CHEMISTRY

BOOKS - SWAN PUBLICATION

IS MATTER AROUND US PURE

Question

1. What is meant by a pure substance ?

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2. List the points of difference between homogeneous and heterogeneous mixtures.

3. Differentiate between homogeneous and heterogeneous mixtures with examples.

4. How are true solution, colloidal solution and suspension different from each other ?

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5. To make a saturated solution, 36 g of sodium chloride is dissolved in 100 g of water at 293 K. Find its concentration at this temperature.

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6. How will you separate a mixture containing kerosene and petrol (difference in their boiling points is more than $25^{\circ} C$), which are miscible with each other ?

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7. Name the technique to separate : Butter from curd

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8. Name the technique to separate : Salt from sea water

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9. Name the technique to separate : Comphor from salt.

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10. What types of mixture are separated by the technique of crystallisation ?

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11. Classify the following as chemical or physical changes : cutting of trees.

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12. Classify the following as chemical or physical changes : melting of butter in a pan.

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13. Classify the following as chemical or physical changes : rusting of almirah.

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14. Classify the following as chemical or physical changes : boiling of water to form steam.

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15. Classify the following as chemical or physical changes : passing of electric current through water and the waterbreaking down into hydrogen and oxygen gases.

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16. Classify the following as chemical or physical changes : dissolving common salt in water.

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17. Classify the following as chemical or physical changes : making a fruit salad with raw fruits.

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18. Classify the following as chemical or physical changes : burning of paper and wood.

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19. Try segregating the things around you as pure substances or mixtures.

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Exercises

1. Which separation techniques will you apply for the separation of the following? Sodium chloride from its solution in water.

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2. Which separation techniques will you apply for the separation of the following? Ammonium chloride from a mixture containing sodium chloride and ammonium chloride.

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3. Which separation techniques will you apply for the separation of the following? Small pieces of metal in the engine oil of a car.

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4. Which separation techniques will you apply for the separation of the following? Different pigments from an extract of flower petals.

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5. Which separation techniques will you apply for the separation of the following? Butter from curd

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6. Which separation techniques will you apply for the separation of the following? Oil from water

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7. Which separation techniques will you apply for the separation of the following? Tea leaves from tea

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8. Which separation techniques will you apply fo the separation of the following? Iron pins from sand

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9. Which separation techniques will you apply for the separation of the following? Wheat grains from husk

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10. Which separation techniques will you apply for the separation of the following? Fine mud particles suspended in water.

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11. Write the steps you would use for making tea.Use the words— solution,solvent, solute, dissolve, soluble, insoluble, filtrate and residue.

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12. Pragya tested the solubility of three different substances at different temperatures and collected the data as given below (results are given in the following table as grams of substance dissolved in 100 grams of water to form a saturated solution).

Substance Dissolved	Temperature in K				
Solubility	283	293	313	333	353
Potassium nitrate	21	32	62	106	167
Sodium chloride	36	36	36	37	37
Potassium chloride	35	35	40	46	54
Ammonium chloride	24	37	41	55	66

(a) What mass of potassium nitrate would be needed to produce a saturated solution of

potassium nitrate in 50 grams of water at 313 K?

(b) Pragya makes a saturated solution of potassium chloride in water at 353 K and leaves the solution to cool at room temperature. What would she observe as the solution cools ? Explain.

(c) Find the solubility of each salt at 293 K. Which salt has the highest solubility at this temperature ?

(d) What is the effect of change in temperature on the solubility of a salt?

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13. Explain the following giving examples : saturated solution

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14. Explain the following giving examples : pure substance

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15. Explain the following giving examples : colloid

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16. .Explain the following giving examples : suspension.

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17. Classify each of the following as a homogeneous or heterogeneous mixture : soda water, wood, air, soil, vinegar, filtered tea.

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18. How would you confirm that a colourless liquid given to you is pure water ?

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19. Which of the following materials fall in the category of a "pure substance"? Ice,Milk,Iron,Hydrochloric acid, Calcium oxide,Mercury, Brick, Wood,Air.

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20. Which of the following materials fall in the category of a "pure substance"?

Milk

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21. Which of the following materials fall in the category of a "pure substance"?

Iron

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22. Which of the following materials fall in the category of a "pure substance"?

Hydrochloric acid

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23. Which of the following materials fall in the category of a "pure substance"?

Calcium oxide

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24. Which of the following materials fall in the category of a "pure substance"?

Mercury

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25. Which of the following materials fall in the category of a "pure substance"?

Brick

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26. Which of the following materials fall in the category of a "pure substance"?

Wood

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27. Which of the following materials fall in the category of a "pure substance"?

Air

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28. Identify the solutions among the following mixtures.

(a) Soil

(b) Sea water

(c) Air

(d) Coal

(e) Soda water.

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29. Which of the following will show "Tyndall effect" ?

(a) Salt solution

(b) Milk

(c) Copper sulphate solution

(d) Starch solution.

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30. Classify the following into elements, compounds and mixtures.

Sodium

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31. Classify the following into elements, compounds and mixtures.

Soil

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32. Classify the following into elements, compounds and mixtures.

Sugar solution

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33. Classify the following into elements, compounds and mixtures.

Silver

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34. Classify the following into elements, compounds and mixtures.

Calcium carbonate

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35. Classify the following into elements, compounds and mixtures.

Tin

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36. Classify the following into elements, compounds and mixtures.

Silicon

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37. Classify the following into elements, compounds and mixtures.

Coal

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38. Classify the following into elements, compounds and mixtures.

Air

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39. Classify the following into elements, compounds and mixtures.

Soap

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40. Classify the following into elements, compounds and mixtures.

Methane

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41. Classify the following into elements, compounds and mixtures.

Carbon dioxide

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42. Classify the following into elements, compounds and mixtures.

Blood

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43. Which of the following are chemical changes ?

Growth of a plant

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44. Which of the following are chemical changes ?

Rusting of iron

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45. Which of the following are chemical changes ?

Mixing of iron filings and sand

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46. Which of the following are chemical changes ?

Cooking of food

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47. Which of the following are chemical changes ?

Digestion of food

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48. Which of the following are chemical changes ?

Freezing of water

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49. Which of the following are chemical changes ?

Burning of a candle.

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Important Q A

1. What is a mixture ?Write two properties of mixture.

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2. What are the types of mixtures ?

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3. What is solution ?

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4. what are alloys?

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5. What do you mean by solvent and solute, Give examples.

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6. Is air a mixture or a compound?

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7. What is saturated solution ?

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8. What is unsaturated solution ?

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9. What do you mean by concentration of a solution ?

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10. What is a suspension ? What are its properties?

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11. What is a colloidal solution ?

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12. What is Tyndall effect?

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13. How can we separate a mixture of two immiscible liquids like kerosene oil and water?

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14. How will you separate a mixture of Ammonium chloride and common salt ?

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15. How can we separate a mixture of two miscible liquids ?

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16. Distinguish between mixtures and compounds ?

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