



PHYSICS

BOOKS - PEARSON IIT JEE FOUNDATION

MEASUREMENTS

Very Short Answer Type Question Fill In The Blanks

1. 10 g of water occupies____ cm^3 of volume

Watch Video Solution

2. The mass of a body does not change with change in

Watch Video Solution
3. The CGS unit of pressuure
Watch Video Solution
4. As the temperature of the gas decreases, its density
Watch Video Solution

5. The smallest length that can be accurately measured by

using a metre scale is_____ cm.

Watch Video Solution
6. Density of water isthan the density of cooking oil.
Watch Video Solution
7. Weight of a body varies according to the variation in
the
Watch Video Solution



11. 10 g of water occupies cm^3 of volume
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12. The mass of a body does not change with change in
·
Watch Video Solution
13. The CGS unit of pressuure
Watch Video Solution

14.	As	the	temperature	of	the	gas	decreases,	its
den	sity_	•						

Vatch Video Solution
15. The smallest length that can be accurately measured
by using a metre scale is cm.
Watch Video Solution

16. Density of water is_____than the density of cooking oil.

View Text Solution

17. Weight of a body varies according to the variation in

the____.

Watch Video Solution
18. The CGS unit of volume is
Watch Video Solution
19. The density of a body is 500 kg m^{-3} . Then its
equivalent value in CGS system is
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20. The area of a square plot is 100 m^2 . Then the value of

its perimeter is___m.

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Very Short Answer Type Question Mcqs

1. The smallest measurement that can be measure by

using a wall clock is _____.

A.1 second

B.1 minute

C.1hour

D. 2 second



D. both a and b

Answer: D



3. If the density of a substance is $2 \times 10^3 kg$ m^{-3} , then the mass of 5 m^3 of this substances is

A. 1000 kg

B. 10000 g

C. 10000 kg

D. both a and b

Answer: C



4. The mass of a body of weight 200 gf is ____g.

A. 200

B. 300

C. 400

D. 20

Answer: A

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5. A pile of identical one rupee coins are placed over a metre scale as shown in the figure. The thickness of a one



A. 1.56 mm

B. 1.56 cm

C. 1.67 mm

D. 1.67 cm

Answer: A



6. 5 litre of a liquid weighs 5kgf. The density of liquid is____.

A. 1 kg m^{-3}

B.1 g cm^{-3}

- C. 100 kg m⁻³
- D. $100g m^{-3}$

Answer: B



7.1 kilogram is equal to ____.

A. 1000 gram

B. 100 gram

C. 1000 milligram

D. 100 milligram

Answer: A

View Text Solution

8. Mass is measured by using a_____.

A. Spring balance

B. physical balance

C. measuring jar

D. metre scale

Answer: B

9. 1 kg
$$m^{-3}$$
=____

- A. 1000 g $m^{\,-3}$
- B. $\frac{1}{1000}g$ cm⁻³
- C. 10000 kg cm^{-3}

D. 1 g
$$cm^{-3}$$

Answer: B



10. The distance between two cities A ad B in a map is 7.5 cm. the scale taken for drawing this map is 1cm=1,50,000m. The actual distance between A and B is km.

A. 1125000

B. 20000

C. 200

D. 1125

Answer: D



11. 1 m (3) = _____litre.

A. 1

B. 10

C. 100

D. 1000

Answer: D



12. The whole length of a metre scale is divided into 500 equal parts then the smallest measurement that can be measured by using the scale is _____.

A. 0.5 m

B. 0.005 m

C. 50 mm

D. 2 mm

Answer: D

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13. Which among the following is (are) the units(s) of pressure?

A. N m^{-2}

B. gwt cm^{-2}

C. kgwt m^{-2}

D. All of the above

Answer: D

O Watch Video Solution

14. Which of the following statements is /are correct?

A. The weight of a body can be zero.

B. The weight of a body can be greater than zero.

C. The mass of a body can be zero.

D. both a and b

Answer: C



15. Volume of an irregular shaped solid can be measured

by using a____

A. density bottle

B. spring balance

C. measuring cylinder

D. physical balance

Answer: C



16. Which of the following statements is incorrect?

A. As the temperature of gas increases, its volume

increases.

B. As the temperature of a gas increases, its density

decreases.

C. As the temperatrue of a gas increases, its density

increases.

D. both a and b

Answer: C

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17. An atlas of a country is shown in the figure, the distance between cities A and B is_____



A. 35 km

B. 3500 km

C. 350 km

D. both a and b

Answer: C



18. Arrange the following steps in a sequence of find the vlume oof an irregular shaped solid body.

(A). The irregular shaped solid is tied with the thread and is lowered into the measuring cylinder.

(B). A measuring cylinder with graduations in millilitre or cubic centimetrer is taken.

(C). The level of water in the measuring cylinder rises after immersion of the solid. (say V_2)

(D) First, it is filled with water to a certain level of volume. (say V_1)

(E). The volume of the stone is equal to the difference

between the volume of the water before and after the immersion of the stone. (V_2-V_1) .

A. ABCDE

B. BCADE

C. BDACE

D. EDACB

Answer: C



19. Density of the material of a paper is given a 0.5 g cm^{-3} . The mass of the paper is 1 g and its length and breadth are 10 c and 5 cm, respectively. Arrange the

following steps in a sequence to find the thickness of the

paper.

(A). The Othickness of the paper is $\frac{\text{Volume of the paper (m)}}{\text{Vlume of the paper (V)}}$

(B) The density (d) of the material of the paper is $= \frac{Mass \text{ of the paper (m)}}{volume \text{ of the paper (V)}}$

(C). then the volume (V) o the paper

Mass of the paper (m)

Density (d) of the paper

(D). The volume (V) of the paper is=length imes breadth imes

thickness of the paper.

A. ABCD

B. BADC

C. ABDC

D. BCDA

Answer: D
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20. The smallest measurement that can be measure by
using a wall clock is

A.1 second

B.1 minute

C.1hour

D. 2 second

Answer: A



21. The length and breadth of a rectangle are 2 m and 5m,

respectively, the area of the reactangle is_____.

A. $10m^2$

B. $100000cm^2$

 $C. 1 km^2$

D. both a and b

Answer: D



22. If the density of a substance is $2 imes 10^3 kg$ m^{-3} , then

the mass of 5 m^3 of this substances is

A. 1000 kg

B. 10000 g

C. 10000 kg

D. both a and b

Answer: C

Watch Video Solution

23. The mass of a body of weight 200 gf is ____g.

A. 200

B. 300

C. 400



Answer: A



rupee coin is____



A. 1.56 mm

B. 1.56 cm

C. 1.67 mm

D. 1.67 cm

Answer: A

Watch Video Solution

25. 5 litre of a liquid weights 5kg. The density of liquid is_____.

A. 1 kg m^{-3}

B.1 g cm^{-3}

C. 100 kg m⁻³

D. $100g m^{-3}$

Answer: B Watch Video Solution

26. 1 kilogram is equal to _____.

A. 1000 gram

B. 100 gram

C. 1000 milligram

D. 100 milligram

Answer: A



27. Mass is measured by using a_____.

A. Spring balance

B. physical balance

C. measuring jar

D. metre scale

Answer: B



28. 1 kg
$$m^{-3}$$
=____

A. 1000 g m^{-3}

B.
$$\frac{1}{1000}g$$
 cm⁻³

C. 10000 kg cm^{-3}

D.1 g cm^{-3}

Answer: B

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29. The distance between two cities A ad B in a map is 7.5 cm. the scale taken for drawing this map is 1cm=1,50,000m. The actual distance between A and B is km.

A. 1125000

B. 20000

C. 200

D. 1125

Answer: D



30. 1 m
$$(3) =$$
____litre.

A. 1

B. 10

C. 100

D. 1000

Answer: D



31. The whole length of a metre scale is divided into 500 equal parts then the smallest measurement that can be measured by using the scale is _____.

A. 0.5 m

B. 0.005 m

C. 50 mm

D. 2 mm

Answer: D



32. Which among the following is (are) the units(s) of pressure?

A. N m^{-2}

B. gwt cm^{-2}

C. kgwt m^{-2}

D. All of the above

Answer: D



33. Which of the following statements is /are correct?
A. The weight of a body can be zero.

B. The weight of a body can be greater than zero.

C. The mass of a body can be zero.

D. both a and b

Answer: D

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34. Volume of an irregular shaped solid can be measured

by using a____

A. density bottle

B. spring balance

- C. measuring cylinder
- D. physical balance

Answer: C

Watch Video Solution

35. Which of the following statements is incorrect?

A. As the temperature of gas increases, its volume increases.

B. As the temperature of a gas increases, its density decreases.

C. As the temperatrue of a gas increases, its density

increases.

D. both a and b

Answer: B

Watch Video Solution

36. An atlas of a country is shown in the figure, the

distance between cities A and B is_____



A. 35 km

B. 3500 km

C. 350 km

D. both a and b

Answer: C



37. Arrange the following steps in a sequence of find the vlume oof an irregular shaped solid body.

(A). The irregular shaped solid is tied with the thread and is lowered into the measuring cylinder.

(B). A measuring cylinder with graduations in millilitre or cubic centimetrer is taken.

(C). The level of water in the measuring cylinder rises after immersion of the solid. (say V_2)

(D) First, it is filled with water to a certain level or volume. (say V_1)

(E). The volume of the stone is equal to the difference between the volume of the water before and after the immersion of the stone. $(V_2 - V_1)$. A. ABCDE

B. BCADE

C. BDACE

D. EDACB

Answer: C

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38. Density of the material of a paper is given a 0.5 g cm^{-3} . The mass of the paper is 1 g and its length and breadth are 10 c and 5 cm, respectively. Arrange the following steps in a sequence to find the thickness of the paper.

(A). The Othickness of the paper is $\frac{\text{Volume of the paper (m)}}{\text{Vlume of the paper (V)}}$

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(C). then the volume (V) o the paper

Mass of the paper (m)

Density (d) of the paper

(D). The volume (V) of the paper is=length \times breadth \times

thickness of the paper.

A. ABCD

B. BADC

C. ABDC

D. BCDA

Answer: D



	Column A			Column B
Α.	Physics	()	а.	To detect fracture in a bone
B.	X-rays	()	b.	1000 litres
C.	Aim of science	()	С.	Weight of body of mass 10 ⁻³ g
D.	The volume of 1 m ³ is	()	d.	Triangulation method
E.	1 dyne	()	e.	Convection current in air
F.	Ventilation in a room	()	f.	Deals with interaction between matter and energy

3.

O View Text Solution

	Column A					Column B
Α.	Science	()	a		Gravitational pull by Earth
B.	The volume of cube of side 'S'	()	b).	Due to convection current
С.	CGS unit of temperature	()	С		The atoms packed within the substance
D.	Density of liquid	()	d	l.	Latin word 'Scire'
E.	Weight	()	e		S ³
F -	Liquids heat up	()	f.		Mass of liquid of volume Mass of water of same volume

O View Text Solution

Match

columns

	Column A				Columnit
А.	1 g cm ⁻³	()	а.	1000 kg m^{-3}
B.	Convection current	()	b.	cm ³
C.	Volume	()	C.	Measurement of large distances
D.	Triangulation method	()	d.	Mass/volume
E.	Mass	()	e.	Change in density
F.	Density	()	f.	kg

Watch Video Solution

	Column A				Column B
Α.	Physics	()	а.	To detect fracture in a bone
В.	X-rays	()	b.	1000 litres
C.	Aim of science	()	C.	Weight of body of mass 10 ⁻³ g
D.	The volume of 1 m ³ is	()	d.	Triangulation method
E.	1 dyne	()	e.	Convection current in air
F.	Ventilation in a room	()	f.	Deals with interaction between matter and energy



Answer The Following Question

1. What is the meaning of the word science?



2. Express the density 2 g cm^{-3} in SI system.



3. How does the density of a solid change with minor changes in temperature?

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4. Name the device used to measure the volume of an

irregular solid.



5. How is the volume of a regular solid determined?

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6. What is the consequence of change in density of liquids
with temperature?
Vatch Video Solution
7. Name the method used to measure the distance
between stars.

8. Define one kilogram weight.

Watch Video Solution
9. Define one gram force.
Watch Video Solution
10. Will mass of the solid body changes with change in its volume?
Watch Video Solution

11. What is convection current?





15. Science of engineering and technology which is applied to life sciences is

Vatch Video Solution	

16. What causes the formation of the land and sea breezes.?

Watch Video Solution

17. How does the weight of a body change with the change in altitude?



21. What is the meaning of the word science?

Watch Video Solution
22. Express the density 2 g cm^{-3} in SI system.
Vatch Video Solution
23. How does the density of a solid change with minor
changes in temperature?



24. Name the device used to measure the volume of an irregular solid.

Watch Video Solution
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Vatch Video Solution

27. Name the method used to measure the distance

between stars.

Watch Video Solution 28. Define one kilogram weight. Watch Video Solution 29. Define one gram force. Watch Video Solution

30. Will mass of the solid body changes with change in its

volume?

Watch Video Solution
31. What is convection current?
Watch Video Solution
32. What are the common multiple and submultiple units
of mass? Express them in terms of kg.
Watch Video Solution

33. Write CGS units o area, force, temperature and heat.

Vatch Video Solution
34. What are the five main branches of Physics?
Watch video solution
35. Science of engineering and technology which is applied to life sciences is
O Watch Video Solution

36. What causes the formation of the land and sea breezes.?



37. How does the weight of a body change with the

change in altitude?

> Watch Video Solution

38. What is SI and CGS unit of length, mass, time, area and

volume.

39. How does the density of a solid change with minor changes in temperature?Watch Video Solution

40. What is a systematic error ? How can it be removed ?

Watch Video Solution

Short Answer Type Question

1. The mass of a bottle filled with water is found to be 150

g. the mass of the empty bottle is 50 g and the external

volume of the container is 125 cm^3 . Find out the density

of the material of the bottle.



2. Ten identical metalic balls of density 5 g cm^{-3} when dropped inito water, the volume of the water diplaced is found to be 500 cm^3 . Determine the mass of each metallic ball.

Watch Video Solution

3. Convert 1 kg m^{-2} into g cm^{-2} .



5. Give few examples from day to day life, where phyics is

employed.



6. Arrange the following steps in a sequence of find the

vlume oof an irregular shaped solid body.

(A). The irregular shaped solid is tied with the thread and

is lowered into the measuring cylinder.

(B). A measuring cylinder with graduations in millilitre or cubic centimetrer is taken.

(C). The level of water in the measuring cylinder rises after immersion of the solid. (say V_2)

(D) First, it is filled with water to a certain level of volume. (say V_1)

(E). The volume of the stone is equal to the difference between the volume of the water before and after the immersion of the stone. $(V_2 - V_1)$.

Watch Video Solution

7. Convert 1 m
$$s^{-1}$$
 into cm s^{-1} .

8. The volume fo mercury and water is 50 ml each. What is the ratio of their mass, if their densities are in the ratio 68:5?

Vatch Video Solution									
9.	Find	the	density	of	cuboid	of	dimesions		
$3cm \times 5cm \times 7cm$ and having mass 1 kg in SI system									

Watch Video Solution

10. What is a density bottle?

11. what is SI and CGS unit of time, mass, distance, force?

Vatch Video Solution
12. Explain how the ventilation in a room is possible
Watch Video Solution
13. Explain why a flame point is in the upward direction.





16. Take two cubes each of side 4 cm made up of iron and aluminium. Why is there difference in masses o two spheres inspite of having same volume.



17. The mass of a bottle filled with water is found to be 150 g. the mass of the empty bottle is 50 g ad the external vlume o the container is 125 cm^3 . Find out the density of the material of the bottle.

Watch Video Solution

18. Ten identical metalic balls of density 5 g cm^{-3} when dropped inito water, the volume of the water diplaced is found to be 500 cm^3 . Determine the mass of each metallic ball.

19. When 20 drops of water is added to a graduated cylinderical container filled with water, the level of the liquid rises from 10 ml to 20 ml. Calculate the mass of each water drop.



20. The density of a substance is 5 kg per litre. Express iit in g cm^{-3} .



21. Give few examples from day to day life, where phyics is

employed.





24. The volume fo mercury and water is 50 ml each. What is the ratio of their mass, if their densities are in the ratio 68:5?

Watch Video Solution								
25.	Find	the	density	of	cuboid	of	dimesions	

3cm imes 5cm imes 7cm and having mass 1 kg in SI system.

Watch Video Solution

26. What are the uses of tringulation method?

27. Explain how the ventilation in a room is possible

Vatch Video Solution
28. Explain why a flame point is in the upward direction.
Watch Video Solution
29. Find thhe mass of 1 m^3 of gold in kg when density of
gold is 19 g cm^{-3} .
Vatch Video Solution
30. If 5 kg of glycerine occupies 0.004 m^3 , deterimine the density of glycerine in g cm^{-3} and kg m^{-3} .



31. Take two cubes each of side 4 cm made up of iron and aluminium. Why is there difference in masses of two cubes inspite of having same volume.

Watch Video Solution

Essay Type Question

1. Explain the steps through which science is applied.



3. With the help of suitable example, explain how science

is applied.



4. When half of the total volume of an empty beaker of

mass 100 g is filled with water, its mass is found to be 500

g and when the remaining volume of the beaker is filled with a liquid, its mass is found to be 1 kg. Calculate the density of the liquid.



5. Write the differences between mass and weight of an

object.

Watch Video Solution

6. What is a density bottle?



7. Test tube A contains 10 ml of liquid X and test tube B contains a liquid Y of volume 50 ml. the ratio o the density of Y to X is 2:5. Compare the mass of liquid A and B.

Watch Video Solution

8. Wriite CGS unit and SI unit for given following physical quantities:

- (a) Area, (b) Volume
- (c) Density, (d) Velocity speed

(e) Aceleration.

Watch Video Solution

9. Explain the steps through which science is applied.



11. The orthocenter of the triangle PAB is



12. When half of the total volume of an empty beaker of mass 100 g is filled with water, its mass is found to be 500 g and when the remaining volume of the beaker is filled with a liquid, its mass is found to be 1 kg. Calculate the density of the liquid.



13. Bring out the differecnes between the mass and the

weight of a body.



14. Name the devies used to measure the density of a liquid.



15. Test tube A contains 10 ml of liquid X and test tube B contains a liquid Y of volume 50 ml. the ratio o the density of Y to X is 2:5. Compare the mass of liquid A and B.



16. Wriite CGS unit and SI unit for given following physical

quantities:

- (a) Area, (b) Volume
- (c) Density, (d) Velocity speed
- (e) Acceleration, (f) force
- (g) Weight, (h) pressure
- (i) Temperature, (j) Energy.



Level 1 True False

1. The SI unit of volume is:



2. Convert 1 ml into cm^3 .

Watch Video Solution
3. Mass of a given substance does not change with
change in position or location.
Watch Video Solution
4. What is the SI unit of weight ?
Vatch Video Solution

5. Mass of a body cannot be zero.

Watch Video Solution			
6. As the temperature of gases increases, its density also			
increase.			
Watch Video Solution			
7. $kg = 1^{-1}$ is a unit of density.			
Watch Video Solution			

8. Triangulation method is used for measuring very long

distances.

Watch Video Solution
9. Density of keerosene is less than the density of water.
Watch Video Solution
10. SI unit of volume is cubic metre.
Vatch Video Solution



13. SI unit of weight is Newton.



14. Mass of a body cannot be zero.

Watch Video Solution
15. As the temperature of gases increases, its density also
increase.
Watch Video Solution
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Watch Video Solution

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Watch Video Solution
18. Density of keerosene is less than the density of water.
Watch Video Solution
Level 1 Fill In The Blanks
1. The method of measuring distance by forming a is called tringulation method.

D Watch Video Colution



5.	Unit	of	energy	is	SI	system	is
----	------	----	--------	----	----	--------	----

Watch Video Solution
6. Volume of 1g water is
Vatch Video Solution
7is the force with which the earth pulls a body
towards its centre.
Vatch Video Solution



11. The SI unit of density is:
Watch Video Solution
12. The weight of a body can be zero whenacts on it.
Watch Video Solution
13. Unit of energy is SI system is
Watch Video Solution
14. Mass of 1 ml water isg.



Level 1 Mcqs

1. An atlas of India is drawn by taking scale 10 cm=15000 km. If the actual distance between the cities of Bhopal and cochin is 1500 km, the distance between the two places in the atlas will be____cm.

A. 10^{2}

 $\mathsf{B.1}$

C. 10000

D. 1000

Answer: B

Watch Video Solution

2. Sea breeze is due to thhe change in density of air with____.

A. change in temperature

B. chain in pressure

C. change in wind

D. change is whether condition

Answer: A

Watch Video Solution

3. Density of a liquid can be measured by using_____.

A. spring balance

B. measuring cylinder

C. density bottle

D. physical balance

Answer: C

Watch Video Solution

4. The area of a circle whose radius is 10 cm is _____.

A. 314 cm^2

B. 314 m^2

C. 3.1415 m^2

D. both a and b

Answer: A



5. If the area of a square field is 100 cm^2 , then the length

of the side is_____

A. 1 cm

B.1m

C. 0.1 m

D. 10 m

Answer: C



6. The density of water at $4^\circ C$ is:

A.1 g cm^{-3}

B. 100 kg m^{-3}

C. 1000 g cm^{-3}

D. 1 kg m^{-3}

Answer: A



7. Which among the following is the unit of density?

A. kg m^{-3}

B.g m^{-3}

C. kg m^{-3}

D. All the above

Answer: D

Watch Video Solution

8. Which of the following is/are units of weight?

A. N

B.gf

C. kg f

D. All the above

Answer: D



9. A ball is placed between two wooden blocks as shown

in the figure. The volume of the sphere is_____



A. $6.54cm^3$

B. $1.15 cm^3$

 $\mathsf{C.}\,2.14m^3$

 $\mathsf{D.}\,2.14 cm^3$

Answer: B

Watch Video Solution

10. The density o a substance in CGS system is 4 g cm^{-3} .

Its density in SI system is ____ kg m^{-3} .

A. 4

B.40

C. 400

D. 4000

Answer: D Watch Video Solution 11. The volume of a body having density 1 g cm^{-3} and mass 100 g is $___ cm^3$. A. 100 B. 50 C. $\frac{1}{100}$ $\mathsf{D.}\;\frac{1}{50}$ Answer: A

Watch Video Solution

12. A cylinder of height 1 m and radius 10 cm is fully filled with water, the volume of water is $___m^3$.

A. 3.14

B. 0.314

C. 0.0314

D. 314

Answer: C



13. 1000 kg of water occuples how much volume?

A. 1 I

B. 0.5 l

C. 1000 l

D. 0.75 Kl

Answer: C

Watch Video Solution

14. 1 hectare = m^2 .

A. 10^{2}

 $B.\,10^{3}$

 $\mathsf{C}.\,10^4$

 $\mathsf{D}.\,10^5$

Answer: C



15. 1 kg
$$m^{-3}$$
=____.

A. 100

B. 1/100

C. 1000

D. 1/1000

Answer: D



16. If the smallest measurement that can be measured by using a scale is 0.1 mm, then the length of 1 m in the scale is divided inot _____ equal parts.

A. 1000

B. 5000

C. 10000

D. 50000

Answer: C



17. Which of the following scale gives more accurate reading?

A. One metre inn a scale is divided into 1000 equal parts.

B. One cm in a scale is divided into 100 equal parts.

C. One mm in a scale is divided into 2 equal parts.

D. One mm in a scale is divided into 5 equal parts.

Answer: B



18. The unit of heat is/are

A. Calorie

B. Kelvin

C. Degree centrigrade

D. All the above

Answer: A

Watch Video Solution

19. Which of the following statement is wrong?

A. The mass of a body can be measured by using a

beam balance.

B. The weight of a body can be measured by using a

pring balance.

C. The mass of a body can be measured by using a

spring balance.

D. The weight of a body cannot be measured by using

a beam balance.

Answer: C

Watch Video Solution

20. The width of a stream is determined with the help of triangulation method. Arrange the followig steps in a sequence of explain the process to find the width.

(A). Fix a certain startionary object like tree on the other bank of the strem.

(B) Take two pins $(P_1 \text{ and } P_2)$ an fix P_1 and P_2 at one vertex of the drawing board such that pins and tree are on the same straight line.

(C) Select two positions (say A and B) on the ground and the horizontal distance between them is noted. Let it be 'D' m.

(D) Repeat the same process at position 'B' with other two pins $(P_3 \text{ and } P_4)$ at other vertex of the drawing board. ltBrgt (E) Take a drawing board and paste a white paper on it.

(F). Fix the board at position 'A' such that one edge is directed along 'AB'.

(G) Now, produce two straight lines and let meet at point
'P'. Complete the triangle with P, P_1 and P_3 . Measure the distnace between P_1 and P_3 say d. Then $\frac{D}{d}$ gives the actual distance on ground for every oen cm on the drawing board.

(H) Now the width of the river will be equal to the distance from midpoint of P_1 and P_3 (let it be P_5) ad P multiplied by $\frac{D}{d}$.

A. EACFBDGH

B. EABCDFHG

C. EDCBAFGH

D. ABCDEFGH

Answer: A



21. A density bottle weighs 120 g and 100 g when filled completely with oil ad water, respectively. If the weight of a empty density bottle is 40g, then arrange the following steps in sequence meant to solve the problem to get the density of oil

(A). The density of the oil

D - Mass of the oil	$_$ Mass of the oil
$D = \frac{1}{\text{Weight of the water}}$	Mass of the water
$_$ Weighht of oil $_$	$W_3 - W_1$
Weight of the water	W_2-W_1

(B). Let the weight of the bottle +oil= $W_3=120g$

and the weight of the bottle+water = W_2

100g, where bottle is completely filled with liquid, i.e., oil or water.

(C). Let the weight of the empty bottle $= W_1 = 40g$

(D). The the weight of the oil ad water would be equal to (W_3-W_1) and (W_2-W_1) , respectively.

A. CBDA

B. ABCD

C. BADC

D. DCBA

Answer: A



Match

columns

	Column A				 Column B
Α.	Standard	()	а.	Unit
	measure				
В.	Physics	()	b.	Mass of liquid of volume (V)
					Volume (V) of water
C.	1 cubic centimeter	()	c.	Alters from place to place
D.	The acceleration due to gravity	()	d.	Weight of a body of mass 0.1 kg
E.	Density of	()	e.	External behaviour of matter
F.	1 N	()	f.	1 ml.



23.				Match			
	Column A				Column B		
Α.	P hysics	()	a.	Study of properties of matter		
B.	0.1 tonne	()	b.	Mass		
C.	Beam balance	()	с.	0.001 g cm^{-3}		
D.	1 kg m ⁻³	()	d.	1 quintal		



columns



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25. An atlas of India is drawn by taking scale 10 cm=15000 km. If the actual distance between the cities of Bhopal

and cochin is 1500 km, the distance between the two places in the atlas will be____cm.

A. 10^{2}

B. 1

C. 10000

D. 1000

Answer: B

Watch Video Solution

26. Sea breeze is due to thhe change in density of air with .

A. change in temperature

B. chain in pressure

C. change in wind

D. change is whether condition

Answer: A

Watch Video Solution

27. Density of a liquid can be measured by using_____.

A. spring balance

B. measuring cylinder

C. density bottle

D. physical balance

Answer: C



A. 314 cm^2

B. 314 m^2

C. 3.1415 m^2

D. both a and b

Answer: A



29. If the area of a square field is 100 cm^2 , then the length of the side is_____

A. 1 cm

B.1m

C. 0.1 m

D. 10 m

Answer: C



30. The density of water at $4^{\circ}C$ is:

A. 1 g cm^{-3}

B. 100 kg m^{-3}

C. 1000 g cm^{-3}

D. 1 kg m^{-3}

Answer: A

Watch Video Solution

31. Which among the following is the unit of density?

A. kg m^{-3} B. g m^{-3} C. kg m^{-3} D. All the above

Answer: D



32. Unit of weight is (are)____.

A. N

B.gf

C. kg f

D. All the above

Answer: D

Watch Video Solution

33. A ball is placed between two wooden blocks as shown

in the figure. The volume of the sphere is____



A. $6.54 cm^3$

B. $1.15 cm^3$

 $\mathsf{C.}\,2.14m^3$

 $D. 2.14 cm^3$

Answer: B



35. The volume of a body having density 1 g cm^{-3} and mass 100 g is ____ cm^{3} .

A. 100

B. 50

C.
$$\frac{1}{100}$$

D. $\frac{1}{50}$

Answer: A



36. A cylinder of height 1 m and radius 10 cm is fully filled with water, the volume of water is $____m^3$.

A. 3.14

B. 0.314

C. 0.0314

D. 314

Answer: C

Watch Video Solution

37. 1000 kg of water occuplies

A. 1 l

B. 0.5 l

C. 1000 |

D. 0.75 Kl

Answer: C



A. 10^{2}

 $\mathsf{B}.\,10^3$

 $C. 10^{4}$

D. 10^{5}

Answer: C



39. 1 kg m^{-3} =____.

A. 100

B. 1/100

C. 1000

D. 1/1000

Answer: D



40. If the smallest measurement that can be measured by

using a scale is 0.1 mm, then the length of 1 m in the scale

is divided inot _____ equal parts.

A. 1000

B. 5000

C. 10000

D. 50000

Answer: C



41. Which of the following scale gives more accurate reading?

A. One metre inn a scale is divided into 1000 equal

parts.

- B. One cm in a scale is divided into 100 equal parts.
- C. One mm in a scale is divided into 2 equal parts.
- D. One mm in a scale is divided into 5 equal parts.

Answer: B



42. Which among the followig is the unit of heat?

A. Calorie

B. Kelvin

- C. Degree centrigrade
- D. All the above

Answer: A

O Watch Video Solution

43. Which of the following statement is wrong?

A. The mass of a body can be measured by using a

beam balance.

B. The weight of a body can be measured by using a

pring balance.

C. The mass of a body can be measured by using a

spring balance.

D. The weight of a body cannot be measured by using

a beam balance.

Answer: C

Watch Video Solution

44. The width of a stream is determined with the help of triangulation method. Arrange the followig steps in a sequence of explain the process to find the width.
(A). Fix a certain startionary object like tree on the other bank of the strem.

(B) Take two pins $(P_1 \text{ and } P_2)$ an fix P_1 and P_2 at one vertex of the drawing board such that pins and tree are on the same straight line.

(C) Select two positions (say A and B) on the ground and the horizontal distance between them is noted. Let it be 'D' m.

(D) Repeat the same process at position 'B' with other two pins $(P_3 \text{ and } P_4)$ at other vertex of the drawing board. ltBrgt (E) Take a drawing board and paste a white paper on it.

(F). Fix the board at position 'A' such that one edge is directed along 'AB'.

(G) Now, produce two straight lines and let meet at point 'P'. Complete the triangle with P, P_1 and P_3 . Measure the distnace between P_1 and P_3 say d. Then $\frac{D}{d}$ gives the actual distance on ground for every oen cm on the drawing board.

(H) Now the width of the river will be equal to the distance from midpoint of P_1 and P_3 (let it be P_5) ad P multiplied by $\frac{D}{d}$.

A. EACFBDGH

B. EABCDFHG

C. EDCBAFGH

D. ABCDEFGH

Answer: A



45. A density bottle weighs 120 g and 100 g when filled completely with oil ad water, respectively. If the weight of a empty density bottle is 40g, then arrange the following steps in sequence meant to solve the problem to get the density of oil

(A). The density of the oil

D _ Mass of the oil	$_$ Mass of the oil
$D = \overline{\text{Weight of the water}}$	Mass of the water
$_$ Weighht of oil $_$	W_3-W_1
Weight of the water	$\overline{W_2-W_1}$

(B). Let the weight of the bottle +oil= $W_3=120g$

and the weight of the bottle+water = W_2

100g, where bottle is completely filled with liquid, i.e., oil or water.

(C). Let the weight of the empty bottle $= W_1 = 40g$

(D). The the weight of the oil ad water would be equal to $(W_3 - W_1)$ and $(W_2 - W_1)$, respectively.

A. CBDA

B. ABCD

C. BADC

D. DCBA

Answer: A

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Match

columns

	Column A				 Column B
Α.	Standard	()	a.	Unit
	measure				
В.	Physics	()	b.	Mass of liquid of volume (V)
					Volume (V) of water
C.	1 cubic centimeter	Normer N)	C.	Alters from place to place
D.	The acceleration due to gravity	()	d.	Weight of a body of mass 0.1 kg
E.	Density of liquid	()	e.	External behaviour of matter
F.	1 N	4)	f.	1 ml.



46.

47. Match the following

	Column A				Column B
Α.	Physics	()	a.	Study of properties of
					matter
Β.	0.1 tonne	()	b.	Mass
C.	Beam balance	()	c.	0.001 g cm^{-3}
D.	1 kg m^{-3}	()	d.	1 quintal





View Text Solution

Level 2 Mcqs

1. A stone of density 5×10^3 Kg m_{-3} and mass 2 kg is immeresed into a liquid, inside a graduted cylinder. The reading on the graduated cylinder. The reading on the graduated cylinder is $1000cm^3$ before the stone is immersed into it, the reading after the stone is immersed in it is _____ cm^3 .

A. (a) 14000

B. (b) 500

C. (c) 5000

D. (d) 1400

Answer: D



2. The weight of the givensolid cylinder rodis 2512 N.

The density of the body is _____ Kg m_{-3} .

 $(takeg = 10ms_{-2})$



A. (a) 2512

B. (b) 25xx 12

C. (d) 10^{3} S

D. (d)10^(6)S

Answer: D



3. The mass of a density bottle when it is filled with a liquid of density 3000 kg m_{-3} is 400 g and the mass of the bottle when it is filled with water is 200 g. The mass of the empty density bottle is _____ g.

A. (a)10

B. (b) 100

C. (c)50

D. (d) 500

Answer: B



5. In a particular scale A, one metreis divided into 500equal parts and in scale B one cm is divided into 5 equal parts and in scale C one mm is divided into 2 equal parts, then the accuracy of ______.

A. (a)A>B>C

B. (b) A = B < C

C. (c) A=BgtCs

D. (d) A=B=C

Answer: b

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6. A wire is wound over a pencil and placed over a scale as shown in the figure. The diameter of the given wire is



A. (a) 1.45 cm

B. (b) 2.9 mm

C. (c) 2.9 m

D. (d) 1.45 mm

Answer: D



7. If the radius of a sphere is doubled, then the density of

the sphere is ______ times its original value.

A. (a)` 1//2

B. (b) 2

C. (c) 4

D. (d) 1/8

Answer: D




A paper cutting is placedon a graph as shownin the figure, each on he X and Y axes represens a distance of 2 cm. The area of the paper cutting is $___Cm^2$.

A. (a) 378

B. (b) 186

C. (c) 312

D. (d) 156

Answer: C



9. The mass of an empty density bottle is 50 g. When it is completely filled with water, its mass is found to be 100 g and when it is completly filled with aliquid, its mass is 150 g. The density of the liquid is ______ kg m^{-3} .

A. (a) 2

B. (b) 2000

C. (c) 3.5

D. (c)3500



The density of the solid cylindrical bar shown in the figure

is $5 imes 10^3$ kg m^{-3} . The weight of the bar is _____ N. (take g=10 m s^2

A. (a) 157

B. (b) 1570

C. (c) 320

D. (d) 3.2

Answer: A

Watch Video Solution

11. The readings in a graduated cylinder are $10cm^3$ and $20cm^3$, respectively, before and after a metal alloy piece of

mass 200 g is put in it. Thedensity of the material of the

alloy is _____kg m^{-3}

A. (a) $2 imes 10^3$

B. (b) 2xx10⁽⁴⁾

C. (c) $2 imes 10^5$

D. (d) 2xx 10⁽⁶⁾

Answer: B



12. A stock of identical coins are placed on a scale as shown in the figure. The thickness of a coin is _____



A. (a) 1.8 cm

B. (b)18 mm

C. (c) 1.8 mm

D. (d) 0.18 m

Answer: C



13. If the density of a sphere is reduced to 1/8 of its original value, then the radius of the sphere is _____

times its original radius (assume that there is no change in mass). S

A. 2

B.4

 $\mathsf{C.}\,1/2$

D. 1/4

Answer: A

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A paper cutting is placed on a graph a as shown in the figure, each division on the X and Y axes represents a distance off 1 cm. The area of the paper cutting is $___ cm^2$.

A. 100

B. 112

C. 93

D. 96

Answer: C



15. Density of the material of a paper is $0.4g \ cm^{-3}$. The mass of the paper is 0.5 g and its length and breadth are 10 cm and 4 cm, respectively. Determine the thickness of the paper.



16. If the length, breadth and height of a cuboid are all increased to 'n'times their original values of 'n'.



17. Solve the following example :

A body of volume $100cm^3$ is immersed completely in water. Find the weight of the water displaced by the body.

$$\left[g=9.8m\,/\,s^{2},
ho(water)=10^{3}kg\,/\,m^{3}
ight]$$

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18. A student was given a task to find the destiny of a cube

whose mass and side are 100 g and 5 cm, respectively.





19. A physics student was given a 400 pages book and a metre scale and asked to measure the thickness of the paper in the book. Explain how can he measure it.

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20. A wire wound over a rod and placed over a scale, as

shown in figure. Calculate the radius of the wire.





21. A student took a spring balance calibrated in gf. He then suspended an object of mass 1 kg to the spring balance. Determine what would be the reading of the spring balance.

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22. A physics scholar took two spring balances S_1 and $(s_2$ that are calibrated on the surface of the Moon and the Earth, respectively. He then weighed a body using both S_1 and S_2 at a given place on the surface of the

earth. He determind the ratio of the readings. What is the

ratio?S



23. A scientist took a physical balance and an object of weight 10 kgwt from the Earth to the surface of the Moon. There on the Moon, if he placed this 10 kgwt object on one of the pansof physical balance, find the mass of the object required to balance the physical balance.



24. The change in volume of a gas with change in temperature is plotted on a graph, as shown in he figure.

Calculate the ratio of density at $50^{\,\circ}C \, ext{ and } \, 100^{\,\circ}C$



25. Ram took an empty density bottle and a weighing machine. He measures the density bottle and a weighing machine. He measures the empty bottle and found it to be 40 .g. He then completely filled it with water and

weighed it to be 100 g. With this data can he calculate the

capacity of the density bottle? If so, what is its capacity



26. The densities fo three substances A, B and C are given below. If equal voumes of A, B and C are taken, arrange then in increasing order of their masses.

Substance	Density
Λ	2 g cm^{-3}
В	1 kg m ⁻³
С	3 g m^{-3}



27. Triangulation method is used to determine the distance between two places A and C. A triangle obtained to a reduced scale is as shown below The ratio of the actual distances from C to another place B: and A to B is 5. Determine the distance between A and C. The actual distance between B and C is 20 km.



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28. The weight of a body on the earth is 500 gf. The volume of water displaced when it is immersed in water in $250cm^3$. Determine the density of the material fo the body.



29. Ram took an empty ballon of mass 5 g and filled it with air. He then measured the mass of ballon filled with air tube to be 5.05 g. He considered the density of the air filled inside th ballon as $1.5 \text{ kg } m^{-3}$ and found the volume of air present inside the ballon. Find his answer.

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C. (c) 2.9 m

D. (d) 1.45 mm

Answer: D



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of the sphere is ______ times its original value.

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B. (b) 2

C. (c) 4

D. (d) 1/8

Answer: D





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C. (c) 312

D. (d) 156

Answer: C



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C. (c) 3.5

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45. If the length, breadth and height of a cuboid are all increased to 'n'times their original values of 'n'.



46. A wooden block is tied to a metallic rod of mass 100 g and immersed completely inwater. When the displaced water is collected in water.

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2. Three places A,B and C form the vertices of a triangle. A triangle to reduced scale is drawn as shown below. If the actual distance between A nd C is 200 km, determine the actual distance from Ato B and B to C,.



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3. Two persons A and B are 40 m apart. Triangulation method was used to measure the distance obtained is place C and the person A. The triangle obtained is as shown. The triangle is drawn from the positions of A and B and the vertices P, Q and R correspond to the position of A, B and the palce C, respectively. Determine the distance between the person A and the place C.



4. A physics student Ram was given an empty density bottle, a physical balance and a certain liquid. He first found the weight of empty density bottle to a be 50 gf When completely filled with a liquid, it weighs 130 gf. He calculated the density of the liquid. What could be his answer?



5. Ram and Shyam were given cube A and cube B both having same mass, respectively. The side of cube A is three times that of the cube B. Ram and Shyam found the

densities of A and B. What is the ratio of densities of A

and B?



6. Two identical containers A and B are filled with two different liquids of equal masses. The level of the liquid in container A is found to be one-fourth of the level of the liquid in container B. What is the ratio of thedensity of two liquids? If the density of he liquid in the container A is 2 " g " cm^{-3} , then find the density of the mixture of the two liquids.



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Watch Video Solution

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and B?



figure, each on he X and Y axes represens a distance of2

cm. The area of the paper cutting is _____ Cm^2 .

A. (a) 378

B. (b)186

C. (c) 312

D. (d) 156

Answer: C

Watch Video Solution

2. A wire is wound over a pencil and placed over a scale as shown in the figure. The diameter of the given wire is



A. (a) 1.45 cm

B. (b) 2.9 mm

C. (c) 2.9 m

D. (d) 1.45 mm

Answer: D



3.

Column A Column B
(A) Measuring cylinder (a) kgf, gf
(B) Gavitational units of weight (b) ml of cc
(C) 1 g
$$cm^{-3}$$
 (c) Zero weight
(D) Zero gravitational force (d) 1000 kg m^{-3}
A. (a) $A \rightarrow b, B \rightarrow a, C \rightarrow d, D \rightarrow c.$ (b)
 $A \rightarrow b, B \rightarrow d, C \rightarrow a, D \rightarrow c,$ (c)
 $A \rightarrow c, B \rightarrow d, C \rightarrow b, D \rightarrow a$ (d)
 $A \rightarrow a, B \rightarrow c, C \rightarrow b, D \rightarrow d$

Β.

C.

D.

4. Assertion (A) : The weight of a body changes with altitude.

Reason (R): The accelaration due to gravity changes with altitude.

A. (a) Both A and R are true, and R is correct explanation of A.

B. Both A and R are true, but R is not the correct

explanation of A.

C. (c) A is true but R is false.

D. (D) A is false but R is true



5. Assertion (A): The liquid displaced by a solid cube of a side 3 cm when completely immersed in the liquid is more than displaced by a solid cube of side 2 cm.
Reason (R): The liquid displaced by a solid increases with increase in the volume of the solid.

A. (a) Both A and R are true and R is the correct

explanation of A.

B. (b) Both A and are true, but R is not the correct

explanation of A.

C. (c) A is true but R is false.

D. (d) Both A and R are false.

Answer: A

Vatch Video Solution

6. The densities of two liquids A and B are in the ratio 15:2 If their masses are equal, write the following steps in a sequential order to determine the ratio of their volumes.

A. (a) Write the relation between density, mass and volume for each of the liquid A and B.

B. (b) Note the ratio of densities, $rac{d_A}{d_B}=rac{15}{2}$ and

 $m_A = m_g$

C. Divide the two equations and get the volumes of

the two liquids using
$$\displaystyle rac{V_A}{V_B} = \displaystyle rac{d_B}{d_A}$$

D. (d) Substitute the given value in the above formula

and find the ratio of $V_A \rightarrow V_B$.

Answer: A



7. Different units of density are kg m^{-3} , "g " cm^{-3} , "kg " cm^{-3} and "g " m^{-3} .Arrange the following steps in a sequential order to write the ascending order of these units.

A. (a) a d c b

B. (b) c b d a

C. (c) a b d c

D. (d) a d b c

Answer: D

Watch Video Solution

8. Which of the following statements is//are incorrect?

A. (a) The weight os a body can be zero.

B. (b) The weight of a body can be greater than zero.

C. (c) The mass of a body can be zero.

D. (d) Both (a) and (c).

Answer: C



9. The mass of an empty density bottle is 50 g. When it is completely filled with water, its mass is found to be 100 g and when it is completly filled with aliquid, its mass is 150 g. The density of the liquid is ______ kg m^{-3} .

A. (a) 2

B. (b) 2000

C. (c) 3.5

D. (d) 3500

Answer: B

Vatch Video Solution

10. The whole length of a metre scale is divided into 500 equal parts then the smallest measurement that can be measured by using the scale is _____.

A. (a) 0.5

B. (b) 0.005 m

C. (c) 50 mm

D. (d) 2 mm

Answer: D



11. Which among the following is (are) the units(s) of pressure?

A. (a) N m^{-2}

B. (b) gwt cm^{-2}

C. (c) kgwt m^{-2}

D. (d) All the above.

Answer: D



12. In a particular scale A, one metreis divided into 500equal parts and in scale B one cm is divided into 5 equal parts and in scale C one mm is divided into 2 equal parts, then the accuracy of _____.

- A. (a)A>B>C
- B. (b) A = B > C
- C. (c) A = B gt C`
- D. (d)A = B > C

Answer: B



13. If the radius of a sphere is doubled, then the density of

the sphere is ______ times its original value.

A. (a) 1/2

B. (b) 2

C. (c) 4

D. (d) 1/8

Answer: D

Watch Video Solution



14.

The density of the solid cylindrical bar shown in the figure is $5 imes10^3$ kg m^{-3} . The weight of the bar is _____ N. (take g=10 m s^2

A. (a) 157

B. (b) 1570

C. (c) 320

D. (d) 3.2

Answer: A

Watch Video Solution

15. An atlas of a country is shown in the figure, the distance between cities A and B is_____



A. (a) 35 km

B. (b) 3500 m

C. (c) 350 km

D. (d) Both (a) and (b).

Answer: C





A paper cutting is placedon a graph as shownin the figure, each on he X and Y axes represens a distance of 2 cm. The area of the paper cutting is $___Cm^2$.

A. (a) 378

B. (b)186

C. (c) 312

D. (d) 156

Answer: C





A. (a) 1.45 cm

B. (b) 2.9 mm

C. (c) 2.9 m

D. (d) 1.45 mm

Answer: D

Watch Video Solution

18.

Column A		Column B		
(A)	Measuring cylinder	(a)	kgf,gf	
(B)	Gavitational units of weight	(b)	ml of cc	
(C)	$1~{ m g}~cm^{-3}$	(c)	$\operatorname{Zero}\operatorname{weight}$	
(D)	Zero gravitational force	(d)	1000 kg	m^{-3}
A. (a) $A o b, B o a, C o d, D o c$.				(b)

$$A o b, B o d, C o a, D o c,$$
 (c)

$$A \rightarrow c, B \rightarrow d, C \rightarrow b, D \rightarrow a$$
 (d)

$$A \rightarrow a, B \rightarrow c, C \rightarrow b, D \rightarrow d$$

B.
C.
D.
Answer: A
Watch Video Solution

19. Assertion (A) : The weight of a body changes with altitude.

Reason (R): The accelaration due to gravity changes with altitude.

A. (a) Both A and R are true, and R is correct

explanation of A.

B. Both A and R are true, but R is not the correct

explanation of A.

C. (c) A is true but R is false.

D.

Answer: A

Watch Video Solution

20. Assertion (A): The liquid displaced by a solid cube of a side 3 cm when completely immersed in the liquid is more than displaced by a solid cube of side 2 cm.

Reason (R): The liquid displaced by a solid increases with increase in the volume of the solid.

A. (a) Both A and R are true and R is the correct

explanation of A.

B. (b) Both A and are true, but R is not the correct

explanation of A.

C. (c) A is true but R is false.

D. (d) Both A and R are false.

Answer: A


21. The densities of two liquids A and B are in the ratio 15:2 If their masses are equal, write the following steps in a sequential order to determine the ratio of their volumes.

- A. (a) Write the relation between density, mass and volume for each of the liquid A and B.
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- C. Divide the two equations and get the volumes of

the two liquids using
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and find the ratio of $V_A \rightarrow V_B$.

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22. Different units of density are kg m^{-3} , "g " cm^{-3} , "kg " cm^{-3} and "g " m^{-3} . Arrange the following steps in a sequential order to write the ascending order of these units.

A. (a) a d c b

B. (b) c b d a

C. (c) a b d c

D. (d) a d b c

Answer: D



23. Which of the following statements is//are incorrect?

A. (a) The weight os a body can be zero.

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C. (c) The mass of a body can be zero.

D. (d) Both (a) and (c).

Answer: C



24. The mass of an empty density bottle is 50 g. When it is completely filled with water, its mass is found to be 100 g and when it is completly filled with aliquid, its mass is 150 g. The density of the liquid is ______ kg m^{-3} .

A. (a) 2

B. (b) 2000

C. (c) 3.5

D. (d) 3500

Answer: B

Watch Video Solution

25. The whole length of a metre scale is divided into 500 equal parts then the smallest measurement that can be measured by using the scale is _____.

A. (a) 0.5

B. (b) 0.005 m

C. (c) 50 mm

D. (d) 2 mm

Answer: D



26. Which among the following is (are) the units(s) of pressure?

A. (a) N m^{-2}

B. (b) gwt cm^{-2}

C. (c) kgwt m^{-2}

D. (d) All the above.

Answer: D

Watch Video Solution

27. In a particular scale A, one metreis divided into 500equal parts and in scale B one cm is divided into 5

equal parts and in scale C one mm is divided into 2 equal

parts, then the accuracy of ______.

A. (a)A>B>C

B. (b) A = B > C

C. (c) A = B gt C`

D. (d)A = B > C

Answer: B

Watch Video Solution

28. If the radius of a sphere is doubled, then the density

of the sphere is ______ times its original value.

A. (a) 1/2

B. (b) 2

C. (c) 4

D. (d) 1/8

Answer: D

Watch Video Solution



29.

The density of the solid cylindrical bar shown in the figure is $5 imes10^3$ kg m^{-3} . The weight of the bar is _____ N. (take g=10 m s^2

A. (a) 157

B. (b) 1570

C. (c) 320

D. (d) 3.2

Answer: A

Watch Video Solution

30. An atlas of a country is shown in the figure, the distance between cities A and B is_____



A. (a) 35 km

B. (b) 3500 m

C. (c) 350 km

D. (d) Both (a) and (b).

Answer: C



Test 2



A paper cutting is placedon a graph as shownin the figure, each on he X and Y axes represens a distance of 2 cm. The area of the paper cutting is $___Cm^2$.

B. (b) 112

C. (c) 93

D. (d) 96

Answer: C



in the figure. The thickness of a coin is _____



A. (a) 1.8 cm

B. (b) 18 mm

C. (c) 1.8

D. (d) 0.18 m

Answer: C

Watch Video Solution

3.

Column A

Column B

- (A) Liquid displaced by solid (a) $10^5 g$
- (b) $10^9 mg$ (B) 1 quintal
- (c) Unit of pressure (c) 1 tonne

(D) kgw

vt
$$m^{-2}$$

- Volume of the solid (d)

A.
$$A
ightarrow a, B
ightarrow b, C
ightarrow c, D
ightarrow d$$

 $\mathsf{B}.\, A \to d, B \to c, C \to b, D \to a$

 $\mathsf{C}.\, A \to d, B \to a, C \to b, D \to c$

 $\mathsf{D}.\, A \to d, B \to b, C \to c, D \to a$

Answer: C

Watch Video Solution

4. Assertion (A): The masss of $150m^3$ of iron is greater than the mass of 150 m⁽³⁾ of wood.

Reason (R): The densiy of iron is less than the density of wood.

A. (a) Both A and R are true and R is the correct explanation of A.

B. (b) Both A and R are true, but R is not the correct

explanation of A.

C. (c) A is true but R is false.

D. (d) Both A and R are false.

Answer: C

Watch Video Solution

5. Assertion (A) : The magnitude of volume of any liquid is equal to the magnitude of its mass what measured in CGS system. Reason (R) : Density of the liquid = mass of the liquid \times

volume of the liquid.

A. (a) Both A and R are true and R is the correct

explaanation of A.

B. (b) Both A and R are true, but R is not the correct

explanation of A.

C. (c) A is true but R is false.

D. (d) Both A and R are false.

Answer: D



6. Write the following steps in a sequential arder to show that the volume of a liquid displaced by a solid, which is insouble and completely immrsed in a liquid increases

with increase in the volume of the solid.

(a) The displaced liquid is collected in a beaker and its volume is measured with the help of a measuring cylinder.(b) Different objects, such as glass, stone, stc., of different liquid such as water, kerosene, etc.

(c) The phenomenon is observed at different places and different times.

(d) It is observed that the volume of displaced liquid increases as the volume of the solid increases.

A.adbc

B.cdad

C. b a c d

D. b d c a

Answer: C

View Text Solution

7. The unit of force in SI system is newton and it is given as 1 newton = $1kgms^{-2}$. In CGS system its unit is dyne and it is given as 1 dyne = 1 g cm s^(2). Arrange the following steps in a sequential order to relate the SI unit and CGS unit of force.

(a) Write the conversations of kg and m, into g and cm, respectively.

(b) Substitute the conversations in 1 newton = $1kgms^2$ Write the relation between 1 newton and dyne.

(d) Write in place of 1 g cm s⁽⁻²⁾ as 1 dyne

A. a c b d

B. a b d c

C.bdac

D. c d a b

Answer: B

Watch Video Solution

8. Which of the following statement is wrong?

A. The mass of a body can be measured by using a

beam balance.

B. The weight of a body can be measured by using a

spring balance.

C. The density of a body can be measured by using a

spring balance.

D. The weight of a body cannot be measured by using

a beam balance.

Answer: C

Watch Video Solution

9. The mass of a density bottle when it is filled with a liquid of density 3000 kg m^{-3} is 400 g and the mass of the bottle when it is filed with water is 200 g. The mass of

the empty density bottle when it is filled with water is 200

g. The mass of the empty density bottle is _____ g.

A. 10

B. 100

C. 50

D. 500

Answer: B



10. If the smallest measurement that can be measured by using a scale is 0.1 mm, then the length of 1 m in the scale is divided inot ______ equal parts.

A. 1000

B. 5000

C. 10000

D. 50000

Answer: C

Watch Video Solution

11. Which among the folloeing is the unit of energy?

A. joule

B. watt

C. newton

D. All the above

Answer: A



12. Which of the following scale gives more accurate reading?

A. One metre in a scale is divided into 1000 equal parts.

B. One cm in a scale is divided into 2 equal parts.

C. One mm in a scale is divided into 2 equal parts.

D. One cm in a scale is divided into 5 equal parts.

Answer: C Watch Video Solution

13. If the density of a sphere is reduced to 1/8 of its original value, then the radius of the sphere is ______ times its original radius (assume that there is no change in mass). S

A. 2

B.4

 $\mathsf{C.}\,1/2$

D. 1/4

Answer: A



A. 2512

$\mathrm{B.}\,25\times12$

$C. 10^{3}$

D. 10⁶

Answer: D



15. An atlas of India is drawn by taking scale 10 cm=15000 km. If the actual distance between the cities of Bhopal and cochin is 1500 km, the distance between the two places in the atlas will be cm.

A. 10

B. 1

C. 10000

D. 1000

Answer: A



figure, each division on the X and Y axes represents a

distance off 1 cm. The area of the paper cutting is

 $___ cm^2$.

A. (a) 100

B. (b) 112

C. (c) 93

D. (d) 96

Answer: C

Watch Video Solution

17. A stock of identical coins are placed on a scale as shown in the figure. The thickness of a coin is _____



A. (a) 1.8 cm

B. (b) 18 mm

C. (c) 1.8

D. (d) 0.18 m

Answer: C



18.

	Column A		Column B
(A)	Liquid displaced by solid	(a)	$10^5 g$
(B)	$1{ m quintal}$	(b)	$10^9 mg$
(c)	1 tonne	(c)	Unit of pressure
(D)	${ m kgwt}~m^{-2}$	(d)	${ m Volume} \ { m of} \ { m the} \ { m solid}$

A. `A to a, B to b, C to c, D to d

B. A`to d, B to c, C to b, D to a

 $\mathsf{C}.\, A \to d, B \to a, C \to b, D \to c$

D. A
ightarrow d, B
ightarrow b, C
ightarrow c, D
ightarrow a

Answer: C

Watch Video Solution

19. Assertion (A): The masss of $150m^3$ of iron is greater than the mass of 150 m⁽³⁾ of wood.

Reason (R): The densiy of iron is less than the density of wood.

- A. (a) Both A and R are true and R is the correct explanation of A.
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Answer: D



21. Write the following steps in a sequential arder to show that the volume of a liquid displaced by a solid, which is insouble and completely immrsed in a liquid increases with increase in the volume of the solid.

(a) The displaced liquid is collected in a beaker and its volume is measured with the help of a measuring cylinder.(b) Different objects, such as glass, stone, stc., of different liquid such as water, kerosene, etc.

(c) The phenomenon is observed at different places and different times.

(d) It is observed that the volume of displaced liquid increases as the volume of the solid increases.

A. a d b c

B. c d a d

C.bacd

D. b d c a

Answer: C



22. The unit of force in SI system is newton and it is given as 1 newton = $1kgms^{-2}$. In CGS system its unit is dyne and it is given as 1 dyne = 1 g cm s^(2). Arrange the following steps in a sequential order to relate the SI unit and CGS unit of force.

(a) Write the conversations of kg and m, into g and cm, respectively.

(b) Substitute the conversations in 1 newton = $1kgms^2$

Write the relation between 1 newton and dyne.

(d) Write in place of 1 g cm s^(-2) as 1 dyne

A. a c b d

B. a b d c

C. b d a c

D. c d a b

Answer: B


23. Which of the following statement is wrong?

A. The mass of a body can be measured by using a

beam balance.

- B. The weight of a body can be measured by using a spring balance.
- C. The density of a body can be measured by using a

spring balance.

D. The weight of a body cannot be measured by using

a beam balance.

Answer: C

24. The mass of a density bottle when it is filled with a liquid of density 3000 kg m_{-3} is 400 g and the mass of the bottle when it is filled with water is 200 g. The mass of the empty density bottle is _____ g.

A. 10

B. 100

C. 50

D. 500

Answer: B



25. If the smallest measurement that can be measured by using a scale is 0.1 mm, then the length of 1 m in the scale is divided inot ______ equal parts.

A. 1000

B. 5000

C. 10000

D. 50000

Answer: C



26. Which among the folloeing is the unit of energy?

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B. watt

C. newton

D. All the above

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A. One metre in a scale is divided into 1000 equal parts.

B. One cm in a scale is divided into 2 equal parts.

C. One mm in a scale is divided into 2 equal parts.

D. One cm in a scale is divided into 5 equal parts.

Answer: C



28. If the density of a sphere is reduced to 1/8 of its original value, then the radius of the sphere is ______ times its original radius (assume that there is no change in mass). S

A. 2

C.1/2

D. 1/4

Answer: A

Vatch Video Solution

29. The weight of the givensolid cylinder rodis 2512 N.

The density of the body is _____ Kg m_{-3} .

 $(takeg = 10ms_{-2})$



A. 2512

 $\mathrm{B.}\,25\times12$

 $C. 10^{3}$

D. 10⁶

Answer: D

Watch Video Solution

30. An atlas of india is drawn by taking scale 100 cm = 15000 km. If the actual distance between the cties of bhopal and Cochin in 1500 km, the distance between the two places in the atlas will be cm.

B. 1

C. 10000

D. 1000

Answer: A

Watch Video Solution

Test Your Concepts Very Short Answer Type Questions Fill In The Blanks

1. 10 g of water occupies..... cm^3 of volume.

View Text Solution

2. The mass of a body does not change with change

in.....

View Text Solution						
3. The CGS unit of pressure is						
Watch Video Solution						
4. As the temperature of the gas decreases, its density						
View Text Solution						

5. The smallest length that can be accurately measured by

using a metre scale iscm.

View Text Solution
6. Density of wateris than the density of cooking oil.
Vatch Video Solution

7. Weight of a body varies according to the variation in

the.....









3. The smallest measurement that can be measure by using a wall clock is .

A.1 second

B.1 minute

C.1hour

D. 2 second

Answer: D



4. The length and breadth of a rectangle are 2 m and 5m, respectively, the area of the reactangle is

A. $10m^2$

B. $100000cm^2$

 $C. 1 km^2$

D. Both a and b

Answer: C

Watch Video Solution

5. If the density of a substance is $2xx10^3$ kg m⁻³, then the mass of $5m^3$ of this substance is..... A. 1000 kg

B. 10000 g

C. 10000kg

D. Both a and b

Answer: A

Watch Video Solution

6. The mass of a body of weight 200 gf is ____g.

A. 200

B. 300

C. 400

D. 20

Answer: A



7. A pile of identical one rupee coins are placed over a metre scale as shown in the figure. The thickness of a one rupee coin is



A. 1.56mm

B. 1.56cm

C. 1.67mm

D. 1.67cm

Answer: B

Watch Video Solution

8. 5 litre of a liquid weights 5kg. The density of liquid is_____.

A. 1 kg m^{-3}

B. $1 \mathrm{g} \mathrm{cm}^{-3}$

C. 100 kg m $^{-3}$

D. $100~{\rm g~m}^{-3}$



Answer: B



10. Mass is measured by using a_____.

A. spring balance

B. physical balance

C. measuring jar

D. metre scale

Answer: B



11. 1kg $m^{-3} = \dots \dots$

A. 1000 g
$$m^{\,-3}$$

B.
$$\frac{1}{1000}$$
 g m⁻³

C. 1000 kg m $^{-3}$

D.1 $\mathrm{g\,m}^{-3}$

Answer: D

Watch Video Solution

12. The distance between two cities A ad B in a map is 7.5 cm. the scale taken for drawing this map is 1cm=1,50,000m. The actual distance between A and B is km.

A. 1125000

B. 20000

C. 200

D. 1125

Answer: D

13.
$$1m^3 = ?L$$

A. 1

B. 10

C. 100

D. 1000

Answer: D



14. The whole length of a metre scale is divided into 500 equal parts then the smallest measurement that can be measured by using the scale is _____.

A. 0.5m

B. 0.005m

C. 50mm

D. 2mm

Answer: D

Watch Video Solution

15. Which among the following is (are) the units(s) of pressure?

A. Nm^{-2}

B. $gwtcm^{-2}$

C. $kgwtm^{-2}$

D. All of the above

Answer: C



16. Which of the following statement(s) is/are incorrect ?

A. The weight of a body can be zero.

B. The weight of a body can be greater than zero.

C. The mass of a body can be zero.

D. Both (a) and (c)

Answer: C

Watch Video Solution

17. Volume of an irregular shaped solid can be measured

by using a____

A. density bottle

B. spring balance

C. measuring cylinder

D. physical balance

Answer: C

Watch Video Solution

18. Which of the following statement is incorrect

A. As the temperature of a gas increases, its volume increases.

B. As the temperature of a gas increases, its density decreases.

C. As the temperature of a gas increases, its density

increases.

D. Both (a) and (c)

Answer: B

Watch Video Solution

19. An atlas of a country is shown in the figure, the

distance between cities A and B is_____



- A. 35km
- B. 3500m
- C. 350km
- D. Both (a) and (c)

Answer: C



20. Arrange the following steps in a sequence of find the vlume oof an irregular shaped solid body.

(A). The irregular shaped solid is tied with the thread and is lowered into the measuring cylinder.

(B). A measuring cylinder with graduations in millilitre or cubic centimetrer is taken.

(C). The level of water in the measuring cylinder rises after immersion of the solid. (say V_2)

(D) First, it is filled with water to a certain level of volume. (say V_1)

(E). The volume of the stone is equal to the difference between the volume of the water before and after the immersion of the stone. $(V_2 - V_1)$. A. ABCDE

B. BCADE

C. BDACE

D. EDACB

Answer: C

Watch Video Solution

21. Density of the material of a paper is given a 0.5 g cm^{-3} . The mass of the paper is 1 g and its length and breadth are 10 c and 5 cm, respectively. Arrange the following steps in a sequence to find the thickness of the paper.

(A). The Othickness of the paper is $\frac{Volume of the paper (m)}{Vlume of the paper (V)}$ (B) The density (d) of the material of the paper is $= \frac{Mass of the paper (m)}{volume of the paper (V)}$ (C). then the volume (V) o the paper $= \frac{Mass of the paper (m)}{Density (d) of the paper}$ (D). The volume (V) of the paper is=length × breadth × thickness of the paper.

A. The thickness of the paper is $= \frac{\text{volume (V)of the paper}}{\text{length } \times \text{ breadth}}$

B. The density (d) of the material of the paper is

 $= \frac{\text{mass of the paper(m)}}{\text{volume of the paper(V)}}$



Answer: D

Watch Video Solution

Test Your Concepts Very Short Answer Type Questions Match The Column

1. Match the entries given in Column A with the appropriate ones in Column B.

	Column A				Column B
Α.	Science	()	a.	Gravitational pull by Earth
B.	The volume of cube of side 'S'	()	b.	Due to convection current
C.	CGS unit of temperature	()	c.	The atoms packed within the substance
D.	Density of liquid	()	d.	Latin word 'Scire'
E.	Weight	()	e.	S ³
E	Liquids heat up	()	f.	Mass of liquid of volume V Mass of water of same volume V
G.	The difference in densities of substances	()	g.	Degree centigrade (°C)

Watch Video Solution

Match the entries given in Column A with the appropriate ones in Column B.

	Column A				Column B
Α.	1 g cm ⁻³	()	a.	1000 kg m ⁻³
B.	Convection current	()	b.	cm ³
C.	Volume	()	c.	Measurement of large distances
D.	Triangulation method	()	d.	Mass/volume
Ε.	Mass	()	e.	Change in density
F.	Density	()	f.	kg

Watch Video Solution

Test Your Concepts Very Short Answer Type Questions

1. Match the entries given in Column A with the appropriate ones in Column B.

	Column A				Column B
Α.	Physics	()	a.	To detect fracture in a bone
В.	X-rays	()	b.	1000 litres
C.	Aim of science	()	c.	Weight of body of mass 10 ⁻³ g
D.	The volume of 1 m ³ is	()	d.	Triangulation method
E.	1 dyne	()	c.	Convection current in air
F	Ventilation in a room	()	f.	Deals with interaction between matter and energy
G.	The distance between the moon and the Earth	()	g.	To find cause of an event

Watch Video Solution

2. What is the meaning of the word science?

Watch Video Solution



irregular solid.

Watch Video Solution

6. How is the volume of a regular solid determined?

Watch Video Solution
7. What is the consequence of change in density of liquids
with temperature?
Watch Video Solution

8. Name the method used to measure the distance between stars.



9. Define one kilogram weight.

Watch Video Solution
10. Define one gram force.
Watch Video Solution
11. Will mass of the solid body changes with change in its

volume?

Watch Video Solution
12. What is convection current?

Watch Video Solution
13. What are the common multiple and submultiple units of mass? Express them in terms of kg.
Watch Video Solution
14. Write CGS units o area, force, temperature and heat.
Watch Video Solution

15. What are the five main branches of Physics?

Watch Video Solution
16. Explain the steps through which science is applied.
Watch Video Solution
17. What causes the formation of the land and sea breezes.?
Watch Video Solution

18. How does the weight of a body change with the change in altitude?



20. How does the density of a solid change with minor

changes in temperature?

Watch Video Solution

21. What is a systematic error ? How can it be removed ?

Watch Video Solution

Test Your Concepts Short Answer Type Questions

1. The mass of a bottle filled with water is found to be 150 g. the mass of the empty bottle is 50 g ad the external vlume o the container is 125 cm^3 . Find out the density of the material of the bottle.



2. Ten identical metalic balls of density 5 g cm^{-3} when dropped inito water, the volume of the water diplaced is found to be 500 cm^3 . Determine the mass of each metallic ball.



3. When 20 drops of water is added to a graduated cylinderical container filled with water, the level of the liquid rises from 10 ml to 20 ml. Calculate the mass of each water drop.

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5. Give few examples from day to day life, where phyics is

employed.

Watch Video Solution

6. How is the volume of a regular solid determined?

Watch Video Solution

7. A density bottle weighs 100 g when filled with liquid and 80 g when filled with water. If the weight of an empty density bottle is 20 g, find the density of the liquid.



8. The volume fo mercury and water is 50 ml each. What is

the ratio of their mass, if their densities are in the ratio

68:5?



MARINE AND A CONTRACT OF A DESCRIPTION



10. What is a density bottle?

Watch Video Solution

11. What are the uses of tringulation method?

Watch Video Solution

12. Explain how the ventilation in a room is possible

Watch Video Solution

13. Explain why a flame point is in the upward direction.

Watch Video Solution
14. Find thhe mass of 1 m^3 of gold in kg when density of gold is 19 g cm^{-3} .
Watch Video Solution
15. If 5 kg of glycerine occupies $0.004m^3$, determine the density in g cm ⁻³ and kg m ⁻³ .
Watch Video Solution

16. Take two cubes each of side 4 cm made up of iron and aluminium. Why is there difference in masses of two cubes inspite of having same volume.



2. Describe how triangulation method is used to measure

large distnaces, by taking suitable example.





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4. When half of the total volume of an empty beaker of mass 100 g is filled with water, its mass is found to be 500 g and when the remaining volume of the beaker is filled with a liquid, its mass is found to be 1 kg. Calculate the density of the liquid.



5. Bring out the differecnes between the mass and the

weight of a body.



7. Test tube A contains 10 ml of liquid X and test tube B contains a liquid Y of volume 50 ml. the ratio o the density of Y to X is 2:5. Compare the mass of liquid A and

Β.

- **8.** Wriite CGS unit and SI unit for given following physical quantities:
- (a) Area, (b) Volume
- (c) Density, (d) Velocity speed
- (e) Acceleration, (f) force
- (g) Weight, (h) pressure
- (i) Temperature, (j) Energy.



Concept Application Level 1

1. SI unit of volume is cubic metre.







4. SI unit of weight is Newton.

Watch Video Solution

5. Mass of a body cannot be zero.

Watch Video Solution

6. As the temperature of gases increases, its density also

increase.

Watch Video Solution

7.
$$kg = 1^{-1}$$
 is a unit of density.

Watch Video Solution

8. Triangulation method is used for measuring very long

distances.

Watch Video Solution
9. Density of keerosene is less than the density of water.
Watch Video Solution
Concept Application Level 1 Fill In The Blanks
1. The method of measuring distance by forming a is

called tringulation method.





5. What is the Si unit of energy?

Watch Video Solution
6. Mass of 1 ml water isg.
Watch Video Solution
7. is the force with which the earth pulls a body
towards its centre.
O Watch Video Solution
8. Density of a liquid can be measured by using
Vatch Video Solution

1. An atlas of India is drawn by taking scale 10 cm=15000 km. If the actual distance between the cities of Bhopal and cochin is 1500 km, the distance between the two places in the atlas will be____cm.

Watch Video Solution

 Sea breeze is due to thhe change in density of air with_____.

A. change in temperature

B. change in pressure

- C. change in wind
- D. change in wheather condition

Answer: A

Watch Video Solution

3. Density of a liquid can be measured by using_____.

A. spring balance

B. measuring cylinder

C. density bottle

D. physical balance

Answer: C



Answer: A



5. If the area of a square field is 100 cm^2 , then the length

of the side is_____

A. 1cm

B. 1m

C. 0.1m

D. 10m

Answer: C



6. The density of water at $4^{\circ}C$ is:

A. $1gcm^{-3}$

- B. $1000 kg cm^{-3}$
- C. $1000gcm^{-3}$
- D. $1 kgcm^{-3}$

Answer: A

Watch Video Solution

7. Which among the following is the unit of density?

A. kgm^{-3}

B. gm^{-3}

C.
$$kgcm^{-3}$$

D. All of the above

Answer: D



8. Unit of weight is (are)____.

A. N

B.gf

C. kg f

D. All of the above

Answer: D



9. A ball is placed between two wooden blocks as shown in the figure. The volume of the sphere is.....



A. $6.54cm^3$

 $\mathsf{B}.\,1.15 cm^3$

 $\mathsf{C.}\,2.14cm^3$

 $\mathsf{D}.\,2.14 cm^3$

Answer: B
Watch Video Solution
10. The density o a substance in CGS system is 4 g cm^{-3} .
Its density in SI system is kg m^{-3} .
A. 4
B. 40
C. 400
D. 4000

Answer: D



11. The volume of a body having density 1 g cm^{-3} and

mass 100 g is $___ cm^3$.

A. 100

B. 50

C.
$$\frac{1}{100}$$

D. $\frac{1}{50}$

Answer: A



12. A cylinder of height 1 m and radius 10 cm is fully filled

with water, the volume of water is $___m^3$.

A. 3.14

B. 0.314

C. 0.0314

D. 314

Answer: C

Watch Video Solution

13. 1000 kg of water occuplies

A. 11

B. 0.51

C. 10001

D. 0.75KI

Answer: C



14. 1 hectare =
$$1000m^2$$

A. 10^{2}

 $\mathsf{B}.\,10^3$

 $\mathsf{C}.\,10^4$

D. 10^{5}

Answer: C



15. $1 \text{ kg m}^{-3} = \dots \dots \text{ g cm}^{-3}$

A. 100

B. 1/100

C. 1000

D. 1/1000

Answer: D



16. If the smallest measurement that can be measured by

using a scale is 0.1 mm, then the length of 1 m in the scale

is divided inot _____ equal parts.

A. 1000

B. 5000

C. 10000

D. 50000

Answer: C



17. Which of the following scale gives more accurate reading?

A. One metre in a scale is divided into 1000 equal

parts.

- B. One cm in a scale is divided into 100 equal parts.
- C. One mm in a scale is divided into 2 equal parts.
- D. One mm in a scale is divided into 5 equal parts.

Answer: B

D Watch Video Solution

18. Which among the followig is the unit of heat?

A. Calorie

B. Kelvin

C. Degree centigrade

D. All of the above

Answer: A

Watch Video Solution

19. Which of the following statement is wrong?

A. The mass of a body can be measured by using a

beam balance.

B. The weight of a body can be measured by using a

spring balance.

C. The mass of a body can be measured by using a

spring balance

D. The weight of a body cannot be measured by using

a beam balance.

Answer: C

Watch Video Solution

20. The width of a stream is determined with the help of triangulation method. Arrange the following steps in a sequence to explain the process to find the width.(A) Fix a certain stationary object like tree on the other bank of the stream.

(B) Take two pins $(P_1 \text{ and } P_2)$ and fix P_1 and P_2 at one vertex of the drawing board such that pins and tree are on the same straight line.

(C) Select two positions (say A and B) on the ground and the horizontal distance between them is noted. Let ir be "D m.

(D) Repeat the same process at position 'B' with other two pins (P₃ and P₄) at other vertex of the drawing board.
(E) Take a drawing board and paste a white paper on it.
(F) Fix the board at position A' such that one edge is directed along AB.

(G) Now, produce two straight lines and let them meet at point 'P'. Complete the triangle with P. P_1 and P_2 Measure the distance between P_1 and P_3 say d. Then $\frac{D}{d}$ gives the actual distance on ground for every one em on the drawing board.

(H) Now the width of the river will be equal to the distance from midpoint of P_1 and P_3 (let it be P_5 and P multiplied by $\frac{D}{d}$.

A. EACFBDGH

B. EABCDFHG

C. EDCBAFGH

D. ABCDEFGH

Answer: A


21. A density bottle weighs 120 g and 100 g when filled completely with oil ad water, respectively. If the weight of a empty density bottle is 40g, then arrange the following steps in sequence meant to solve the problem to get the density of oil

(A). The density of the oil

D _ Mass of the oil	$_$ Mass of the oil
$D = \overline{\text{Weight of the water}}$	Mass of the water
$_$ Weighht of oil $_$	W_3-W_1
Weight of the water	$\overline{W_2-W_1}$

(B). Let the weight of the bottle +oil= $W_3=120g$

and the weight of the bottle+water = W_2

100g, where bottle is completely filled with liquid, i.e., oil or water.

(C). Let the weight of the empty bottle $= W_1 = 40g$

(D). The the weight of the oil ad water would be equal to $(W_3 - W_1)$ and $(W_2 - W_1)$, respectively.

A. CBDA

B. ABCD

C. BADC

D. DCBA

Answer: A

Watch Video Solution

Concept Application Level 1 Match The Column

1. Match the entries given in Column A with the appropriate ones in Column B.

	Column A				Column B
A.	Standard measure	()	a.	Unit
B.	Physics	()	b.	Mass of liquid of volume (V)
					Volume (V) of water
C.	1 cubic centimeter	()	c.	Alters from place to place
D.	The acceleration due to gravity	()	d.	Weight of a body of mass 0.1 kg
E.	Density of liquid	()	e.	External behaviour of matter
E	1 N	()	f.	1 ml.

Watch Video Solution

Match the entries given in Column A with the appropriate ones in Column B.

Ť.	Colu	imn A	1880			Col	umn B		
A	Physics		() a	. Study	y of p er	roperties of		
B.	0.1 tonr	ıe	() ł	o. Mass				
C.	Beam ba	llance	() (. 0.00	lg cr	n ⁻³		
D.	1 kg m ⁻	a man	() (l. 1 qu	intal			
	Wat	ch Vie	deo S	Solu	tion				
Э									

appropriate ones in Column B.

-					
	Column A				Column B
Α.	The volume of stone	()	a.	kgf or kgwt
В.	The SI unit of weight	()	b.	Mass
C.	$\frac{1}{10,00,000} \ kg$	()	c.	Triangulation method
D.	Common balance	()	d.	Cold water sinks in and hot water rises up
D. E.	Common balance Density bottle	()	d. c.	Cold water sinks in and hot water rises up Difference in volume of water before and after immersion of stone
D. E.	Common balance Density bottle Height of a mountain	(())))	d. c. f.	Cold water sinks in and hot water rises up Difference in volume of water before and after immersion of stone 1 milligram

Watch Video Solution

Concept Application Level 2

1. A stone of density 5×10^3 Kg m_{-3} and mass 2 kg is immeresed into a liquid, inside a graduted cylinder. The reading on the graduated cylinder is $1000cm^3$ before the stone is immersed into it, the reading after the stone is immersed in it is_____ cm^3 .

A. 14000

B. 500

C. 5000

D. 1400

Answer: D



2. The weight of the givensolid cylinder rodis 2512 N.

The density of the body is _____ Kg m_{-3} .

 $(takeg = 10ms_{-2})$



A. 2512

 $\mathrm{B.}\,25\times12$

 $C. 10^{3}$

D. 10^{6}

Answer: D



3. The mass of a density bottle when it is filled with a liquid of density 3000 kg m_{-3} is 400 g and the mass of the bottle when it is filled with water is 200 g. The mass of the empty density bottle is _____ g.

A. 10

B. 100

C. 50

D. 500

Answer: B



4. $1 \text{ g m}^{-3} = \dots \text{ kg cm}^{-3}$

A. 10^9

 $\mathsf{B.}\,10^6$

C. 10^{-6}

D. 10^{-9}

Answer: D

Watch Video Solution

5. In a particular scale A, one metreis divided into 500equal parts and in scale B one cm is divided into 5

equal parts and in scale C one mm is divided into 2 equal

parts, then the accuracy of _____.

A. A > B > C

- $\mathsf{B.}\, A = B < C$
- $\mathsf{C}.\, A=B>C$
- $\mathsf{D}.\, A=B=C$

Answer: B

Watch Video Solution

6. A wire is wound over a pencil and placed over a scale as shown in the figure. The diameter of the given wire is



A. 1.45cm

B. 2.9mm

C. 2.9m

D. 1.45mm

Answer: D



7. If the radius of a sphere is doubled, then the density of

the sphere is ______ times its original value.

A. 1/2

B. 2

C. 4

D. 1/8

Answer: D

Watch Video Solution



A paper cutting is placedon a graph as shownin the figure, each on he X and Y axes represens a distance of 2 cm. The area of the paper cutting is $___Cm^2$.

A. 378

B. 186

C. 312

D. 156

Answer: C



9. The mass of an empty density bottle is 50 g. When it is completely filled with water, its mass is found to be 100 g and when it is completly filled with aliquid, its mass is 150 g. The density of the liquid is ______ kg m^{-3} .

A. 2

B. 2000

C. 3.5

D. 3500



The density of the solid cylindrical bar shown in the figure

is $5 imes 10^3$ kg $\,m^{-3}$. The weight of the bar is _____ N. (take g=10 m s^2

A. 157

B. 1570

C. 320

D. 3.2

Answer: A

Watch Video Solution

11. The readings in a graduated cylinder are $10cm^3$ and $20cm^3$, respectively, before and after a metal alloy piece of

mass 200 g is put in it. Thedensity of the material of the

alloy is _____kg m^{-3}

A. $2 imes 10^3$

B. $2 imes 10^4$

C. $2 imes 10^5$

D. $2 imes 10^6$

Answer: B



12. A stock of identical coins are placed on a scale as shown in the figure. The thickness of a coin is _____



A. 1.8cm

B. 18mm

C. 1.8mm

D. 0.18m

Answer: C



13. If the density of a sphere is reduced to 1/8 of its original value, then the radius of the sphere is _____

times its original radius (assume that there is no change

in mass). S

A. 2

B. 4

C.1/2

D. 1/4

Answer: A

Watch Video Solution



A paper cutting is placed on a graph a as shown in the figure, each division on the X and Y axes represents a distance off 1 cm. The area of the paper cutting is $___ cm^2$.

A. 100

B. 112

C. 93

D. 96

Answer: C



15. Density of the material of a paper is $0.4g \ cm^{-3}$. The mass of the paper is 0.5 g and its length and breadth are 10 cm and 4 cm, respectively. Determine the thickness of the paper.



16. If the length, breadth and height of a cuboid are all increased to 'n'times their original values of 'n'.



17. A wooden block is tied to a metallic rod of mass 100 g and immersed completely in water. When the displaced water is collected in a measuring jar, the volume of the liquid displaced is found to be 400 ml. If the density of the metallic rod is 5 g cm,⁻³ and the mass of the wooden block is 300 g, determine the density of the wooden block. 18. A student was given a task to find the destiny of a cube whose mass and side are 100 g and 5 cm, respectively. What is his answer?

Watch Video Solution

19. A physics student was given a 400 pages book and a metre scale and asked to measure the thickness of the paper in the book. Explain how can he measure it.



20. A wire wound over a rod and placed over a scale, as shown in figure. Calculate the radius of the wire.



21. A student took a spring balance calibrated in gf. He then suspended an object of mass 1 kg to the spring balance. Determine what would be the reading of the spring balance.



22. A physics scholar took two spring balances S_1 and S_2

that are calibrated on the surface of the Moon and the

Earth, respectively. He then weight a body using both S_1 and S_2 at a given place on the surface of the Earth. He determined the ratio of the readings. What is the ratio?



23. A scientist took a physical balance and an object of weight 10 kgwt from the Earth to the surface of the Moon. There on the Moon, if he placed this 10 kgwt object on one of the pansof physical balance, find the mass of the object required to balance the physical balance.



24. The change in volume of a gas with change in temperature is plotted on a graph, as shown in he figure. Calculate the ratio of density at $50^{\circ}C$ and $100^{\circ}C$





Concept Application Level 3

1. Ram took an empty density bottle and a weighing machine. He measures the density bottle and a weighing machine. He measures the empty bottle and found it to be 40 .g. He then completely filled it with water and weighed it to be 100 g. With this data can he calculate the capacity of the density bottle? If so, what is its capacity

Watch Video Solution

2. The densities fo three substances A, B and C are given below. If equal voumes of A, B and C are taken, arrange

then in increasing order of their masses.





3. Triangulation method is used to determine the distance between two places A and C. A triangle obtained to a reduced scale is as shown below The ratio of the actual distances from C to another place B: and A to B is 5. Determine the distance between A and C. The actual distance between B and C is 20 km.



4. The weight of a body on the earth is 500 gf. The volume of water displaced when it is immersed in water $in250cm^3$. Determine the density of the material fo the body.

5. Ram took an empty ballon of mass 5 g and filled it with air. He then measured the mass of ballon filled with air tube to be 5.05 g. He considered the density of the air filled inside th ballon as $1.5 \text{ kg } m^{-3}$ and found the volume of air present inside the ballon. Find his answer.



6. Two identical containers A and B are filled with two different liquids of equal masses. The level of the liquid in container A is found to be one-fourth of the level of the liquid in container B. What is the ratio of thedensity of two liquids? If the density of he liquid in the container A

is 2 " g " cm^{-3} , then find the density of the mixture of the

two liquids.



7. Three places A,B and C form the vertices of a triangle. A triangle to reduced scale is drawn as shown below. If the actual distance between A nd C is 200 km, determine the

actual distance from Ato B and B to C,.



8. Two persons A and B are 40 m apart. Triangulation method was used to measure the distance obtained is place C and the person A. The triangle obtained is as

shown. The triangle is drawn from the positions of A and B and the vertices P, Q and R correspond to the position of A, B and the palce C, respectively. Determine the distance between the person A and the place C.



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9. The mass of an empty density bottle is 50 g. When it is completely filled with water, its mass is found to be 100 g and when it is completly filled with aliquid, its mass is 150 g. The density of the liquid is _____ kg m^{-3} .



10. Ram and Shyam were given cube A and cube B both having same mass, respectively. The side of cube A is three times that of the cube B. Ram and Shyam found the densities of A and B. What is the ratio of densities of A and B.





A paper cutting is placedon a graph as shownin the figure, each on he X and Y axes represens a distance of 2 cm. The area of the paper cutting is $___Cm^2$.

A. 378

B. 186

C. 312

D. 156

Answer: C



2. A wire is wound over a pencil and placed over a scale as shown in the figure. The diameter of the given wire is



A. 1.45cm
B. 2.9cm

C. 2.9m

D. 1.45mm

Answer: D

Watch Video Solution

3. Match the following

	Column A		Column B
(A)	Measuring cylinder	(a)	kgf, gf
(B)	Gravitational units of weight	(b)	ml or cc
(C)	1 g cm ⁻³	(c)	Zero weight
(D)	Zero gravitational force	(d)	1000 kg m ⁻³

A. A-b, B-a, C-d, D-c

B. A-b, B-d, C-a, D-c

C. A-c, B-d, C-b, D-a

D. A-a, B-c, C-b, D-d

Answer: A



4. Assertion (A) : The weight of a body changes with altitude.

Reason (R): The accelaration due to gravity changes with altitude.

A. Both A and R are true and R is the corect

explanation of A.

B. Both A and R are true and R is not the corect

explanation of A.

C. A is true but R is false.

D. Both A and R are false.

Answer: A



5. Assertion (A): The liquid displaced by a solid cube of a side 3 cm when completely immersed in the liquid is more than displaced by a solid cube of side 2 cm. Reason (R) : The liquid displaced by a solid increases with increase in the volume of the solid. A. Both A and R are true and R is the corect

explanation of A.

B. Both A and R are true and R is not the corect

explanation of A.

C. A is true but R is false.

D. Both A and R are false.

Answer: A



6. The densities of two liquids A and B are in the ratio 15:2 If their masses are equal, write the following steps

in a sequential order to determine the ratio of their volumes.

A. bacd

B. bcda

C. adbc

D. abcd

Answer: A

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7. Density of water is $(10 \, \mathrm{g \, cm^{-3}} \, / \, 1 \, \mathrm{g \, cm^{-3}}).$

A. adcb

B. cbda

C. abdc

D. adbc

Answer: D



8. Which of the following statements is/are incorrect

A. The weight of a body can be zero.

B. The weight of a body can be greater than zero.

C. The mass of a body can be zero.

D. Both a and c

Answer: C



9. The mass of an empty density bottle is 50 g. When it is completely filled with water, its mass is found to be 100 g and when it is completly filled with aliquid, its mass is 150 g. The density of the liquid is ______ kg m^{-3} .

A. 2

B. 2000

C. 3.5

D. 3500

Answer: B



10. The whole length of a metre scale is divided into 500 equal parts then the smallest measurement that can be measured by using the scale is _____.

A. 0.5m

B. 0.005m

C. 50mm

D. 2mm

Answer: D

Watch Video Solution

11. Which among the following is (are) the units(s) of pressure?

- A. Nm^{-2}
- B. $gwtcm^{-2}$
- C. $kgwtm^{-2}$
- D. All of the above

Answer: D

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12. In a particular scale A, one metreis divided into 500equal parts and in scale B one cm is divided into 5

equal parts and in scale C one mm is divided into 2 equal

parts, then the accuracy of _____.

A. A > B > C

- $\mathsf{B.}\, A = B < C$
- $\mathsf{C}.\, A=B>C$
- $\mathsf{D}.\, A=B=C$

Answer: B

Watch Video Solution

13. If radius of the earth is doubled without change in its mass, what will be the length of the day?

A. 1/2

B. 2

C. 4

D. 1/8

Answer: D

Watch Video Solution



14.

The density of the solid cylindrical bar shown in the figure is $5 imes10^3$ kg m^{-3} . The weight of the bar is _____ N. (take g=10 m s^2

A. 157

B. 1570

C. 320

D. 3.2

Answer: A

Watch Video Solution

15. What is the distance OA for the square shown in figure

A. 35km

:-

B. 3500m

C. 350km

D. Both a and b

Answer: C

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Assessment Test Test 2



A paper cutting is placed on a graph a as shown in the figure, each division on the X and Y axes represents a distance off 1 cm. The area of the paper cutting is $___ cm^2$.

A. 100

B. 112

C. 93

D. 96

Answer: C



2. A stock of identical coins are placed on a scale as shown

in the figure. The thickness of a coin is _____



A. 1.8cm

B. 18cm

C. 1.8mm

D. 0.18m

Answer: C



3. Match the following

	Column A		Column B
(A)	Liquid displaced by a solid	(a)	10 ⁵ g
(B)	1 quintal	(b)	10 ⁹ mg
(C)	1 tonne	(c)	Unit of pressure.
(D)	kgwt m ⁻²	(d)	Volume of the solid.

A. A-a, B-b, C-c, D-d

B. A-d, B-c, C-b, D-a

C. A-d, B-a,C-b, D-c

D. A-d, B-b, C-c, D-a

Answer: C



4. Assertion (A): The masss of $150m^3$ of iron is greater than the mass of 150 m⁽³⁾ of wood.

Reason (R): The densiy of iron is less than the density of wood.

A. Both A and R are true and R is the correct explanation of A.

B. Both A and R are true, but R is not the correct

explanation of A.

C. A is true but R is false.

D. Both A and R are false.z

Answer: C

Watch Video Solution

5. Assertion (A) : The magnitude of volume of any liquid is equal to the magnitude of its mass what measured in CGS system. Reason (R) : Density of the liquid = mass of the liquid \times

volume of the liquid.

A. Both A and R are true and R is the correct

explanation of A.

B. Both A and R are true, but R is not the correct

explanation of A.

C. A is true but R is false.

D. Both A and R are false.z

Answer: D



6. Assertion (A): The liquid displaced by a solid cube of a side 3 cm when completely immersed in the liquid is more than displaced by a solid cube of side 2 cm.

Reason (R): The liquid displaced by a solid increases with increase in the volume of the solid.

A. adbc

B. cbad

C. bacd

D. bdca

Answer: C



7. The unit of force in SI system is newton and it is given as 1 newton = $1kgms^{-2}$. In CGS system its unit is dyne and it is given as 1 dyne = 1 g cm s^(2). Arrange the following steps in a sequential order to relate the SI unit and CGS unit of force.

(a) Write the conversations of kg and m, into g and cm, respectively.

(b) Substitute the conversations in 1 newton = $1 kgms^2$

Write the relation between 1 newton and dyne.

(d) Write in place of 1 g cm s^(-2) as 1 dyne

A. acbd

B. abdc

C. bdac

D. cdab

Answer: B



8. Which of the following statement is wrong?

A. The mass of a body can be measured by using a

beam balance.

- B. The weight of a body can be measured by using a spring balance.
- C. The density of a body can be measured by using a

spring balance.

D. The weight of a body cannot be measured by using

a beam balance.

Answer: C

9. The mass of a density bottle when it is filled with a liquid of density 3000 kg m_{-3} is 400 g and the mass of the bottle when it is filled with water is 200 g. The mass of the empty density bottle is _____ g.

A. 10

B. 100

C. 50

D. 500

Answer: B



10. If the smallest measurement that can be measured by using a scale is 0.1 mm, then the length of 1 m in the scale is divided inot ______ equal parts.

A. 1000

B. 5000

C. 10000

D. 50000

Answer: C



11. Which among the folloeing is the unit of energy?

A. joule

B. watt

C. newton

D. All of the above

Answer: A

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12. Which of the following scale gives more accurate reading?

A. One metre in a scale is divided into 1000 equal parts.

B. One cm in a scale is divided into 2 equal parts.

C. One mm in a scale is divided into 2 equal parts.

D. One cm in a scale is divided into 5 equal parts.

Answer: C



13. If the density of a sphere is reduced to 1/8 of its original value, then the radius of the sphere is ______ times its original radius (assume that there is no change in mass). S

A. 2

C.1/2

D. 1/4

Answer: A



14. The weight of the givensolid cylinder rodis 2512 N.

The density of the body is _____ Kg m_{-3} .

 $(takeg = 10ms_{-2})$



A. 2512

 $\mathrm{B.}\,25\times12$

 $C. 10^{3}$

D. 10^{6}

Answer: D

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