MECHANICAL PROPERTIES OF FLUIDS

***General Instructions*:** Answer all the questions. If you are unable to answer any question, go through the page number that is given against that particular question in the text book. You can find the answer.

Test Paper-I

MAX MARKS: 30 **TIME: 90Mts**

1	What are fluids? What is the difference in the effect of shear stress on solids and fluids?	P246	2
2	Define pressure. Is pressure scalar or vector quantity? Give the dimensional formula and the SI unit of measurement of Pressure.	P247	3
3	What is the pressure exerted by the atmosphere at sea level?	P247	1
4	Define density of a liquid. What is the unit of measurement of density of a liquid? Also give the dimensional formula of density of liquid. What is the effect of variation of pressure on the density of a liquid and gas?	P247	3
5	What is the density of water at 4^oC? How is it related to a substance?	P247	2
6	The two thigh bones (femurs), each of cross-sectional area 10 cm^2 support the upper part of a human body of mass 40 kg. Estimate the average pressure sustained by the femurs.	P248	2
7	Derive an expression to find the excess pressure at depth h below the surface of a liquid.	P248	3
8	What is wind?	P248	1
9	State and prove Pascal's Law	P248	3
10	What is the pressure on a swimmer 10m below the surface of a lake?	P249	2
11	Name the instrument used for measuring the atmospheric pressure. What is the unit of measurement of atmospheric pressure? Define the unit.	P249	2
12	Mention the unit of pressure used in Medicine and physiology. Also give the unit of measurement of pressure used in meteorology. Give the conversion between torr & bar with Pascal	P250	2
13	Name the instrument used for measuring pressure differences. Also explain how you will measure pressure differences using the same.	P250	3

14	The density of the atmosphere at sea level is 1.29 kg/m^3. Assume that it does not change with altitude. Then how high would the atmosphere extend?	P250	1