



CBCS SCHEME

15AE561

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Fifth Semester B.E. Degree Examination, July/August 2021 History of Flight and Technology Forecast

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions.

- 1 a. Explain briefly the history of aviation with help of timeline. (10 Marks)
b. Write a short note on the Interregnum. (06 Marks)
- 2 a. Write a short note on Montgolfier contributions. (06 Marks)
b. Explain the contribution of "The Glider Man" in the history of aviation. (06 Marks)
c. Write a short note on Percy Pilcher's work. (04 Marks)
- 3 a. Explain the Aeronautical triangle. (08 Marks)
b. Describe the history of Wright Flyer I. (08 Marks)
- 4 a. With neat sketch, explain the development of various configuration of planes. (08 Marks)
b. Discuss the development in structure, propulsion and materials of an aircraft over the years in detail. (08 Marks)
- 5 a. With neat sketch, explain the components of an airplane and their functions. (08 Marks)
b. Explain the following: (08 Marks)
 - (i) Instrument indicated Air Speed.
 - (ii) CAS.
 - (iii) EAS
 - (iv) TAS
- 6 a. What is degrees of freedom? Explain the Axes Control System of an aircrafts. (08 Marks)
b. What are the different instruments used in an aircraft? (08 Marks)
- 7 a. Write the detailed construction techniques of various fuselage structures. (08 Marks)
b. Explain the following: (08 Marks)
 - (i) Stress
 - (ii) Hooke's law
 - (iii) Stress-strain Diagrams for ductile and brittle materials.
- 8 a. What are the desirable properties of materials for aircrafts applications? (08 Marks)
b. Explain the uses of, (i) Aluminium alloy (ii) Titanium alloy (iii) Stainless steel (iv) Composite materials. (08 Marks)
- 9 a. With neat sketch, explain the working of Piston engine. (08 Marks)
b. What are the merits and demerits of piston engine, turbojet engine and turbofan engine? (08 Marks)
- 10 a. Differentiate between Air-breathing engines and Non-Air breathing engines. (08 Marks)
b. Explain the working principle of a Rocket and write its classification. (08 Marks)

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.