WORKSHEET 1

Gravitation (Physics)

Q1 Which force keep the moon going around the Earth. Who provides this force? What would have happened in the absence of such a force?

Q2 A falling apple attracted towards the earth. Then why don't we see the earth moving towards the apple?

Q3 Why is the Law of Gravitation called Universal law of gravitation?

Q4 Object towards the earth is accelerated or not. Explain?

Q5 Weight of an object at a given place can be the measure of its mass. Comment.

Q6 Moon exerts lesser force of attraction on an object as compared to that of earth. Comment.

Q7The gravitational force between sun and Jupiter is approximately 4×10^{23}N. if the mass of the sun= 1.99×10^{30}kg, the mean distance of the Jupiter from the sun is 7.8×10^{11} m find the mass of Jupiter.

Q8 A particle isthrown up vertically with a velocity of 50m/s.What will be the velocity at the highest point of its journey? How high the particle would rise? What time would it take to reach the highest point?

Q9 A ball is dropped from the top of a tower 40m high. What is its velocity when it has covered 20m? What would be its velocity when it hits the ground?

Q10 an object is released from a height.

(a) Find its speed at (1) t= 1s, (2) t=2s, (3) t= 3s.

(b) Find the distance traveled at (1) t=1s, (2) t=2s (3) t=3s.

Q11 A body drops from the edge of the roof. It passes a 2m high window in 0.1s. How far is the roof above the window?

Q12. Two friends decide to calculate the height of a high rise building. They match the timings of their watch. One friend goes to the top storey and one stands on the ground. The friend at the top story drops a stone and notes the time. The friend standing on the ground notes the time when the stone reaches the ground. They meet and find that the time taken by the stone to reach the ground is 6sec. Find the height of the high rise building.

Q13 Weight of an object is 294n on the surface of the earth. What is the weight at a height of 200km from the surface of the earth? Radius of the earth= 6400km.

Q14A body is thrown upwards .What is the direction of g when the body is (1)moving upward (2)at the topmost point of its journey (3) falling down

Q15. Find the value of acceleration due to gravity at a height of (a) 6400km from the surface ofthe earth. Radius of the earth is 6400km.

Q16. What is the weight of a person whose mass is 50kg.

Q17.The mass of a man is 60kg. How much will he weigh on the (1) earth (2) moon?

Q18 A man weighs 81.5n on the moon. If the acceleration due to gravity on the moon is $1.63 m/s^2$, find the mass of the man and his weight on the earth.