

CHOITHRAM SCHOOL MANIKBAGH INDORE

CLASS XI- Session: 2017-18

Subject: Physics

Allotment Date: 29/01/18

Assignment No:

Submission Date: 06/02/18

S.No.	Questions	Level	Mark
	OBJECTIVE		
Q.1	What change in surface energy will be noticed when a drop of radius R splits up into 1000 droplets of radius r . Surface tension is T .	Knowledge	1
Q.2	A steel wire of length 1m and cross sectional area 1mm^2 is extended by 1mm.If $Y=2 \times 10^{11}\text{N/m}^2$, find the work done by the force .	Understanding	1
Q.3	Two rods of identical dimensions, with Young's moduli Y_1 and Y_2 are joined end to end.Find equivalent Young's modulus for the composite rod.	Hot	1
	SHORT ANSWER TYPE - I		
Q.4	Young's modulus of elasticity for a material is Y . If this material is subjected to a longitudinal stress P , then find the elastic energy stored per unit volume in the material.	Knowledge	2
Q.5	Two wires of the same material and length are stretched by the same force. Their masses are in the ratio 3:2, find the ratio of their elongations .	Understanding	2
Q.6	A raindrop reaching the ground with terminal velocity has momentum p . Another drop of twice the radius, also reaching the ground with terminal velocity, what will its momentum ?	Logical	2

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Q.7	Two bodies of mass 3kg and 1kg are connected by a wire of cross section 1mm^2 going over a smooth pulley as shown in fig. Find longitudinal strain in wire.		Hot	2
SHORT ANSWER TYPE - II				
Q.8	A capillary tube is immersed in water height of liquid column in rises capillary tube is h what happen to the liquid level if tube is cut at height h/2.		Understanding	3
Q.9	According to Pascal's law the increase in pressure at one point of the enclosed liquid in equilibrium of the rest is transmitted equally to all other points of the liquid and also to the wall of the container ,provided the effect of gravity is neglected.Hydraulic lift and hydraulic brakes are based on this law.Read the passage and answer the following questions : (i)How do Hyraulic brakes work ? (ii)What are the implications of this law in the day to day life ?		Value based	3
Q.10	What is Surface tension. Explain why water wet the capillary tube but mercury does not ?		MultiConceptual	3
LONG ANSWER TYPE				
Q.11	(a)A metal block is experiencing an atmospheric pressure of 10^5 N/m^2 . When the same block is placed in a vacuum chamber, Find the fractional change in its volume (thebulk modulus of metal is $1.25 \times 10^{11} \text{ N/m}^2$) (b)Find an exression for excess pressure inside a soap bubble .		Logical	5
Q.12	(a)Sate and prove Bernoulli's theorem . (b)A liquid of density 3.36g/cm^3 is poured in a U-tube, which contains Hg. Another liquid Y is poured in left arm		Hot	5

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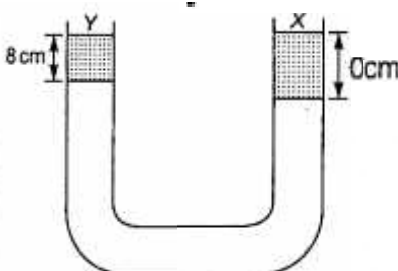
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	<p>with height 8cm. Upper levels of X and Y are same. What is the density of Y?</p> 	
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