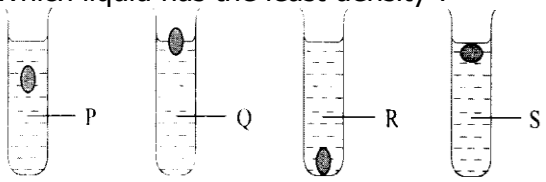
1. Which liquid has the least density ?



A. P B. Q
C. R D. S

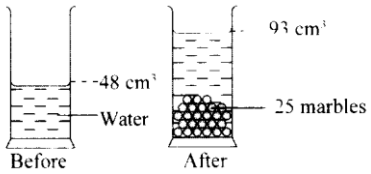
2. The following shows the data obtained by Hong Jun in an experiment.
Mass of measuring cylinder = 210g
Mass of measuring cylinder + liquid X =390g
Volume of liquid X = 120cm^3

Based on the data,determine the density of liquid X , in g / cm^3

A. 0.7 B. 0.9
C. 1.2 D. 1.5

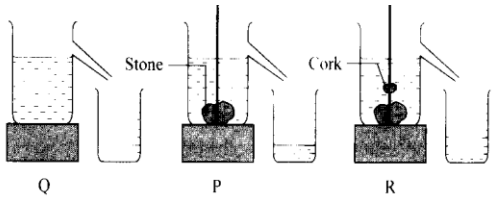
3. Find the average volume of a marble in cm3

A. 1.6
B. 1.8
C. 2.0
D. 2.2



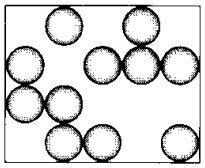
4. The correct sequence of this experiment is

A. P , Q , R B. P , R , Q
C. Q , P , R D. R , Q , P



5. This arrangement of particles could be found in

A. iron
B. steam
C. hydrogen
D. cooking oil



6. A solid cannot be compressed because its particles

A. are arranged very close together
B. cannot move freely
C. are very large
D. are very hard

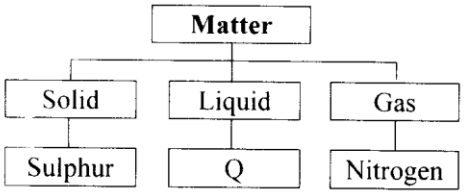
7. Which of the following substances will float in liquid K and L but sink in liquid J ?

liquid	**J**	**K**	**L**
density	0.9	1.7	3.5

	Substance	**density**
I	P	1.6
II	Q	1.2
III	R	2.8

A. I and II B. I and III
C. II and III D. I , II and III

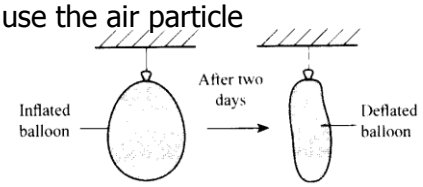
8. The dagram shows the classification of matter



Q represents

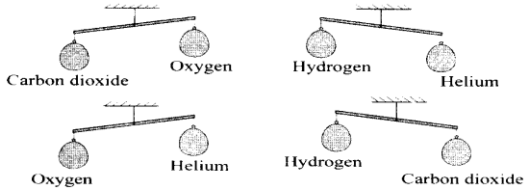
A. mercury B. steam
C. marble D. oxygen

9. The balloon becomes deflated after two days because the air particle



A. become smaller
B. can move freely
C. become less dense
D. diffuse through tiny holes on the surface of the balloon

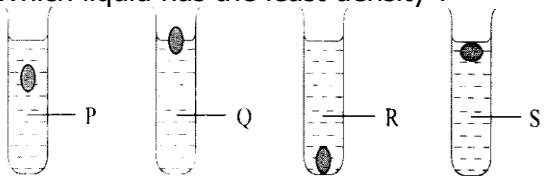
10. All the balloons are identical.The volume of gas in each of the balloons is 200cm^3.
Which of the following shows the correct sequence in order of increasing density ?



A. hydrogen,helium,oxygen,carbon dioxide
B. hydrogen,oxygen,helium,carbon dioxide
C. helium,hydrogen,oxygen,carbon dioxide
D. carbon dioxide,oxygen,helium,hydrogen

ANSWER:

1. Which liquid has the least density ?



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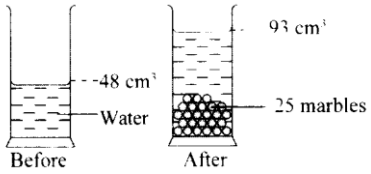
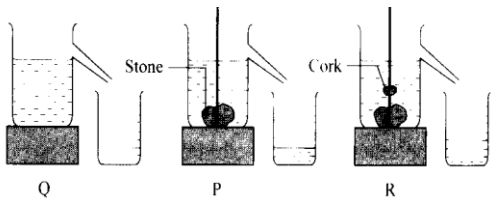


4. The correct sequence of this experiment is

A. P , Q , R
B. P , R , Q
C. Q , P , R
D. R , Q , P



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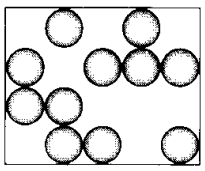

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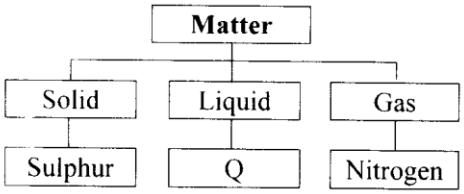
7. Which of the following substances will float in liquid K and L but sink in liquid J ?

liquid	**J**	**K**	**L**
density	0.9	1.7	3.5

	Substance	**density**
I	P	1.6
II	Q	1.2
III	R	2.8

A. I and II
B. I and III
C. II and III
D. I , II and III

8. The dagram shows the classification of matter



Q represents

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B. steam
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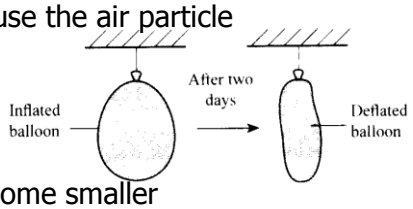

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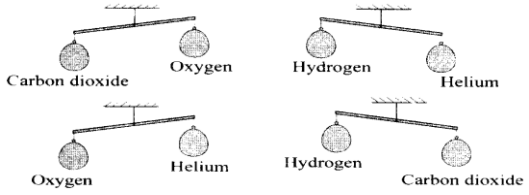
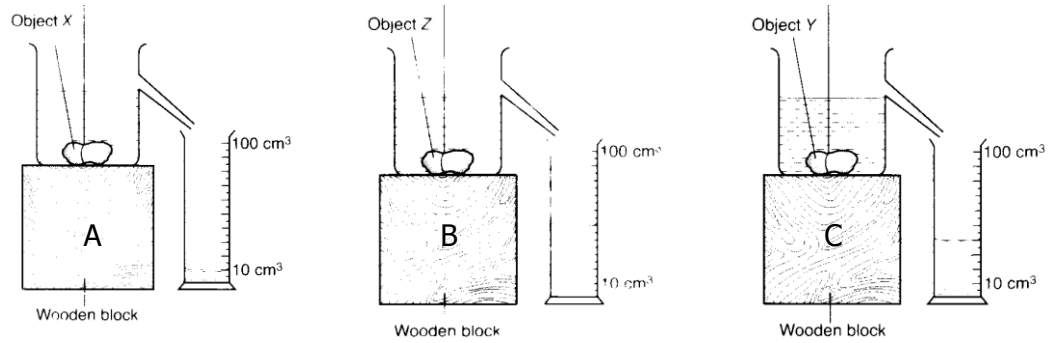


A. hydrogen,helium,oxygen,carbon dioxide
B. hydrogen,oxygen,helium,carbon dioxide
C. helium,hydrogen,oxygen,carbon dioxide
D. carbon dioxide,oxygen,helium,hydrogen

1. a) Figure shows the initial volume of water in each of the measuring cylinder.Objects P , Q and R are put in each of the measuring cylinder.Record the initial reading of water in the space provided above.



b) The student recorded the results as shown in table below.

Object	Mass (g)	Initial reading of water(cm^3)	Final reading of water(cm^3)	Volume of object(cm^3)	Density (g cm^3)
P	158				
Q	225				
R	2				

i) After putting the objects in each of the measuring cylinders ,the level of the water increase as given.
Measuring cylinder A = 70 cm^3 Measuring cylinder B = 45 cm^3 Measuring cylinder C = 48 cm^3

Find the volume of each object and record them in table given

ii) Culculate the densities of object P , Q and R and record your answers in table provided.

c) State the variables involved in this experiment

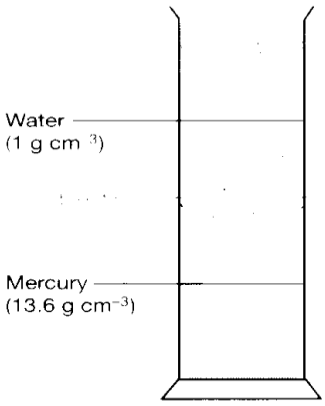
i) constant variable _____

ii) manipulated variable _____

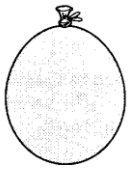
iii) responding variable _____

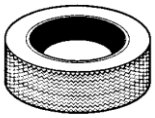
d) The student put the object P , Q and R in a measuring cylinder containing water and mercury as shown in the diagram.

a) Draw and label the positions of object P , Q and R in the diagram given.

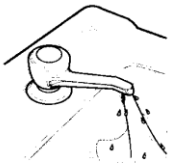


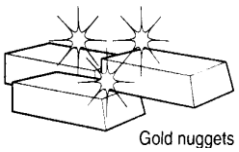
2. The diagram shows various substances. These substances can be classified into three groups X , Y and Z


Air in balloon

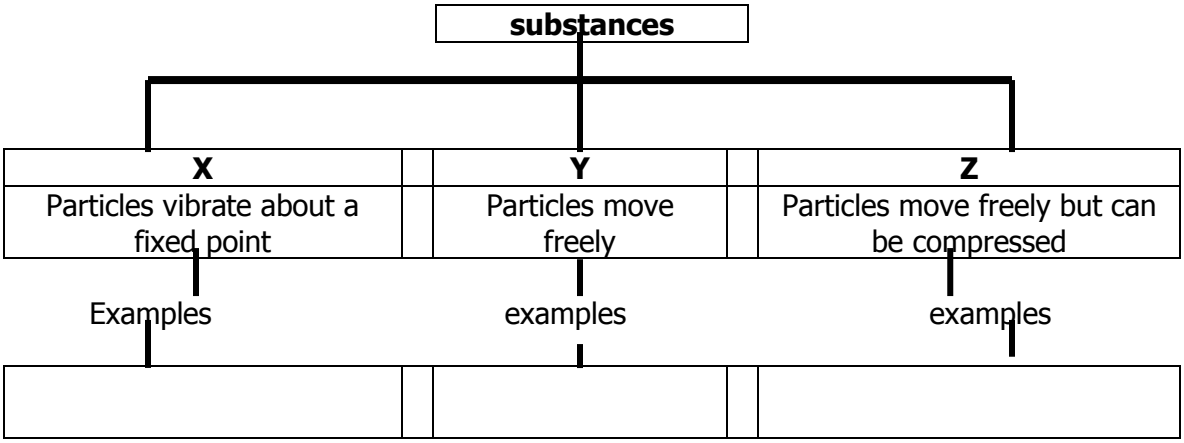

Rubber tyre


Gas in fire extinguisher


Tap water


Gold nuggets

a) Classified the substances into three groups



b) What do X , Y and Z represent ?

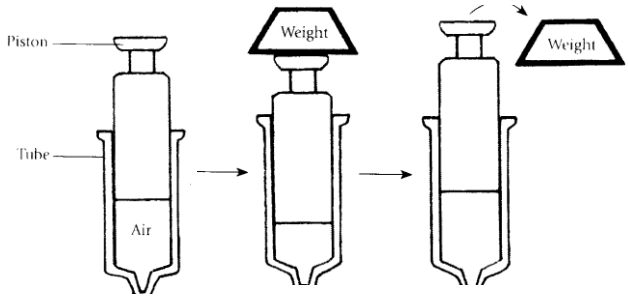
X : _____ Y : _____

Z : _____

c) Describe the shape and volume of Y

_____

3. The following diagram shows an investigation that is carried out by a group of students



a) i) What happen to the air in the tube when a weight is placed on the piston?

_____

ii) Explain what happens when the weight is removed .

_____

b) i) What happen when the same tesr is carried out with the tube filled with water ?

_____

ii) What can be observed when the weight is now placed on a block of steel

_____

c) i) Based on the answers in (a) and (b) , which material can be compressed ?

_____

ii) Give a reason for your answer in (c) (I)

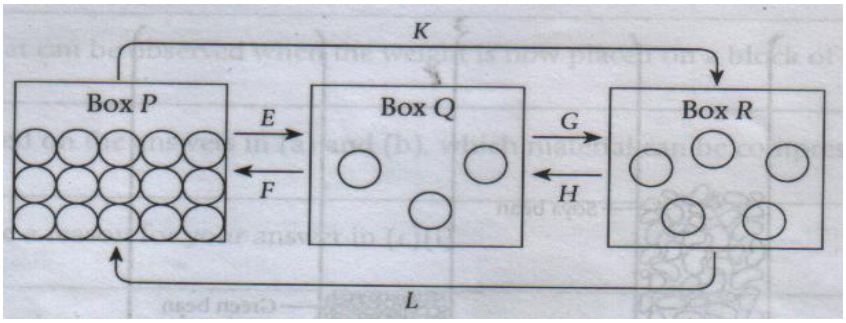
`

_____

d) What conclusion can be drawn from the investigation ?

_____

4. The picture shows the arrangement of particles in a solid , liquid and gas. The arrow represent changes of state of matter.



a) which box contains

i) a solid _____ ii) a liquid _____ iii) a gas _____

b) Identify the changes of state of matter in the diagram and state whether heat is released or absorbed

State of matter	Change of state	Whether heat is absorbed or released
E		
F		
G		
H		
K		
L		

c) Name the state of matter where the particles

i) can flow _____ ii) can be compressed _____

iii) have the most kinetic energy _____

d) State the change of matter in the condition

i) the ice melt _____ ii) to get salt from sea water _____

5. a) What is matter ?

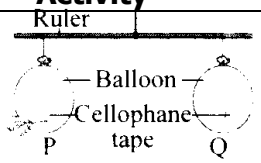
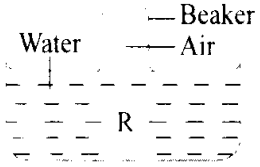
b) i) Is sound an example of matter ?

_____

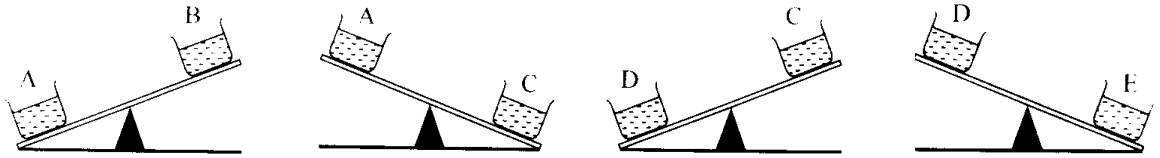
ii) Explain your answer in 1 (b) (I)

_____

c) The following activities are carried out. For each activity , state the expected observation and the suitable conclusion

Activity	Observation	Conclusion
(i)  Balloon P is pricked with a pin at the cellophane tape.		
i (ii)  The beaker is pushed to position R.		

d) The experiment below is carried out to compare the densities of five liquids A , B , C , D and E

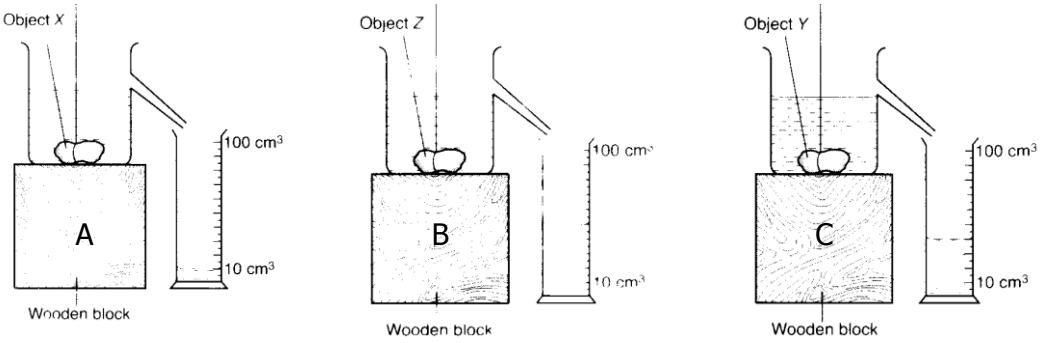


Give that volume of each liquid in each beaker is the same , what is the correct sequence in order of increasing density ?

_____

ANSWER:

1. a) Figure shows the initial volume of water in each of the measuring cylinder. Objects P , Q and R are put in each of the measuring cylinder. Record the initial reading of water in the space provided above.



b) The student recorded the results as shown in table below.

Object	Mass (g)	Initial reading of water(cm^3)	Final reading of water(cm^3)	Volume of object(cm^3)	Density (g cm^3)
P	48	**10**	**70**	**60**	**0.8**
Q	224	**10**	**45**	**35**	**6.4**
R	2	**10**	**48**	**38**	**19**

i) After putting the objects in each of the measuring cylinders ,the level of the water increase as given.
Measuring cylinder A = 70 cm^3 Measuring cylinder B = 45 cm^3 Measuring cylinder C = 48 cm^3

Find the volume of each object and record them in table given

ii) Culculate the densities of object P , Q and R and record your answers in table provided.

c) State the variables involved in this experiment

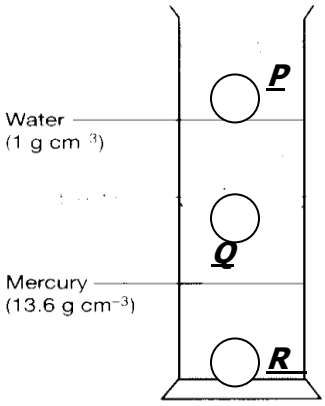
i) constant variable ***initial volume of water***

ii) manipulated variable ***mass of the object***

iii) responding variable ***final volume of water***

d) The student put the object P , Q and R in a measuring cylinder containing water and mercury as shown in the diagram.

a) Draw and label the positions of object P , Q and R in the diagram given.



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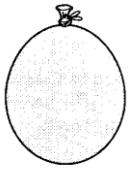
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Rubber tyre


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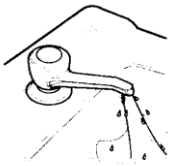
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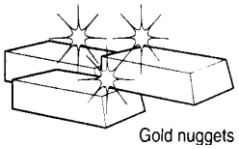
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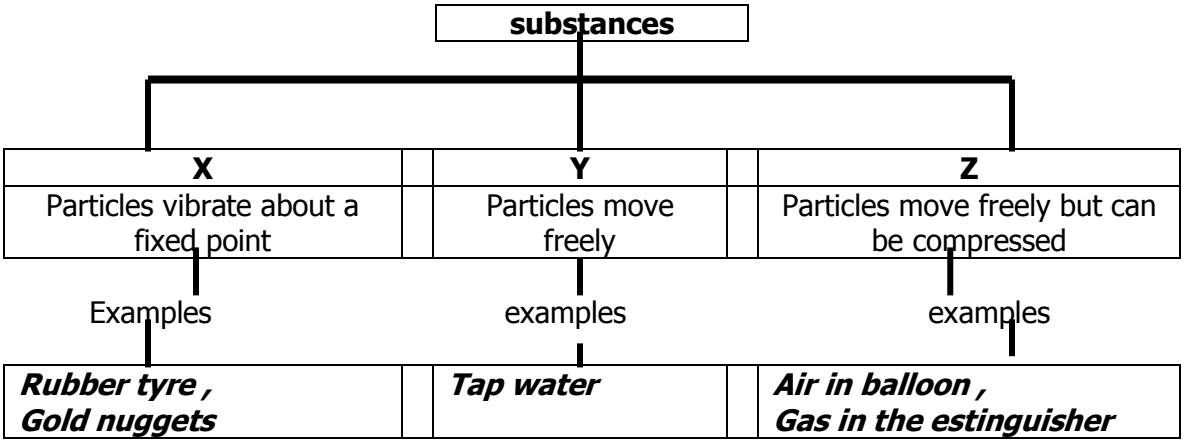


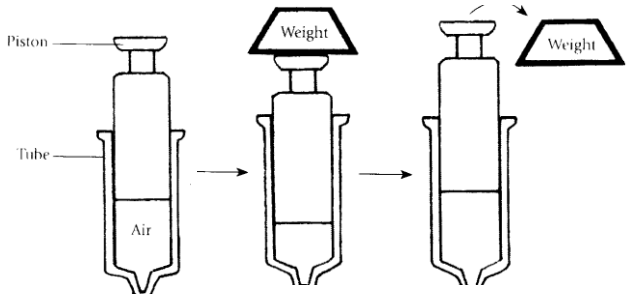
b) What do X , Y and Z represent ?

X : ***solid*** Y : ***liquid*** Z : ***gas***

c) Describe the shape and volume of Y

The shape follow the container and the volume is fixed

3. The following diagram shows an investigation that is carried out by a group of students



a) i) What happen to the air in the tube when a weight is placed on the piston?

The air is compressed

ii) Explain what happens when the weight is removed .

The piston spring backs to its original position

b) i) What happen when the same tesr is carried out with the tube filled with water ?

water cannot be compressed

ii) What can be observed when the weight is now placed on a block of steel

The block of steel cannot be compressed

c) i) Based on the answers in (a) and (b) , which material can be compressed ?

Only air can be compressed

ii) Give a reason for your answer in (c) (I)

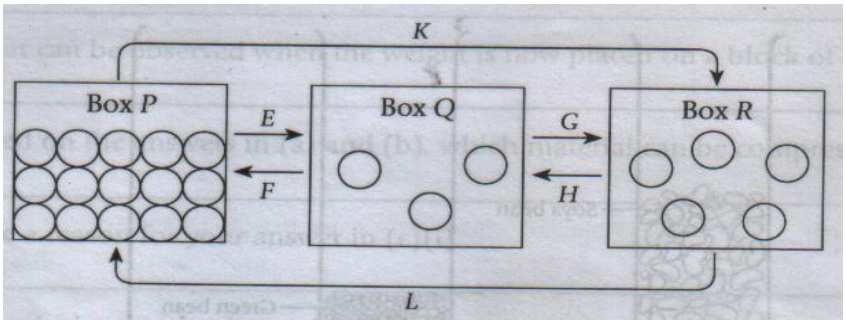
The particles in the air are far apart , therefore they can be compressed into a smaller space

`

d) What conclusion can be drawn from the investigation ?

Gases can be compressed. Solids and liquids cannot be compressed

4. The picture shows the arrangement of particles in a solid , liquid and gas. The arrow represent changes of state of matter.



a) which box contains

i) a solid ***P*** ii) a liquid ***R*** iii) a gas ***Q***

b) Identify the changes of state of matter in the diagram and state whether heat is released or absorbed

State of matter	Change of state	Whether heat is absorbed or released
E	***Sublimation***	***Heat is absorbed***
F	***Sublimation***	***Heaat is released***
G	***Condensation***	***Heaat is released***
H	***Evaporation/boiling***	***Heat is absorbed***
K	***Melting***	***Heat is absorbed***
L	***freezing***	***Heaat is released***

c) Name the state of matter where the particles
i) can flow ***liquids and gases*** ii) can be compressed ***liquids and gases***
iii) have the most kinetic energy ***gases***

d) State the change of matter in the condition

i) the ice melt ***melting*** ii) to get salt from sea water ***evaporation***

5. a) What is matter ?

Matter is anything that has mass and occupies space

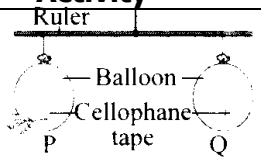
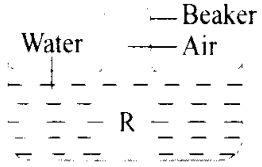
b) i) Is sound an example of matter ?

No

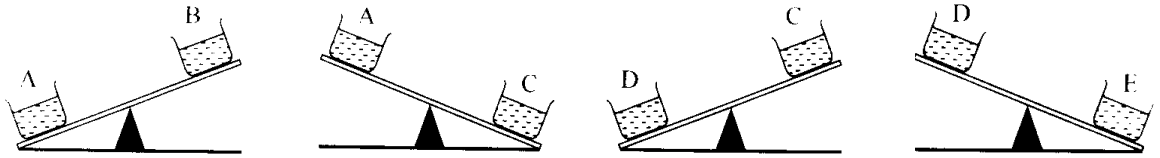
ii) Explain your answer in 1 (b) (I)

Sound has no mass and does not occupy space

c) The following activities are carried out. For each activity , state the expected observation and the suitable conclusion

Activity	Observation	Conclusion
(i)  Balloon P is pricked with a pin at the cellophane tape.	***Balloon P defleates and the ruler tilts towards balloon Q***	***Air has mass***
i (ii)  The beaker is pushed to position R.	***The water in the basin does not fill up the beaker completely***	***Air occupies space***

d) The experiment below is carried out to compare the densities of five liquids A , B , C , D and E



Give that volume of each liquid in each beaker is the same , what is the correct sequence in order of increasing density ?

B , A , C , D , E