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TARGET : NEET (UG) 2024

Course : SARANSH (Youtube Live CRASH COURSE)

PHYSICS
DPP
DAILY PRACTICE PROBLEMS
DPP NO. 1

PHYSICS: Surface Tension

DPP No. : 1

1. A mosquito with 8 legs stands on water surface and each leg makes depression of radius ' a'. If the surface tension and angle of contact are ' T ' and zero respectively , then the weight of mosquito is :

(1) 8 T . a (2) 16 π T a (3) $\frac{T\,a}{8}$ (4) $\frac{T\,a}{16\,\pi}$

2. A spherical drop of water has 1mm radius. If the surface tension of the water is 50×10^{-3} N/m, then the difference of pressure between inside and outside the spherical drop is :

(1) 25 N/m^2 (2) 10000 N/m^2 (3) 100 N/m^2 (4) 50 N/m^2

3. The value of g at a place decreases by 2%.The barometric height of mercury

(1) Increases by 2% (2) Decreases by 2%

(3) Remains unchanged (4) Sometimes increases and sometimes decreases

4. Air is blown through a hole a closed pope containing liquid. Then the pressure will

(1) Increase on sides (2) Increase downwards

(3) Increase in all direction (4) Never increases

5. Radius of an air bubble at the bottom of the lake is r and it becomes 2r when the air bubbles rises to the top surface of the lake. If P cm water be the atmospheric pressure, then the depth of the lake is

(1) 2p (2) 8p (3) 4p (4) 7p

6. Air is steaming past a horizontal air plane wing such that its speed in 120 m/s over the upper surface and 90 m/s at the lower surface. If the density of air is 1.3 kg per metre^3 and the wing is 10 m long and has an average width of 2 m, then the difference of the pressure on the two sides of the wing of

(1) 4095.0 Pascal (2) 409.50 Pascal (3) 40.950 Pascal (4) 4.0950 Pascal

7. A sphere is dropped gently into a medium of infinite extent. As the sphere falls, the force acting downwards on it

(1) remains constant throughout

(2) increases for sometime and then becomes constant

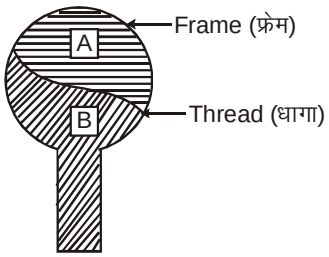
(3) decreases for sometime and then becomes zero

(4) increases for sometime and then decreases.

8. Two hail stones with radii in the ratio of 1 : 2 fall from a great height through the atmosphere. Then the ratio of their momenta after they have attained terminal velocity is

(1) 1 : 1 (2) 1 : 4 (3) 1 : 16 (4) 1 : 32

9. A thread is tied slightly loose to a wire frame as shown in the figure. And the frame is dipped into a soap solution and taken out. The frame is completely covered with the film. When the portion A is punctured with a pin, the thread :



(1) becomes convex towards A

(2) becomes concave towards A

(3) remains in the initial position

(4) either (1) or (2) depending on size of A w.r.t. B

10. When a load of 5 kg is hung on a wire then extension of 3 meter takes place, then work done will be :

(1) 75 J (2) 60 J (3) 50 J (4) 100 J