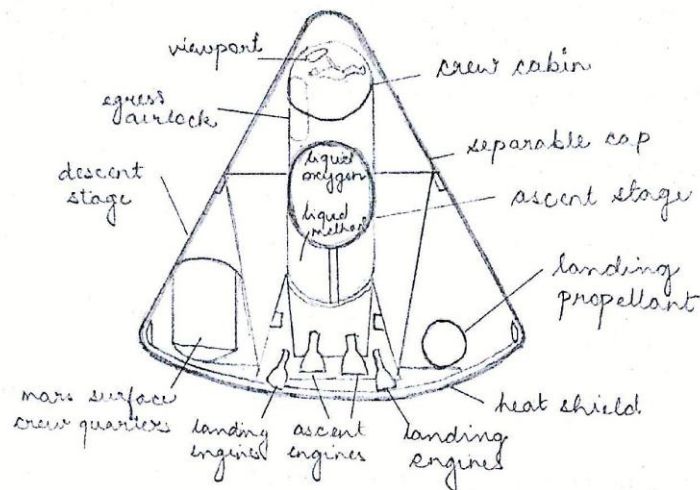


## Part II

Answer 1: The amount of time taken to travel from Earth to Mars can be anything between 150-300 days. This is because there exist many factors which are to be accounted for, like launch speed, positioning of the planets etc. The distance between Earth and Mars is 55 million km, and generally, spacecraft travel at speed exceeding 20,000 km/hour, which would lead to a travel time of 115 days. But, this is a linear approach as one cannot just launch a rocket and expect it to reach the desired destination. Mars would have shifted owing to its orbital path around the sun, thus, the rocket is to be sent to Mars' projected location, which serves as a hindrance to faster travel as it consumes more fuel and time.

Answer 2: A spacecraft designed to land on the surface of Mars shall be pyramid-shaped with soft curves, which shall land with the aid of a parachute. This shall enable smooth landing on the planet won't expel heat on the craft owing to atmospheric entry friction. The spacecraft shall be built using benzene, aluminium, graphite and silica as they react well to the atmosphere and are lightweight. Landing on

Mars is more difficult than landing on Earth, as the air thickness on Mars is high enough to burn spacecraft on entry.



DESIGN FOR MANNED AIRCRAFTS

Answer 3: The estimated cost of sending a manned mission to Mars, of around 12 people, shall be \$10 billion per person, as factors such as creation of life support from scratch, housing units etc. are to be kept in mind.

Answer 4: An aircraft can be designed to fly on Mars and it shall be boomerang shaped, which shall make it more streamlined and efficient to fly in the thick Martian atmosphere.