

Mechanics Assignment

Department of Physics, Mugberia Gangadhar Mahavidyalaya

- A man of weight w is in an elevator of weight w . The elevator accelerates vertically up at a rate a and at a certain instant has a speed V .

 - What is the apparent weight of the man?
 - The man climbs a vertical ladder within the elevator at a speed v relative to the elevator. What is the man's rate of expenditure of energy (power output)?
- An orbiting space station is observed to remain always vertically above the same point on the earth. Where on earth is the observer? Describe the orbit of the space station as completely as possible.
- A cord passing over a frictionless pulley has a 9 kg mass tied on one end and a 7 kg mass on the other end (Fig. 1.2). Determine the acceleration and the tension of the cord.

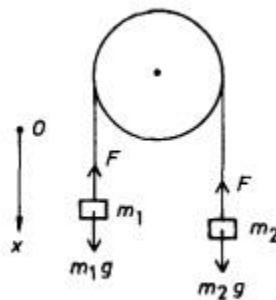


Fig. 1.2.