

Hall Ticket No

--	--	--	--	--	--	--	--	--	--

Question Paper Code: AAE010



INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Four Year B.Tech V Semester End Examinations(Regular) - November, 2019

Regulation: IARE – R16

AIRCRAFT SYSTEMS AND CONTROL

Time: 3 Hours

(AE)

Max Marks: 70

Answer ONE Question from each Unit

All Questions Carry Equal Marks

All parts of the question must be answered in one place only

UNIT – I

- (a) Define airframe system. Describe the modern civil aircraft as a sub-system. [7M]

(b) Justify how external environment will affect the system with examples. [7M]
- (a) Is many of the vehicle systems are common for military and commercial aircraft? List the characteristics of vehicle systems. [7M]

(b) Explain how mission system prosecute the designated mission. List any three sub-system. [7M]

UNIT – II

- (a) Explain the power distribution and conversion in aircraft. [7M]

(b) What are needs for air conditioning in aircraft? Explain the evaporative vapour cycle air conditioning system. [7M]
- (a) Explain the working principle of Boot-strap air cycle system. [7M]

(b) Write the effects of an ice formation over a wing on its performance. Explain pneumatic deicing boot system. [7M]

UNIT – III

- (a) Explain the working principle of closed hydraulic system and its necessity. [7M]

(b) List out various types of braking and anti skidding systems in aircraft. Illustrate the brake system with a neat sketch. [7M]
- (a) List the vital components of a landing gear system and explain its uses. [7M]

(b) Justify how a hydraulic system takes an important role in aircraft. [7M]

UNIT – IV

- (a) Explain engine monitoring sensors and engine monitoring indicators? Explain engine control of a modern aircraft. [7M]

(b) What are the basic components present in aircraft fuel system? Discuss with neat sketches. [7M]

8. (a) Explain the working principle of Full Authority Control Systems. [7M]
(b) Is vent necessary in fuel tank? Explain the importance of it. [7M]

UNIT – V

9. (a) List any four combined flight control surfaces. Describe any one of them. [7M]
(b) Explain the operation of cable pulley system in detail with a neat sketch. [7M]
10. (a) Define fly by wire technology of aircraft systems. Discuss about the fly by wire operation in A330. [7M]
(b) Justify why redundancy is required in flight control actuation? Explain the multiple redundancy actuations with suitable sketch. [7M]