879 Register No.: [ ]

October 2018

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 aerodynamic centre.
2. Define drag.
3. What is the use of elevators?
4. What is meant by servo tabs?
5. Define wind tunnel.
6. State shock wave.
7. What is mach number?
8. Define angle of attack.

PART – B

9. Define lift coefficient.
10. What is meant by steady state flight?
11. State the term pitch control.
12. Write a note on glide ratio.
13. Differentiate between laminar flow and turbulent flow.
14. What is meant by drag inducing devices?
15. Write down the effect due to compressibility.
16. What are the pressure measuring devices in wind tunnel?

[Turn over.....

PART – C

17. (a) Explain about ISA.

(Or)

(b) (i) Define the term aerodynamic centre and centre of pressure.
(ii) Explain lift co-efficient and drag co-efficient.

18. (a) Discuss and derive the relationship between lift, weight, thrust and drag .

(Or)

(b) Briefly explain the influence of load factor.

19. (a) Explain about the boundary layer control in wings.

(Or)

(b) Explain the operation and effect of pitch control devices in detail.

20. (a) (i) Explain the types of wind tunnel.
(ii) List out the pressure measurement devices employed in wind tunnel. Explain any one.

(Or)

(b) Explain the working principle of closed circuit wind tunnel.

21. (a) Discuss in detail about area rule in high speed flight.

(Or)

(b) Write the effects of sweep back on critical mach number on different flight speed.
