INDIAN SCHOOL DARSAIT
DEPARTMENT OF PHYSICS

Subject : PHYSICS	TOPIC: Mechanical properties of fluids	Worksheet no#06
Resource Person: Ms Sonia Antony		Date : 26/11/17
Name of the Student :__	Class & Division : _____	Roll Number: __

Q.NO	QUESTIONS	MARKS
1	If you double the radius of the capillary tube what will be the drop in height in the tube?	1
2	Define angle of contact?	1
3	What is the excess pressure in a soap bubble of radius 10 mm, if surface tension is 2.5×10^{-2} N/m?	1
4	Why is mercury preferred as a barometric substance over water?	1
5	Water flows faster than honey. Why?	2
6	Why the food is cooked faster in the pressure cooker? Why it becomes difficult to cook food at mountains?	2
7	What is the effect of temperature on surface tension?	2
8	As soon as a falling parachute opens, person's acceleration decreases and soon becomes zero. Explain?	2
9	What are the limitations of Bernoulli's theorem?	2
10	A hydraulic automobile lift is designed to lift cars with maximum mass of 300 kg. The area of cross section of the piston carrying the load is 425 cm^2.what maximum pressure would the smaller piston have to bear?	2
11	A drop of liquid under no external force is always spherical in shape.	2
12	What are absolute pressure and gauge pressure?	2
13	What are qualities of ideal fluid?	2
14	Why the tip of the nib of a pen is split?	2
15	It is better to wash clothes in hot soap solution. Why?	2

16	What is the pressure on a swimmer 10 m below the surface of a lake?	2
17	Prove that the pressure at a depth h from the free surface of a liquid (P) in a container is $P=P_a+hpg$, where P_a is the atmospheric pressure.	2
18	Write the forces experienced by a sphere going down a vertical column of liquid. Giving reason for the terminal velocity, derive an expression for terminal velocity.	3
19	State Bernoulli's theorem. Water is flowing with a speed of 2 m/s in a horizontal pipe with cross-sectional area decreasing from $2x10^{-2}$ m^2 to 0.01 m^2 at pressure $4x10^4$ Pa. What will be the pressure at smaller cross-section?	3
20	A tank 5 m high is half filled with water and then filled to the top with oil of density 0.85 g/c.c. What is the pressure at the bottom of the tank due to these liquids?	3