



SNS COLLEGE OF TECHNOLOGY

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COIMBATORE-641 035, TAMIL NADU



DEPARTMENT OF AEROSPACE ENGINEERING

Faculty Name : **Dr.A.Arun Negemiya,** Academic Year : **2025-2026 (Even)**
ASP/Aero
Year & Branch : **II Aerospace** Semester : **IV**
Course : **23ASB201 & Aerospace Propulsion**

Question Bank

UNIT V – PERFORMANCE OF AEROSPACE VEHICLES

Part A – 2 Marks (20 Questions)

Q.No	Question	Bloom's Level	Source (Company / Exam / Year)
1	Define the static performance of an aerospace vehicle.	Remember (L1)	NPTEL
2	What is vehicle acceleration?	Remember (L1)	GATE 2021
3	Define thrust-to-weight ratio.	Understand (L2)	AIRBUS (2019)
4	What is nozzle performance?	Remember (L1)	Rolls-Royce
5	Name different types of rocket propulsion systems.	Remember (L1)	ISRO
6	What is a solid rocket motor?	Remember (L1)	DRDO
7	Define a liquid propellant rocket.	Remember (L1)	GATE
8	What is a hybrid rocket?	Remember (L1)	NPTEL
9	Define specific impulse in vehicle performance.	Understand (L2)	ISRO
10	What is electric propulsion?	Remember (L1)	ISRO (2020)
11	Mention one advantage of electric propulsion.	Understand (L2)	NPTEL
12	What is magnetic levitation propulsion?	Remember (L1)	AIRBUS

13	Define effective exhaust velocity.	Remember (L1)	GATE
14	What is payload fraction?	Understand (L2)	ISRO
15	What is a vehicle performance characteristic curve?	Understand (L2)	NPTEL
16	Name one solid rocket propellant.	Remember (L1)	DRDO
17	What is nozzle expansion loss?	Remember (L1)	GATE
18	What is the hybrid propellant advantage?	Understand (L2)	ISRO
19	What is the thrust coefficient?	Remember (L1)	GATE
20	State one application of magnetic levitation propulsion.	Remember (L1)	AIRBUS

Part B – 15 Marks (30 Questions)

Q.No	Question	Bloom's Level	Source
1	Explain static performance parameters of aerospace vehicles.	Understand (L2)	NPTEL
2	Derive an expression for the acceleration of an aerospace vehicle.	Apply (L3)	GATE 2021
3	Explain vehicle performance characteristics with diagrams.	Understand (L2)	AIRBUS
4	Discuss nozzle performance and its effect on thrust.	Analyze (L4)	Rolls-Royce
5	Explain the performance characteristics of solid rocket motors.	Analyze (L4)	ISRO
6	Describe liquid rocket engine performance parameters.	Analyze (L4)	GATE
7	Compare solid, liquid, and hybrid rocket propulsion systems.	Analyze (L4)	DRDO
8	Explain propellant characteristics affecting vehicle performance.	Analyze (L4)	NPTEL
9	Derive an expression for the thrust coefficient.	Apply (L3)	GATE 2020
10	Explain altitude effects on rocket nozzle performance.	Analyze (L4)	GATE
11	Discuss hybrid rocket engine performance advantages.	Evaluate (L5)	ISRO
12	Explain electric propulsion systems for space vehicles.	Understand (L2)	ISRO
13	Compare chemical and electric propulsion in terms of performance.	Analyze (L4)	GATE

14	Discuss the performance of ion and Hall-effect thrusters.	Analyze (L4)	NPTEL
15	Explain magnetic levitation propulsion and its applications.	Understand (L2)	AIRBUS
16	Derive the payload fraction relation for space vehicles.	Apply (L3)	GATE
17	Discuss the limitations of chemical propulsion systems.	Evaluate (L5)	DRDO
18	Explain thrust–weight ratio effects on vehicle acceleration.	Analyze (L4)	NPTEL
19	Solve a numerical problem on vehicle acceleration.	Apply (L3)	GATE 2022
20	Explain the performance matching of the nozzle and the vehicle.	Analyze (L4)	Rolls-Royce
21	Discuss the environmental impact of propulsion systems.	Evaluate (L5)	ICAO
22	Explain the performance optimization of aerospace vehicles.	Analyze (L4)	AIRBUS
23	Compare rocket and air-breathing vehicle performance.	Analyze (L4)	GATE
24	Discuss future trends in aerospace vehicle propulsion.	Evaluate (L5)	ISRO (2023)
25	Explain vehicle performance during the ascent phase.	Analyze (L4)	NPTEL
26	Case study: Launch vehicle performance evaluation.	Create (L6)	ISRO
27	Discuss safety considerations in propulsion performance.	Evaluate (L5)	DRDO
28	Explain thrust modulation and control in rockets.	Analyze (L4)	ISRO
29	Evaluate the advantages of hybrid propulsion for space missions.	Evaluate (L5)	GATE
30	Design-level discussion on next-generation aerospace propulsion.	Create (L6)	ISRO / AIRBUS