



INDIAN SCHOOL DARSAIT
DEPARTMENT OF PHYSICS



Subject : PHYSICS	Topic: Gravitation	Worksheet no#07
Resource Person: Ms Sonia Antony	Date :29/10/17	
Name of the Student : _____	Class & Division : _	Roll Number: __

Q.NO	QUESTIONS	MARKS
1	What is the gravitational field inside a spherical shell?	1
2	What is the height at which the value of 'g' is the same as at a depth of R/2?	1
3	Does the escape velocity vary with mass?	1
4	Give some uses of artificial satellites.	1
5	Why does a person in satellites feel weightlessness?	1
6	What is parking orbit?	1
7	Is it possible to put a satellite into an orbit by firing it from huge canon?	1
8	Can a pendulum oscillate in an artificial satellite?	2
9	If suddenly the gravitational force of attraction between the earth and a satellite revolving around it becomes zero. what will happen to the satellite?	2
10	Give any four characteristics of gravitational force?	2
11	a)Define gravitational potential at a point. b)What is the gravitational potential at infinity?	2
12	The distance of planet Jupiter from sun is 5 times that of the earth. Find the period of revolution of Jupiter around the sun.	2
13	Two artificial satellites, one close to the surface and other away are revolving around the earth. Which has larger speed?	2
14	Derive the relation between orbital velocity and escape velocity.	3
15	The radius of the earth is reduced by 4% .the mass of the earth remains unchanged. What will be the change in the escape velocity?	3

16	Find the ratio of acceleration due to gravity of two planets if their radii are in the ratio 1:2 ,under the conditions 1. Mass remains the same. 2. Material remains same.	3
17	The acceleration due to gravity at the moon surface is 1.67m/s^2 if the radius of the moon is $1.74 \times 10^6 \text{ m}$.Calculate the mass of the moon. $G=6.67 \times 10^{-11} \text{ Nm}^2/\text{kg}^2$.	3
18	How much below the surface, does the acceleration due to gravity become 70% of its value on the surface of the earth. Radius of earth= $6.4 \times 10^6 \text{ m}$	3
19	Calculate the increase in potential energy of an object of mass' m' raised surface of the earth to a height equal to the radius' R' of the earth.	3
20	Discuss the variation of g with height and depth.	3