XI Physics Worksheet

Time: 30 min **Chapter#8 : Gravitation-02** **Full Marks: 20**

Instructions:

1. All questions are compulsory.

2. Please give the explanation for the answer where applicable.

Q1 - Define gravitational potential.

(1 Mark)

Q2 - Define geostationary satellites.

(1 Mark)

Give one important use of such satellites.

(1 Mark)

Q3 - What will happen to the weight of the body if earth stops rotating?

(1 Mark)

Q4 - What is the value of the acceleration due to gravity at a depth below earth`s surface?

Why the weight of all bodies is zero at the earth`s centre?

(2 Marks)

Q5 - Calculate the escape velocity from the moon. It is given that mass of the moon = 7.4×10^{22} kg and radius of the moon is 1740 km.

(2 Marks)

Q6 - (a)Is the potential energy of a system of bodies positive or negative?

(b)What is the maximum value of gravitational potential energy and where?

(2 Marks)

Q7 - If a body is projected at double the speed of escape velocity, find its speed at an infinite distance from the earth? It is known that escape velocity of earth is 11.2 km/sec.

(2 Marks)

Q8 - State Kepler's laws of planetary motion.

(3 Marks)

Q9 - What is the minimum energy required to launch a satellite of mass m from the surface of the earth of mass 'M' and radius 'R' in a circular orbit at an altitude 2R?

(5 Marks)