

REVIEW EXAM I (Part 1)

This exam is primarily about the Space Race, the Cold War, and the Mercury, Gemini, and Apollo Programs; The latter two were a steady step-by-step process to getting a man to walk on the moon.

ROCKET PIONEERS AND SPACE TASK FORCE PEEPS

- Tsiolkovski
- Goddard
- Oberth
- Von Braun
- Korolev
- Robert Gilruth
- Christopher Kraft
- Max Faget
- John Houbolt

SPACE RACE

- Sputnik
- Explorer – what it discovered
- V-2 rocket – original use, role on post war rocket development
- Project Paperclip
- R-7 rocket – original use, role in space race
- Why Russians had heavier lifting capability than US in the beginning

COLD WAR

- Who was Russian leader when Sputnik launched? US President?
- Formation of NASA from NACA, why from NACA, who formed NASA?
- NATO vs Warsaw Pact
- Cold War Politics and Space Race (what were political goals of Space Race)
- When did Cold War end?

ROCKET SCIENCE

- Newton's 3 Laws of Motion
- Vectors, Mass, Inertia, Velocity, Acceleration, Forces, Angular Momentum
- Reaction Propulsion (rocket thrust)
- How rockets accelerate and why they work most efficiently in vacuum (2 reasons)

MERCURY MISSIONS

- What were the goals of Project Mercury?
- How many Mercury astronauts were there and who were they?
- How many Mercury flights were there?
- Who was the first man in space? The first American?
- Who was the first man to orbit earth? First American?
- What was different about the first two Mercury flights?
- Which Mercury astronaut did not fly a Mercury mission? Why?
- At what stage in the Mercury Program did Kennedy direct NASA to the moon?

GEMINI MISSIONS

- What were the original goals of Project Gemini? Which goal was not accomplished?
- What was the goal added later?
- Who was the first man to do an EVA? First American?
- Know which mission accomplished which of the goals of Gemini
- What was the Agena spacecraft used for?
- Which goal of Gemini turned out to be very dangerous and was difficult to attain

APOLLO MISSIONS

- Apollo 1
 - Know about The Fire; Block I spacecraft and why it happen?
 - Who died in The Fire?
 - What was learned?
- Apollo 7
 - Goals (Block II spacecraft)
 - First “mutiny in space”; who was Commander?
- Apollo 8
 - Who was first go to the moon?
 - For what reasons did Apollo 8 go to the moon instead of a different mission?
- Apollo 11
 - The first landing- what are some of the difficulties did Armstrong and Aldrin experienced during powered descent?
- Apollo’s 15 and 17
 - Who flew these missions? What were the goals?
- How many Apollo missions were there? How many men flew to the moon? How many men flew to the moon twice? How many men walked on the moon?

There are several milestones in an Apollo mission. I outline them below in order. Be prepared to describe any one of them and be sure to know the order in which they take place (given below)

1. launch
2. trans lunar injection burn (TLI)
3. docking with and extraction of the LEM
4. passive thermal control (PTC)
5. lunar orbit insertion (LOI)
6. LEM powered descent
7. lunar liftoff (ascent stage of LEM)
8. lunar orbit rendezvous (LOR) and docking of CM and LEM
9. cast off LEM
10. trans earth injection burn (TEI)
11. passive thermal control (PTC) again
12. jettison SM from CM
13. reentry

Good luck!