

IMPORTANT QUESTIONS:

- Q.1** State Newton's law of Gravitation. Give the unit of G in S.I unit. What change will be produced in G if the mass of earth is doubled?
2003 P.E, 2002 P.E, 1998, 1995, 1993, 2008 Failures.
- Q.2** Derive an expression for the mass of the earth.
2002 P.M, 2002 P.E
- Q.3** Deduce the expression for the variation of g with depth.
2006, 2004, 2003 P.E, 2002 P.M, 1999, 1998, 1996, 1995, 1993, 2005 Supp., 2008, 2008 Failures.
- Q.4** Deduce the expression for the variation of g with altitude.
2012, 2001, 1999, 1996, 1995, 1993, 2007 Failures, 2004 Supp. 2004 Failures, 2007 Supp. 2012
- Q.5** What is the cause of weightlessness in a satellite orbiting round the earth? Show that a block suspended from the ceiling of an elevator through a spring balance will become weightless if the cable holding the elevator suddenly breaks.
2005, 1999, 1998, 2006 Supp.
- Q.6** How can artificial gravity be created to overcome the problem due to weightless? If the two chambers of a spacecraft are connected by a tunnel of 30m. calculate the spin frequency to produce the artificial gravity in spacecraft.
2012, 2006, 2004, 1998, 1997, 2007 Failures, 2004 Failures, 2003 Failures, 2011 Failures, 2011, 2012 Failures
- Q.7** State Newton's Law of Gravitation. Derive an expression for the density of the earth and give its proper unit.
2006 Supp. Failures.
- Q.8** How is artificial gravity created in an orbiting space craft obtain the relevant expression for it.
2009.
- Q.9** How would the weight of a body vary as it is taken from the earth to the moon? What will be the effect on its mass?
2009.
- Q.10** In what way was Newton able to conclude that the force responsible to rotate the moon around the earth is same as the force which causes an apple to fall on the surface of earth.
2012.