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15AE561

**Fifth Semester B.E. Degree Examination, July/August 2022**  
**History of Flight and Technology Forecast**

Time: 3 hrs.

Max. Marks: 80

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

**Module-1**

- 1 a. With the help of timeline, explain the history of aviation in detail. (08 Marks)  
b. Write a short note on "Sir George Cayley – The true inventor of Airplane". (08 Marks)

**OR**

- 2 a. Briefly explain the Interregnum. (08 Marks)  
b. Explain the historical achievements of Glider Man and Percy Pilcher. (08 Marks)

**Module-2**

- 3 a. Explain the Aeronautical Triangle. (08 Marks)  
b. Write a brief note on development of the first practical airplane. (08 Marks)

**OR**

- 4 a. With the help of the time line, explain the development of faster and higher airplanes. (10 Marks)  
b. Discuss the problem of propulsion in the early developments of aviation. (06 Marks)

**Module-3**

- 5 a. List the classifications of the aircraft. (06 Marks)  
b. With neat sketch, explain the components of an aircraft and their functions. (10 Marks)

**OR**

- 6 a. What are the basic instruments for flying? And explain any four in detail. (10 Marks)  
b. Explain the conventional control and powered control. (06 Marks)

**Module-4**

- 7 a. With neat sketch, explain the fuselage structure construction. (10 Marks)  
b. Enumerate the uses of aluminium alloy and Titanium alloy in aircraft. (06 Marks)

**OR**

- 8 a. With neat sketch, explain the wing structure in detail. (06 Marks)  
b. Define Hooke's law. Draw the stress-strain curves for ductile and brittle materials. (10 Marks)

**Module-5**

- 9 a. List the classifications of power plant used in aircrafts. (06 Marks)  
b. With the help of neat sketch, explain the working of a turbojet engine. (10 Marks)

**OR**

- 10 a. Draw and explain the principles of operation of a liquid propelled rocket. (10 Marks)  
b. Write a short note on space exploration. (06 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.