Artemis II Re-entry Science

Aerospace Engineering · Practice Test · 12 Questions

1. Who is the Commander of the Artemis II mission?

A) Dr Chris James
B) Reid Wiseman
C) Hayabusa
D) Elon Musk

2. What is the approximate speed of the Orion spacecraft during re-entry?

A) Mach 10
B) Mach 20
C) Mach 30
D) Mach 50

3. At what temperature must the Orion spacecraft survive during re-entry?

A) 1,000°C
B) 2,000°C
C) 3,000°C
D) 5,000°C

4. What state of matter is the gas surrounding the craft during re-entry that blocks communication?

A) Solid
B) Liquid
C) Gas
D) Plasma

5. What is the approximate velocity of a spacecraft returning from the Moon?

A) 5 km/s
B) 8 km/s
C) 11 km/s
D) 15 km/s

6. How much kinetic energy is involved in a return from the Moon compared to low Earth orbit?

A) Half as much
B) The same
C) Almost double
D) Ten times more

7. What is the kinetic energy of a spacecraft returning from the Moon?

A) 32 MJ/kg
B) 60 MJ/kg
C) 100 MJ/kg
D) 11 MJ/kg

8. What is the simplest type of planetary entry that uses no aerodynamic techniques?

A) Skip entry
B) Gliding entry
C) Ballistic entry
D) Double dip

9. How many g-forces can a ballistic entry produce, making it unsafe for humans?

A) Up to 5 g
B) Up to 10 g
C) Up to 50 g
D) Up to 100 g

10. What did the Space Shuttle use to reduce g-forces to around 1 g?

A) Parachutes
B) Aerodynamic lift
C) Retro-rockets
D) Airbags

11. What is the term for flying a capsule off-axis to produce lift?

A) Angle of attack
B) Vertical drop
C) Spin stabilization
D) Orbiting

12. What is the name of the heat shield material used on the Orion capsule?

A) PICA-X
B) AVCOAT
C) Carbon-Carbon
D) Titanium