PHYSICS

BOOKS - MODERN PUBLICATION

FLOATING BODIES

Example

1. A cubical block of edge 2 cm and of mass 5 kg is kept on a able top. Calculate. The thrust of the block on the table top.

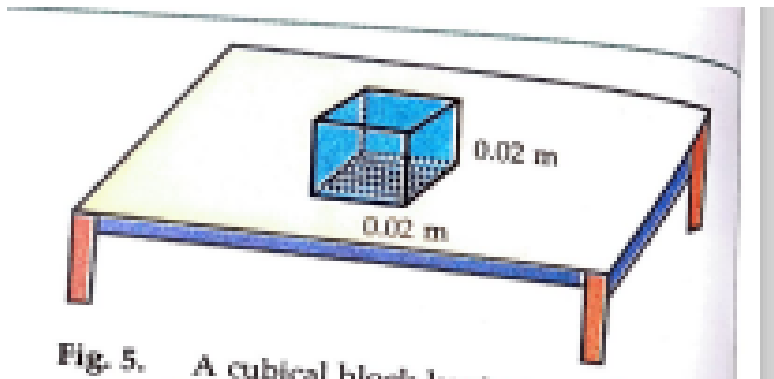**2.** A cubical block of edge 2 cm and of mass 5 kg is kept on a table top. Calculate. The pressure of the block on the table top.

3. A drawing pin is peierced in a wooden table with a force of 5 N. Calculate the pressure exerted by the pin on the tabe if the area of

the point is 0.02 mm^2?

Fig. 5. A cubical block 1...

4. A sphere of mass 5 kg and volume $2 \times 10^{-4} m^3$ is completely immersed in water. Find the buoyant force exerted by water on the sphere. Density of water $= 1000 kg/m^3$

5. A slid object of mass 5 kg floats in a liquid. Calculate the buoyant force acting on the body.

6. A body of mass 5.0 kg and density $5000\dfrac{kg}{m^3}$ is completely dipped in a liquid of density $1000\dfrac{kg}{m^3}$. Find the force of buoyancy on it.

7. A solid body of volume $60cm^3$ is immersed completely in water. Calculate the buoyant force.

8. The volume of 100 g of a substance is $80cm^3$. If the density of water is $1gcm^{-3}$, will the substance float or sink?

9. The volume of a 1000 g packed tin is $500cm^3$

What is the density of packed tin?

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10. The volume of a 1000 g packed tin is $500cm^3$ Will the packet float or sink in water(density $1g/cm^3$)?

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11. The volume of a 1000 g packed tin is $500cm^3$ What will be the mass of water displaced by this tin?

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12. Why is it difficult to hold a school bag having a strap made of thin and strong string ?

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13. What do you mean by buoyancy ?

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14. Why does an object float or sink when placed on the surface of water ?

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15. You find your mass to be 42 kg on a weighing machine. Is your mass more or less

than 42 kg ?

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16. In what direction does the buoyant force on an object immersed in a liquid act.

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17. Why does an object float or sink when placed on the surface of water ?

▶ **Watch Video Solution**

18. The volume of 50 g of a substance is $20cm^3$. If the density of water is $1gcm^{-3}$, will the substance float or sink ?

19. A cube of side 5 cm is immersed in water and then in saturated salt solution. In which case will it experience a greater buoyant force. If each side of the cube is reduced to 4 cm and

then immersed in water, what will be the effect on the buoyant force experienced by the cube as compared to the first case for water. Given reason for each case.

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20. A ball weghing 4 kg of density $4000 kg/m^3$ is completely immersed in water of density $10^3 kg/m^3$ find the force of buoyancy on it. $(given\ g = 10m/s^2)$

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21. Why do vehicles designed to carry heavy loads have multi-wheel axles?

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22. The area of sharpened edge of knives, axes and tips of pins, nails are kept less why?

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23. When we stand on loose sand, our feet go deep in the sand. But when we lie down on the sand our body does not go that deep into the sand. Why?

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24. If relative density of aluminium is 27 and density of water is $1000 kgm^{-3}$. What is the density of aluminium in SI unit?

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25. What happens when: Buoyant force exerted by the fluid is less than the weight of the body?

26. What happens when: Buoyant force exerted by the fluid is less than the weight of the body?

27. While drawing water from a well, a bucket of water appears to be heavier as it comes out of water. Explain.

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28. The wheels of an army tank rest on a steel belt.

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29. Lead has greater density than iron and both are denser than water. Is the buoyant force on a lead object greater than, less than or equal to the buoyant force on an iron object of the same volume?Explain your answer giving reasons.

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30. Why is it easier to swim in sea water than in rise water?

31. A dining hall has dimensiosn $50m \times 15m \times 3.5m$. Calculate the mass of air in the hall.

32. A cork floats in water, while the iron nail sinks . Give reason.

33. Loaded test-tube placed in pure milk sinks to a certain mark (M). Now some water is mixed with the milk. Will the test tube sink more or less? Explain.

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34. List two factors on which buoyant force depends.

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35. Find pressure, when a thrust of 20N is applied on a surface area of $10cm^2$

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36. Explain why a truck or a motor bus has much wider tyres?

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37. Why do we fell lighter when we swim?

38. If two weights of unequal volumes are balanced in air, what will happen if they are completely dipped in water?

39. A dining hall has dimensiosn $50m \times 15m \times 3.5m$. Calculate the mass of air in the hall.

40. During the summer vacations, Naveen visited his native village. He observed thatl for washing clothes, villagers used the water from the well. Out of curiosity he drew water from the well and observed that the bucket of water appeared to be heavier as it came out of the water. Why does the bucket appear to be heavier in air?

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41. During the summer vacations, Naveen visited his native village. He observed thatl for washing clothes, villagers used the water from the well. Out of curiosity he drew water from the well and observed that the bucket of water appeared to be heavier as it came out of the water. Which values are reflected in Naveen's behaviour?

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42. Does density of a substance vary with temperature?

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43. Why does a ballon filled with hydrogen or helium gas rise up?

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44. A small iron needle sinks in water but a ship made of iron floats in water. Why?

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45. How does an ice-berg float on water?

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46. Archimedes was assigned a task by a king to check whether his crown was made up of

pure gold or an allot of gold . Archimedes constantly thought about this problem One day when he entered his bath tub, an clicked in his mind which was the solution to the task assigned. He was so ecited with his idea that he on street without putting on his clothes screaming 'Eureka', Eureka' i,e. I found it

What is buoyancy?

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47. Archimedes was assigned a task by a king to check whether his crown was made up of pure gold or an allot of gold . Archimedes constantly thought about this problem One day when he entered his bath tub, an clicked in his mind which was the solution to the task assigned. He was so ecited with his idea that he on street without putting on his clothes screaming 'Eureka', Eureka' i,e. I found it

What is Archimedes principle?

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Waht values were shown by Archimedes?

49. Mamta went to purchase a school bag with her father with a budget of Rs 1000/-. She almost finalised a stylish bag worth Rs 1000/- with a thin strap. At the same time she saw antoher bag with wider strap worht Rs 500/- but their looks were average. Shw recalled the topic learnt in physics on pressure. She understood that the bag with wider strap was more comfortbale. So, she purchase two bags of wider strap one ffor herself and one for her poor freind who was much in need of a school

bag.

What is pressure?

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Why are wider strap bag more comfortable?

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with a thin strap. At the same time she saw antoher bag with wider strap worht Rs 500/- but their looks were average. Shw recalled the topic learnt in physics on pressure. She understood that the bag with wider strap was more comfortbale. So, she purchase two bags of wider strap one ffor herself and one for her poor freind who was much in need of a school bag.

What are the values shown by Mamta?

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52. A pond was located near a tube-tyre repariing shop. A group of class IX students persent near the pond for a picnic noticed one of their Classmate Rohit falling in the pond. Rhoit started screaming for help. The topper of the class Rajesh immeditely responded. He rushed to the tube-tyre repairing shop and rbought an inflated tube and threw it towards Rohit. Rohit got hold of that tube and was saved.

What is the principle of physics that Rajesh had in his mind ? State the principle.

53. A pond was located near a tube-tyre repariing shop. A group of class IX students persent near the pond for a picnic noticed one of their Classmate Rohit falling in the pond. Rhoit started screaming for help. The topper of the class Rajesh immeditely responded. He rushed to the tube-tyre repairing shop and rbought an inflated tube and threw it towards Rohit. Rohit got hold of that tube and was

saved.

State the qualities of Rajesh in this act.

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Exercise

1. What is the force acting perpendicular to the surface of an object called?

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2. What is the S.I unit of thrust?

3. $\dfrac{Thrust}{Area} = _____$

4. The S.I unit of presure is pascal (Pa) or Nm^{-2}. (T or F)

5. Is pascal big unit or a small unit for practical usage?

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6. Thrust is a _____ quantity.(scalar/vector)

▶ **Watch Video Solution**

7. Why is the needle end of an injection sharp?

8. Pressure is a vector quantity. (T or F)

9. Give two applications where is beneficial high pressure

10. Give two applications where is beneficial low pressure

11. A force of 200 N acts on an area of $1cm^2$ uniformly . Find the pressure in Pascal.

12. A uniform cube of edge length 5 cm and mass 5 kg is kept on a table top. Find the pressure due to the cube on the table top on the portion where the cube touches the table top.

13. A girl of weight 40 kgf is wearing sandal with head of area $2cm^2$. Find the pressure exerted by the girl the ground.

14. Calculate the greatest and the least pressure exerted by a metal block of size $20cm \times 8cm \times 5cm$ and having a mass of 50kg.

15. The atmosphere pressure at a place isw 10^5 Pa. What thrust does it exert on a table top of area $1m^2$?

16. A block of wood is kept on the table top. The mass of wooden block is 5 kg and its dimensions are $40cm \times 20cm \times 10cm$. Find the pressure exerted by the wooden block on the table top if it is made to lie on the table top with its sides of dimensions : $20cm \times 10cm$.

17. A block of wood is kept on the table top. The mass of wooden block is 5 kg and its dimensions are $40cm \times 20cm \times 10cm$. Find the pressure exerted by the wooden block on the table top if it is made to lie on the table top with its sides of dimensions : $40cm \times 20cm$.

18. In what direction does the buoyant force on an object immersed in a liquid act.

19. When a partially floating body is pressed down a little, its weight, will increase. (T or F)

20. When a partially floating body is pressed down a little, its its upthrust will increase. (T or F)

21. Upthrust depends on _____ of the body immersed, _____ of fluid and _____.

22. A mug filled with water appears lighter inside water as compared to when mug is held in air why?

23. A body floats in still water. Which of the followint option(s) are correct?

A. The upthrust balances weight of the body

B. The body is in a state of vertical equilibrium.

C. Density of the body is less than density of water

D. Spring balance shows the weight of the body zero

Answer:

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24. The pressure of a liquid at the same horizontal plane at all point is _____.
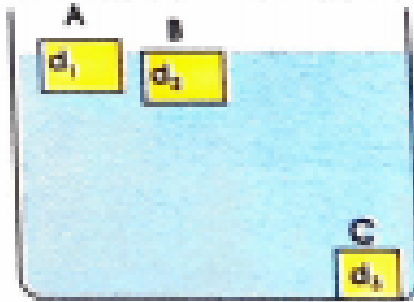
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25. Upthrust is equal to the magnitude of the weight of liquid dispalced (T or F)

▶

26. The figure shows that three bodies A,B and C. The density of the three bodies are related as $d_3 > d_2 > d_1$.

27. Oil floats on water. This shows that density of oil is greater than the density of water. (T or F)

28. The density of ironis 7.8 g/c.c and that of mercury is 13.6 g/c.c. Therefore, an iron block will float on mercury.

29. State Archimedes principle? Give two application of this principle?

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30. What are laws of floatation?

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31. A body of volume $3cm^3$ is completey immersed in water. What is the buoyant force

acting on the body.

32. A solid object mass 100g and volume $200cm^3$ is put in water. Will the object float.

33. An iron block of density 7.8 g/c.c and volume $50cm^3$ is immersed completely in

water. Find the actual weight of iron block of iron block in air.

34. An iron block of density 7.8 g/c.c and volume $50cm^3$ is immersed completely in water. Find buoyant force acting iron block

35. An iron block of density 7.8 g/c.c and volume $50cm^3$ is immersed completely in water. Find loss of weight of iron block in water.

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36. A solid object of volume $250cm^3$ is immersed completely in water. Calculate the buoyant form.

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37. A solid body of mass 10kg and density 6000 kg/m^3 is immersed completely in a liquid of density $1000 kg/m^3$. Find the buoyant force acting on it.

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38. A body of 10 kg is floating on a liquid. Find the buoyant force acting on it.

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39. A solid object of mass 200 g and volume 250 cm is put in water. Will it float or sink?

▶ **Watch Video Solution**

40. What does this statement mean: Relative density of gold is 19.3?

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41. A body weighs W_1 in air and W_2 in water. What is its relative density?

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42. Does R.D. and sp.gr represente the same physical quantity?

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43. Which liquid out of kerosene, pine oil and CCl_4 has maximum relative density?

44. Relative density of silver is 10.8. The density of water is $1000 kgm^{-3}$. What is the density of silver in S.I. units?

45. An oil of relative density 1.1 and volume 2 litre is poured on water What is the mass of oil?

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46. An oil of relative density 1.1 and volume 2 litre is poured on water. Suppose the oil does not mix with water, which will form the lower layer?

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47. For a floating body (B=Buoyantforce, W = Weight of the floating body)

    A. B=W

    B. $B > W$

    C. $B < W$

    D. Information is incomplete

Answer:

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48. Upthrust = Vdg. Here d is the

    A. density of fluid

    B. density of body

    C. we have a choice to take any density

    D. density of water

Answer:

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49. For sinking of a body (d_b=density of body

d_1=density of fluid)

A. $d_b = d_F$

B. $d_b > d_f$

C. $d_b < d_f$

D. none

Answer:

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50. A girl is carrying a bucket of water in one hand and a wooden block in the other hand. After transferring the wooden block to the bucket the girl will carry

   A. more load than before

   B. less load than before

   C. same load as before

   D. none

Answer:

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51. When a body is partially dipped in a liquid, its loss in weight is equal to

A. volume of liquid displaced

B. density of liquid displaced

C. density of body-density of liquid

D. weight of liquid displaced

Answer:

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52. A cube of ice floats in a beaker of water. When the ice melts, the level of water in beaker

    A. the level of water in beaker will increase

    B. the level of water in beaekr will decrease

    C. the level of water in beaker will remain

       same

    D. none

Answer:

53. Relative density of a substance =(Density of

the substance)/(Density of water at_____)

    A. Room temperature

    B. $4°C$

    C. $5°C$

    D. $10°C$

Answer:

54. Relatve density of a substance = density of that substance in

    A. S.I unis

    B. C.G.S units

    C. these are never equal

    D. both (a) and (b)

Answer:

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55. What is the SI unit of pressure ?

A. N

B. N/m^2

C. Nm^2

D. N/m

Answer:

56. As the depth from the free surface of liquid increases, the pressure exerted by the liquid

    A. Decreases

    B. increases

    C. Remains same

    D. No relationship

Answer:

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57. When a body is floating completely immersed in still water and non external force is exerted

A. B=W

B. BgtW

C. BltW

D. Can't say

Answer:

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58. A helium filled ballon moves upwards when released. This is because

A. the weight is acting upwards

B. the buoyant force and weight acts upwards

C. the weight acts downwards, buoyat force acts upwards and these two are equal

D. the weight acts donwards, buoyant force acts upwards and buoyant force is

greater than weight.

Answer:

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59. Buoyant force depends on

    A. Volume of body immersed in fluid

    B. density of fluid

    C. acceleration due to gravity

    D. density of fluid

Answer:

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60. Lactometer is based on

A. Bernoulli's theorem

B. Archimedes principle

C. First lawof thermodynamics

D. None

Answer:

61. Density of water is

A. $1g/cm^3$

B. $1000g/cm^3$

C. $1kg/cm^3$

D. $1g/m^3$

Answer:

62. Relative density of water is

A. $1g/cm^3$

B. 1

C. $10g/cm^3$

D. 10

Answer:

63. Sleepers are laid below rails to

    A. reduce presure on earth

    B. to increase pressure on earth

    C. to increase force on earth

    D. to decrease force on earth

Answer:

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64. Fluids are

    A. gases

    B. liquids

    C. gases and liquids

    D. solids, liquids and gases

Answer:

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65. Density of ice is $0.9g/cm^3$ and that of water is $1g/cm^3$. Then

    A. ice will sink in water

    B. ice will get completely immersed in water and float

    C. ice will get 90% immersed in water and flox

    D. Can't say

Answer:

66. The unit of specific gravity is

    A. g/c.c

    B. kg/m^3

    C. kg/cm^3

    D. unitless

Answer:

67. Pascal is unit of

    A. pressure

    B. force

    C. linear momentum

    D. energy

Answer:

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68. The buoyant force on a body acts in

    A. vertically donward direction

    B. vertically upward direction

    C. horizontal direction

    D. all directions

Answer:

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69. A body floats in a liquids if the buuoyat force is

A. zero

B. greater than its weight

C. less than its weight

D. equal to its weight

Answer:

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70. A rectangular box is kept over a table with differences faces touching the table. In different cases, the bald exerts

    A. same thrust and same pressure

    B. same thrust and different pressure

    C. different thrust and same pressure

    D. different thrust and different pressure

Answer:

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71. Pressure at a point inside a liquid does not depend on

    A. the nature of the liquid

    B. the shape of the containing vessel

    C. depth of point below the surface of liquid

    D. the acceleration due to gravity at that point

Answer:

72. Two stretchced membranes of area $1cm^2$ and $2cm^2$ are placed in a liquid at the same depth. The ratio of the pressure on them is

    A. $1:2$

    B. $1:4$

    C. $4:1$

    D. $1:1$

Answer:

73. A device used to check the purity of milk is

called

    A. Lactometer

    B. Hydrometer

    C. Speedometer

    D. Barometer

Answer:

74. When a body sinks in a liquid the weight of the body is

A. More than the volue of body

B. Less than the volume of body

C. Less than the buoyant force

D. More than the buoyant force

Answer:

75. if d_a and d_b are densities of the material of body and the liquid respectively, the body can float only when

A. $d_a = d_b$

B. $d_A < d_b$

C. $d_a > d_b$

D. $d_A = 2d_b$

Answer:

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76. A jet plane flies in air because

    A. Streamlined flow of air causing lift

    B. Upward thrust of air balance its weight

    C. No gravity acts on plane

    D. None of these

Answer:

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77. Mass of an object in air is 40 kg. Mass of this object in water will be

A. More than 40 kg

B. Less than 40 kg

C. 40 kg

D. Zero

Answer:

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78. The weight of a body felt in tap water and salted water are W_A and W_B respectively, then:

A. $W_A = W_B$

B. $W_A > W_B$

C. $W_A < W_B$

D. $W_B = 2W_A$

Answer:

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79. Upthrust depends upon

    A. Volume

    B. density

    C. g'

    D. All of these

Answer:

80. A cube of ice floats in a beaker of water. When the ice melts, the level of water in beaker

A. Falls

B. Rises

C. Remains unchanged

D. None of these

Answer:

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81. Which of the following has the highest density?

A. Alcohol

B. Glycerine

C. Water

D. Sea water

Answer:

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82. The density of tap water is less than that of sea water. If an object is immersed completely in both one by one, its loss in weight will be

A. More in sea water

B. Less in sea water

C. Equal in two cases

D. Zero in sea water but nt so in tap water

Answer:

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83. When a body is fully or partly immersed in a liquid, it undergoes an apparent loss in its weight due to

A. decreases in its volume

B. decrease in the density of the body

C. upward thrust exerted by the liquid

D. decrease in its mass

Answer:

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84. If the density of the object placed in a liquid equal to the density of the liquid, the object will

    A. float wholly immersed

    B. sink

    C. float half immersed

    D. float completely above the liquid

Answer:

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85. The pressure exerted by a solid decreases with the increase of

A. force

B. area

C. momentum

D. velocity

Answer:

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86. The loss in weight of a solid more in salt solution than water because

    A. density of water and salt solution is the same

    B. density of water is less than salt solution

    C. density of water is more than salt solution

    D. desnity can't be compared

Answer:

87. For a body floating on water appraent weight is equal to

   A. actual weight of the body

   B. zero

   C. weight of the body minus the weight of the liquid

   D. none of the above

Answer:

88. A cube of ice floats in a beaker of water. When the ice melts, the level of water in beaker

A. the level of water in beaker will increase

B. the level of water in beaekr will decrease

C. the level of water in beaker will remain same

D. none

Answer:

89. A student lowers a body in a liquid filled in a contianer, he finds that there is a maximum apparent loss in weight of the body when

    A. it just touches the surface of the liquid

    B. it I partially immersed in the liquid

    C. it is completely immersed in the liquid

D. it is partially immersed and also touches the sides of the container.

Answer:

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90. While comparing the pressure exerted by the three different faces of a metal cuboid of dimensions $10 \times 20 \times 30cm$, which observation is correct?

A. Pressure exerted by all faces is same

B. Pressure exerted by the face 10×20 is maximm

C. Pressure exerted by the face 10×30 is maximm

D. Pressure exerted by the face 30×20 is maximm

Answer:

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91. If a body is compressed to half its previous volume, its density

    A. remain the same

    B. becomes four time

    C. becomes half

    D. become double

Answer:

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92. To Observe And Compare the pressure exerted by the 3 faces if a cuboid on sand, the following apparatus is available in the laboratory:

    A. iron cuboid

    B. Aluminimum cuboid of same dimensiosn

    C. Coarse sand in a tray

    D. very fine sand in a tray

Answer:

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93. A buoyant force of 200 gwt acts on a body dipped completely in water. If the apparent weight of body is 100 gwt, then its actual weight will be

A. 100gwt

B. 300gwt

C. 200gwt

D. 400gwt

Answer:

94. Define pressure and what are its units?

95. What is the SI unit of pressure?

96. What is thrust?

97. What is the S.I unit of thrust?

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98. What is a fluid?

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99. What is a buoyant force?

100. State Archimedes' principle.

101. What is relative density of a substance?

102. What is the unit of relative density ? Why ?

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103. Define density. What is SI unit of density?

> ▶ Watch Video Solution

104. When we stand on loose sand, our feet go deep in the sand. But when we lie down on the

sand our body does not go that deep into the sand. Why?

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105. State Archimedes' principle.

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106. The mass of an empty 40 litre petrol tank of a velocity is 8 Kg. What will be its mass

when filled complete with a fluid of density

$700 kgm^{-3}$

107. A sphere of mass 5 kg and volume

$2 \times 10^{-4} m^3$ is completely immersed in water.

Find the buoyant force exerted by water on

the sphere. Density of water $= 1000 kg/m^3$

108. Discuss the application of the concept of pressure.

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109. A body is weighed by a spring balance to be 1.000 Kg at the north pole.How much will it weigh at the equator? Account for the earth's rotation only.

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110. State Archimedes principle? Give two application of this principle?

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111. What are laws of floatation?

> ▶ **Watch Video Solution**

112. Why is camel able to walk quite fast and easily come and while we cannot?

113. What are laws of floatation?

 ▶ **Watch Video Solution**

114. What are laws of floatation?

 ▶ **Watch Video Solution**

115. Write a short note on the physical quantity Relative density.

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116. State Archimedes' principle.

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117. An object is put one by one in three liquids having different densities. The object floats

with $\dfrac{1}{9}$, $\dfrac{2}{12}$ and $\dfrac{3}{7}$ parts of their volumes outside the liquid surface in liquids of densities d_1, d_2 and d_3, respectively. Which of the following statement is correct ?

A. $d_1 > d_2 > d_3$

B. $d_! > d_2 < d_3$

C. $d_1 < d_2 > d_3$

D. $d_1 < d_2 < d_3$

Answer:

118. An object weighs 10 N in air. When immessed fully in liquid, it weighs only 8 N. The weight of the liquid displaced by the object will be:

A. 2N

B. 8N

C. 10N

D. 12N

Answer:

119. A girl stands on a box having 60 cm length, 40 cm breadth and 20 cm thickness in three ways. In which of the following cases, presure exerted by the brick will be

A. maximum when length and breadth form the base

B. maximum when breadth and thickness from the base

C. maximum when thickness and length

form the base

D. the same in all the above three cases

Answer:

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120. A body floats $\dfrac{1}{3}$ of its volume outside water and $\dfrac{3}{4}$ of its volue outside another liquid. The density of the other liquid is

A. $\dfrac{9}{4} \times 10^3 kg/m^3$

B. $\dfrac{4}{9} \times 10^3 kg/m^3$

C. $\dfrac{8}{3} \times 10^3 kg/m^3$

D. $\dfrac{3}{4} \times 10^3 kg/^3$

Answer:

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121. A hydrometer floats with half of its stem outside water surface. It s now placed in alcohol(R.D.=0.8). The hydrometer floats

A. with stem at the saem position

B. with more stem inside the alcohol

C. with more stem oustide alcohol

D. in tilted position

Answer:

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122. Ice is floating on water in a beaker when ice completely melts then level of water in beaker

A. Increases

B. Decrease

C. Remains the same

D. First increases then decreases

Answer:

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123. The volume of a substance is $20cm^3$. The mass of the substance if its relative density is 2.5 will be

A. 5 g

B. 50 g

C. 500 g

D. 5 kg

Answer:

124. Why is it easier to swim in sea water than in rise water?

A. Atmospheric pressure is highest at the sea level

B. Sea water has less density than ordinary water

C. density of sea water is higher than ordinary water

D. none

Answer:

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125. A body floats in liquid when

    A. weightgt Buoyant force

    B. Weight lt Buoyant force

    C. weight = Buoyant force

    D. none

Answer:

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126. Which will be easier to lift?

    A. 10 kg of water

    B. 10 kg of iron

    C. 10 kg of loosely packed feather

    D. There will be no difference

Answer:

127. A piece of cork of mass 4 kg floats in water with 40% of its volume under water. What is the specific gravity of the cork?

A. 0.8

B. 0.6

C. 0.4

D. 0.2

Answer:

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128. A body of weight 70 N is floating in a liquid. The buoyont force acting on the body is

A. 60 N

B. 70N

C. 80N

D. 90N

Answer:

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129. A body weighs 100N in air. It measures 80N when partially immersed in a liuqid. The buoyant force acting on the body is

A. 20N

B. 180N

C. 160N

D. 200N

Answer:

130. A 2 cm cubical lock of mass 2 kg is lying on the ground What is the pressure exerted by the block on the ground?

A. $2.4 \times 10^4 Nm^{-2}$

B. $9.8 \times 10^4 Nm^2$

C. $4.9 \times 10^4 Nm^{-2}$

D. $19.6 \times 10^4 Nm^{-2}$

Answer:

131. Which of the following units is used to measure thrust?

A. Dyne

B. Pascal

C. Newton per metre square

D. Dyne per centimetre

Answer:

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132. A block of wood floats in a liquid of density 0.8 gcm^{-3} with one fourth of its volume submerged. For the density of wood

A. $3.2cm^3$

B. $200kgm^{-3}$

C. $0.2kgm^{-3}$

D. $1.6gcm^{-3}$

Answer:

133. If equal masses of water and a liquid of relax density 2 are mixed together, find the density of gcm^{-3} of the mixture

A. $\dfrac{2}{3}$

B. $\dfrac{4}{3}$

C. $\dfrac{3}{2}$

D. 3

Answer:

134. What is centre of buoyancy?

A. The centre of gravity of the displaced liquid

B. Mass per unit volume

C. The point where total weight of the body acts

D. The difference in weights of body in air and liquids

Answer:

135. The S.I unit of relative density is

A. kgm^{-3}

B. g/cm^3

C. kg/cm^3

D. none of these

Answer:

136. State the relationship between thrust and pressure.

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137. List two factors on which buoyant force depends.

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138. Relative density of gold is 19.3. The density of water is $1000 kgm^{-3}$. What is the density of gold in SI units.

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139. Why does an iron nail sink in water whereas wooden cork floats?

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140. An army tank weighing more than a hundred tonne move conveniently on an earthen road. How ?

141. Which will exert more pressure, 100 kg mass on $10m^2$ or 50 kg mass $4m^2$? Give reason.

142. If two weights of unequal volumes are balanced in air, what will happen if they are completely dipped in water?

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143. An iron cube of side 10 cm is kept on a horizontal table. If density of iron is $8000 kgm^{-3}$, find the pressure on the portion of the table, where the cube is ekpt $\left(g = 10 ms^{-2}\right)$

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144. When an aobject is immersed ina fluid, two forces act on the object in vertically opposite directions and name there. Also write the factors on wich the magnitude of these forces depends.

145. The density of turpentine at 293 K is given as $870 kgm^{-3}$. Identify and write the name of

the substances that sink in turpentine at the same temperature.

S. No.	Substance	Density (kgm^{-3})
1	Wood	690
2	Ice	920
3	Rubber	970
4	Parrafin Wax	900
5	Cork	240
6	Bone	1850

submarines. Explain.

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146. Archimedes principle has wide application in making sips and submarines. Explain

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147. A doctor applies a force of 50 n to the piston of syringe of area $1.5m^2$. The increase in pressure of the fluid in the syringe is

A. 33.3 Pa

B. 50 Pa

C. 35.5 Pa

D. 30 Pa

Answer:

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148. Is the value of 'g' at a given place same for different bodies or it is variable ?

A. To place the cuboid slowly on the sand and note the reading

B. To calcualte the least count of spring balance

C. To measure the zero error in the spring balance

D. To measure the weight of the given cuboid

Answer:

149. A metal cuboid of mass 'M' kg rests on a table with surface are of $40cm^2$ in contact with the table. The pressure exerted by the cuboid on the table surface is 10000 Pa. Value of m is (given that g = $10ms^{-2}$)

A. 20 kg

B. 5 kg

C. 4kg

D. 2.5 kg

Answer:

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