PRIMARY SCIENCE

KCPE MODEL TEST PAPER ON PROPERTIES OF MATTER

Based on KCPE 2001-2010 Past Papers

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1. Some pupils were provided with liquids P, Q, R, S and T that were either neutral or acidic. They were asked to mix two liquids at a time and use hibiscus flower juice to test whether the mixture was acidic or not.

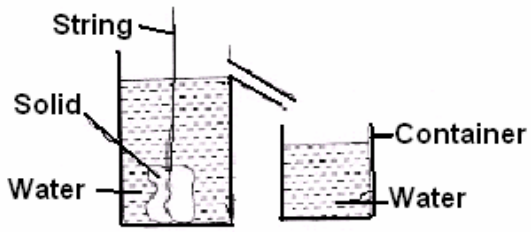
The results obtained were tabulated.

Mixture	Change
P + Q	Red
P + R	No change
R + S	Red
R + T	No change
P + T	No change
Q + T	Red
Q + R	Red

Which two liquids were acidic?

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

2. A solid was immersed in water in an overflow can. The water that overflowed was collected in a container as shown in the diagram below.



The amount of water collected in the container represents the solid's?

A. Mass
B. Density
C. Weight
D. Volume

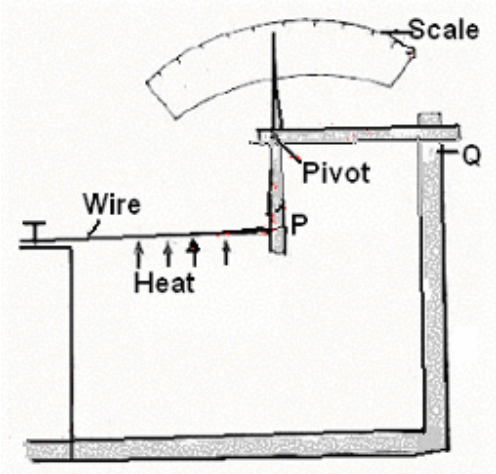
3. Using an indicator, the strength of a acid is determined by;
   A. The intensity of the colour change with indicator
   B. The time it takes the indicator to change the colour
   C. The number of drops required to change colour of the indicator
   D. The colour of the indicator

4. Which one of the following DOES NOT affect the rate of evaporation of a liquid?
   A. Amount of liquid
   B. Surface area
   C. Temperature
   D. Air movement

5. Which of the following materials is magnetic?
   A. Copper
   B. Brass
   C. Steel
   D. Aluminium

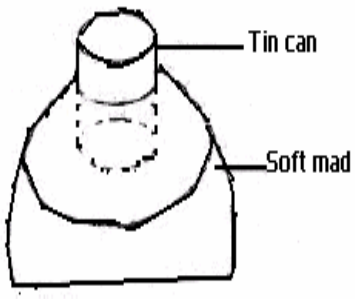
6. Which of the following mixtures cannot be separated by dissolving, filtering and evaporation?
   A. Sand and sugar
   B. Maize flour and sugar
   C. Maize flour and sand
   D. Salt and sugar

7. The diagram below represents an instrument that was used to demonstrate that solids expand when heated.



Which of the following should be done to make the instrument more efficient?
A. Using thinner pointer
B. Reducing the length between support Q and pivot
C. Using a thicker wire
D. Increasing the length between P and pivot

8. Pupils placed a little methylated spirit in a tin can and lit it. After a short while, they placed the tin can upside down over soft mud as shown in the diagram below.



The tin can sank into the soft mud. Which one of the following explains why the tin can sank into the mud?
A. The tin is denser than soft mud
B. Air pressure on the tin can forced the tin can into the soft mud
C. There was no air in the soft mud
D. Force of gravity forced the tin into the soft mud

9. A purple flower was added to substance K, L, M and N to find out whether they were acids or bases. The results were as shown in the table below.

Substance	colour change
K	Pink
L	Blue
M	No change
N	Pink

Which two of the substances react to form salt and water only?

A. K and M
B. M and N
C. K and L
D. L and M

10. Which one of the following aspects of an object cannot be changed?
    A. Mass
    B. Density
    C. Weight
    D. Volume

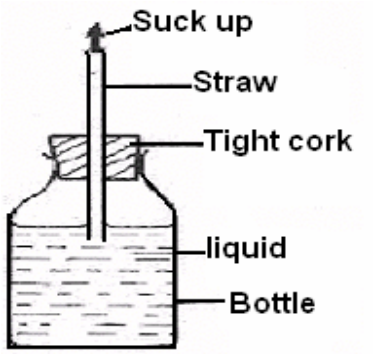
11. Which of the following should not be the same when comparing rates of melting in substances?
    A. Quantity of substance
    B. Amount of substance
    C. The surfaces
    D. Duration of heating

12. Which one of the following pairs consists of substances which have definite volume?
    A. Water vapour and ice
    B. Stone and air
    C. Sand and water
    D. Ice and air

13. The mass of 1centimetre cubed of a substance is its
    A. Volume
    B. Density
    C. Weight
    D. Surface area

14. In which of the following method of separating would only one substance be removed from a mixture of two substances?
    A. Evaporation
    B. Filtration
    C. Decanting
    D. Distillation

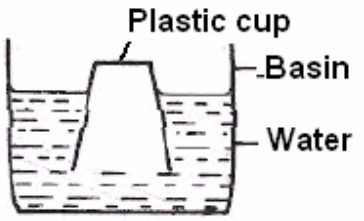
15. The diagram below represents a straw fitted in an airtight glass bottle containing a liquid.



The sucking of the liquid is difficult because

A. The straw does not reach the bottom
B. The liquid does not fill the bottle
C. The air inside the straw prevents the liquid from rising
D. Air pressure does not act on the liquid

16. A plastic cup was inverted over water in a basin as shown in the diagram below.



It was observed that water did not enter the cup. Which of the following would be done to make the water enter the cup?

A. Pushing the cup to the bottom
B. Adding more water to the basin
C. Reducing the size of the cup by cutting
D. Making a hole at the bottom of the cup

17. In which of the following activities can correct conclusion be drawn about evaporation of equal amounts of water and spirit?
    A. Putting the liquids in bottle tops and placing both in the sun
    B. Putting one liquid in a bottle top and the other in a shoe polish lid then placing them in the sun
    C. Putting the liquid sin bottle tops then placing one in the sun and heat the other with a candle
    D. Putting one liquid in a bottle top and the other in polish tin lid then heat them with a candle

18. Which of the following is NOT TRUE about pressure in liquids increases when the
    A. Amount of liquid is increased
    B. Diameter of the container is educed
    C. Depth of liquid is increased
    D. Container with liquids is raised

19. Which one of thee following is the difference between solids and gases?
    A. Solids have mass whereas gases do not
    B. Solids have definite shape whereas gases do not
    C. Solids have definite shape whereas gases take shape of the container
    D. Solids can change to liquids whereas gases con not change to liquids

20. When lime powder was mixed with juice obtained from hibiscus flower it changed colour. Which of the following substances would NOT make hibiscus flower juice change to the same colour?
    A. Wet wood ash
    B. Sour milk
    C. Baking powder
    D. Chalk dust

21. Below are the activities carried out when separating a mixture of salt, iron fillings and sand but not in their correct order.
    i. Filter the mixture through a sieve
    ii. Add water to the mixture
    iii. Leave mixture in the sun
    iv. Pass a magnet through the mixture

    The correct order of the activities is
    A. (iv) (ii) (i) (iii)
    B. (ii) (iii) (i) (iv)
    C. (ii) (iii) (iv) (i)
    D. (iv) (i) (ii) (iii)

22. Which of the following properties of clay soil would greatly contribute to flooding in an area?
    A. High capillarity
    B. Poor drainage
    C. Fine texture
    D. Stickiness

23. The reason why sandy soil is mixed with cement in building is because it
    A. Drains well
    B. Has large air spaces
    C. Has large particles
    D. Mixes easily with cement

24. When choosing a method of separating a mixture of a liquid and solid it is important to consider the
    A. Density of the liquid
    B. Size of particles of the solid
    C. Density of the solid

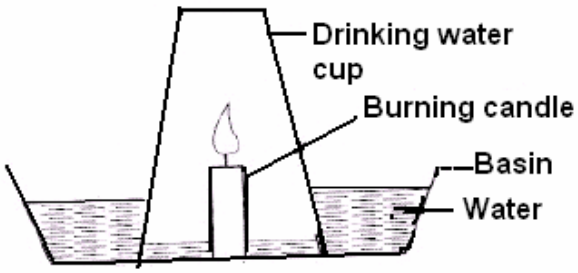
D. Solubility of the solid

25. Which of the following is NOT definite for liquids?
    A. Shape
    B. Volume
    C. Mass
    D. Density

26. Which one of the following is NOT important when comparing solubility of solids in liquids?
    A. Amount of the solid
    B. Size of the container used
    C. Temperature of the liquid
    D. Amount of liquid

27. The following are the activities which are carried out when comparing the strength of acids in fruit juice.
    i) Adding the different juices drop by drop in each of the bottle tops
    ii) Adding equal amounts of indicators in each of the bottle tops
    iii) Putting equal amount of wood ash solution into different bottle tops. Which one of the following is the correct order of the activities?
        A. (iv) (iii) (ii) (i)
        B. (iv) (ii) (iii) (i)
        C. (iii) (ii) (iv) (ii)
        D. (ii) (iii) (i) (iv)

28. The diagram below represents a set up that can be used to demonstrate a certain property of air.

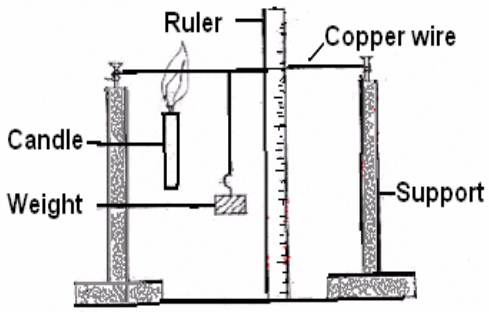


Which property of air is demonstrated by the set up?
    A. Air exerts pressure in all directions
    B. Air occupies space
    C. Part of air used in burning
    D. Air expands when heated

29. Which of the following pairs of substances will give the same colour when mixed with flower extract?
    A. Lemon juice and lime extract
    B. Asprin solution and actal solution
    C. Lemon solution and asprin solution
    D. Lime solution and actal solution

30. Sifting, picking and sieving are some of the methods of separating mixtures. Which of the following mixtures can be separated by all the three methods?
    A. Maize and beans
    B. Sand and rice
    C. Maize flour and small pieces of iron fillings
    D. Sugar and tiny pieces of iron

31. The SHOWN diagram represents a set up that can be used to demonstrate a certain property of metals.



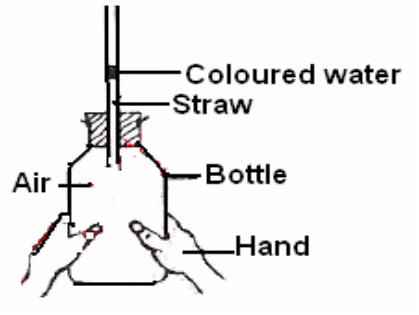
Which property of metal was being demonstrated?

A. Metals expand when heated
B. Metals bend when heated
C. Solids conduct heat
D. Metals are pulled down by weight

32. Which of the following consist only of substances that have no definite volume?
    A. Stone, kerosene, carbon dioxide
    B. Oil, tooth paste, glue`
    C. Clay, cement, flour
    D. Nitrogen, oxygen, water vapour

33. The component that makes up 0.97% of air is used in
    A. Rusting
    B. Electric bulbs
    C. Preservation of soft drinks
    D. Making proteins'

34. The diagram below shows a set up that was used to demonstrate a certain property of matter.



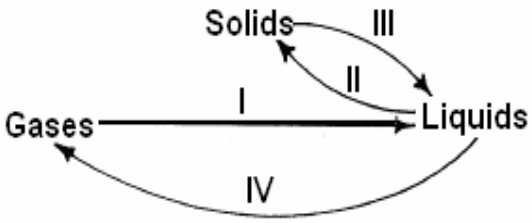
The coloured water rises up the straw because?

A. Liquids expand when heated
B. Liquids occupies space
C. Air occupies space
D. Air expands when heated

35. Which of the following groups of methods can be used to separate solid mixtures only?

A. Sieving, winnowing, picking
B. Picking, use of magnet, decanting
C. Winnowing, sieving, filtration
D. Use of magnet, filtration, decanting

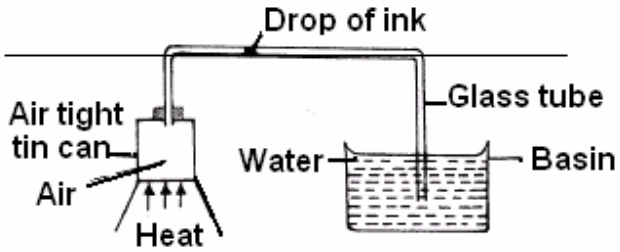
36. The processes I, ii, iii and iv in the chart below bring about changes in states of matter.



The processes that requires increase in temperature are?

A. I, ii, iv
B. I, ii
C. I, iii
D. I, iv

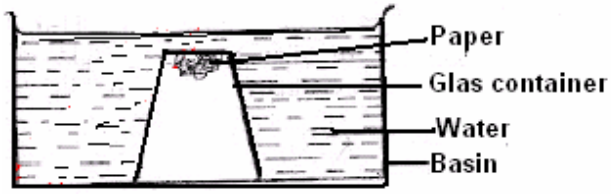
37. The diagram below shows a set up that was used to investigate certain property of air.



Which of the following would not be observed if the tin can was heated gently?

A. Bubbles in the basin
B. Drops of ink moving water in the basin
C. Water level in the basin decreasing when heating is stopped
D. Water level in the glass tube decreasing when heating is stopped

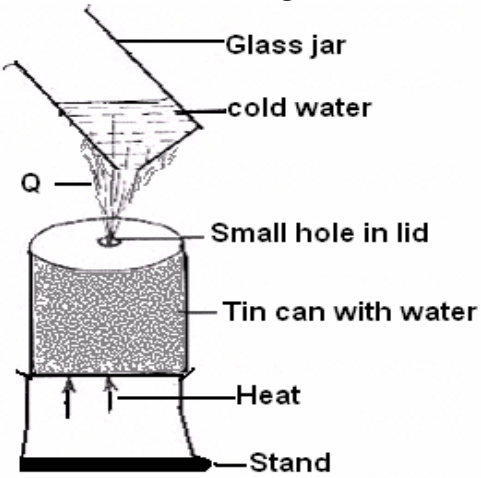
38. The diagram below represents a set up that was used to demonstrate a certain property of matter.



The property demonstrated was

A. Air occupies space
B. Water exerts pressure
C. Air has mass
D. Water occupies space

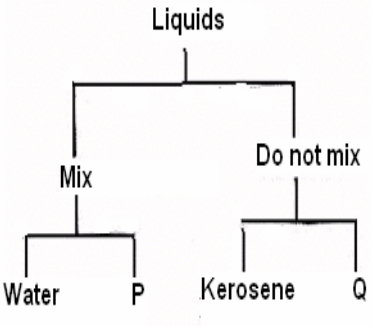
39. The diagram represents a set up that can be used to demonstrate a certain process involved in the change of state of matter.



The process that takes place at point labeled Q is?

A. Boiling
B. Condensation
C. Evaporation
D. Freezing

40. The chart below represents a simple classification of liquids.



P	**Q**
A. Methylated spirit	Milk
B. Engine Oil	Methylated spirit
C. Cooking oil	Milk
D. Turpentine	Engine Oil

41. Choose a group of substances where all three are acidic.
    A. Tooth paste, clover, wood ash
    B. Wood ash, sour milk, vinegar
    C. Lemon juice, tooth paste, baking powder
    D. Clover, vinegar, sour milk

42. In which of the following processes is oxygen NOT used?
    A. Making plant's food
    B. Burning
    C. Breathing
    D. Germination of seed

43. The following are liquids added together in glass bottles labeled P,Q, R and S by some pupils.
    P - kerosene and cooking oil
    Q – water and cooking oil
    R – milk and water
    S – milk and kerosene

    Which glass bottle contains liquids that cannot be separated by decanting?
    A. P **B.** Q **C.** R **D.** S

44. The following are some uses of air.
    i. Manufacture of electric bulbs
    ii. Supporting burning
    iii. Germination of seeds
    iv. Putting off fires

    Which of the following uses are for carbon dioxide?
    A. (i) and (ii)
    B. (ii) and (iv)
    C. (i) and (iv)
    D. (iii) and (iv)

ANSWERS

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