonly used in flight structure?
   (b) State the advantages of aluminum which makes it suitable for aircraft industry.
                                                                                    [8+8]

8. (a) Write the purpose of angle of attack indicator?
   (b) Explain about Artificial horizon as can be visualised.   [8+8]

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