INDIAN SCHOOL DARSAIT
DEPARTMENT OF PHYSICS

Subject : PHYSICS	Topic: Units and measurement.	
Resource Person: Mrs Sonia Antony		Date : 30/04/17
Worksheet no#01		
Name of the Student :	Class & Division :	Roll Number:

Q.NO	QUESTIONS	MARKS
1	Do mass and weight have same dimensions?	1
2	Write the number of significant figures in the following. 1. 1.67×10^{-27} kg 2. 0.270 cm 3. 1.002	1
3	Name at least four physical quantities whose dimensions are same.	1
4	Can a quantity have units but no dimensions?	1
5	If $x=a+bt+ct^2$, where x is in metre and t is in seconds. What is the unit of c?	1
6	What is the difference between Nm, Nm ,nm?	1
7	Differentiate accuracy and precision.	1
8	Why parallax method cannot be used for measuring distances of stars more 6than 100 light years away?	1

9	Find the percentage error in Z if $Z=A^{1/3}B^4/CD^{2/3}$.	2
10	If the percentage error in the measurement of radius R of sphere is 0.2%, then calculate the percentage error in its volume.	2
11	If **A**=(12.0+0.1)cm and **B**=(8.5+0.5)cm .Find **A+B** and **A-B.**	2
12	Magnitude of a force experienced by an object moving with a speed is given by $F=Kv^2$.where K is a constant. Find the dimensions of K.	2
13	The sun's angular diameter is measured to be 1920".The distance of the sun from the earth is $1.496x10^{11}$ m .What is the diameter of the sun?	3
14	Write the use of dimensional analysis and state its limitations.	3
15	Deduce by the method of, an expression for the energy of a body executing SHM. Assuming that the energy of a body depends upon(a)The mass 'm' (b)the frequency' f'(c)the amplitude of a vibration' a'.	3
16	The density 'd' of a piece of metal of a mass **m** and volume **v** is given by the formula **d=m/v** .if **m**=375+0.01g and **v**=136+0.01cm^3.Find the percentage error in **d**.	3
17	Check the following equations are dimensionally correct or not 1. $S=ut+1/2\ at^2$ 2. $mgh=1/2\ mv$ 3. $2as=u^2-v$	3

18	Find the area of a circle of radius 3.458 cm up to correct significant figures.	3
19	Explain the measurement of distance between heavenly bodies using parallax method.	3
20	The time period of a simple pendulum is found for five different masses without changing its length. The values are 1.8, 1.82, 1.84, 1.83 and1.81 .Calculate the percentage error in the measurement.	3