

Outlines

The exam is in oral. You will be asked a lot of questions coming from our course. The more you accurately answered, the more points you get.

1. Information of the aircraft of Wright brothers, the airship invented by Henri Giffard.
2. Typical terminologies in aerospace technology that from mythology.
Chang Er, Jade Rabbit, Tiangong(Celestial Palace), Pegasus, Ares, Atlas
3. The classification of aircrafts. The pictures of a few aircrafts will be shown, you should point out the type (passenger aircraft, cargo aircraft, fighter, trainer) of these aircrafts.
4. The variables to describe the state of a point in the flow
5. The definition of pressure, density, temperature, viscosity.
6. What is compressible flow and incompressible flow
7. How to calculate the speed of sound
8. The definition of Mach number
9. The gas species in the air
10. What is boundary layer of flows
11. The atmospheric layers
12. What is shock
13. Flow regimes
14. Control surfaces on the aircraft (rudder, vertical stabilizer, ailerons, flaps...)
15. The function of these control surfaces
16. Forces acting on the aircraft
17. Forces acting on the rocket
18. The brief definition of pitch, roll and yaw
19. Basic knowledges of idea nozzle (read the material I sent of rocket)
20. How to calculate the thrust of a nozzle
21. Classifications of rocket engines
22. Briefly talk about the gas turbine engines
23. Typical structures of turbojet, turbofan and ramjet
24. The brief definition of navigation

25. What is dead reckoning
26. Briefly talk about gyroscope
27. What is accelerometer
28. How GPS works
29. The differences between American GPS and Chinese Beidou-2 system.
30. Knowledges about multistage rocket (Tsiolkovski formula)
31. Knowledges about software OpenRocket
32. Classifications of orbits of the spacecrafts around the earth
33. Classifications of the stallites
34. Kepler's laws of planetary motion
35. Orbits of typical spacecrafts, navigation satellites, ISS, communication satellites, etc.