

**April 2019**

Time - Three hours  
(Maximum Marks: 75)

- [N.B: (1) Q.No. 8 in PART - A and Q.No. 16 in PART - B are compulsory. Answer any FOUR questions from the remaining in each PART - A and PART - B  
(2) Answer division (a) or division (b) of each question in PART - C.  
(3) Each question carries 2 marks in PART - A, 3 marks in Part - B and 10 marks in PART - C.]

**PART - A**

1. Define mach trim.
2. What is anti-skid system?
3. What are the primary control surfaces of an aircraft?
4. What is stabilators?
5. How can identify the vegetable based hydraulic fluid?
6. What do you meant by feedback line?
7. What is vapour lock?
8. What is bleed air?

**PART - B**

9. What are the different types of landing gears used in aircraft?
10. What are the advantages of fly-by-wire control?
11. What is aileron differential control system?
12. What is the purpose of an accumulator in a hydraulic system?
13. What are the advantages of pneumatic system over hydraulic system?
14. What are the primary requirements of a fuel system?
15. Name atleast three types of fuel tanks used in aircrafts.
16. What is the function of piccolo or spray tube in thermal anti-icing?

[Turn over.....]

PART - C

17. (a) Explain landing gear retraction system with a neat sketch.  
(Or)  
(b) Explain brake system for Boeing-757 airplane.
18. (a) Discuss briefly various types of primary controls used in aircraft.  
(Or)  
(b) State function of different types of secondary controls that comprise aircraft control systems.
19. (a) What are the components of the pneumatic system? Explain with neat sketches, a typical pneumatic systems used in aircraft power plants.  
(Or)  
(b) Explain hydraulic systems. What are the different types of hydraulic pumps and selector valves used in aircraft hydraulic systems.
20. (a) Explain with neat illustrations anti-icing and de-icing systems used in aircraft.  
(Or)  
(b) Explain the aircraft cabin pressurization systems with neat sketches.
21. (a) Explain the working and features of gravity feed systems with neat sketches.  
(Or)  
(b) Explain gas turbine engine fuel system with neat sketches.

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