CHEMISTRY

BOOKS - CAMBRIDGE CHEMISTRY (KANNADA ENGLISH)

IS MATTER AROUND US PURE

Question Hour

1. What is meant by pure substance ?

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2. List the point of difference between homogenous and heterogenous mixtures ?

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3. List the difference between homogenous and heterogenous mixture.

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4. How are Sol, solution and suspension differents each other.

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

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6. How will you separate a mixture contaning kerosene and petrol (difference in their boiling point of More than 25 C) which are miscible with each other ?

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7. Name the Technique to Separate Butter and Curd

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8. What type of Mixtures are seperated by technique of crystilisation ?

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9. Classify the following into physical and chemical changes.

Rusting of iron

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10. Try Segregating the things around you as pure substances or Mixtures .

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Exercise

1. Which seperation techniques will you apply for the Seperation of the oil from water ?

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2. Write the steps you would use to making tea. Use the words solution , Solvents ,Solute, dissolve ,soluble , insoluble , filtrate and residue ?

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3. Pragya tested the solubility of three different substances at different temperature and collected the data as given below (result are given in the following table, as grams of substance dissolved in 100 gms of water to form a saturated solution.

Substance Dissolved	Temperature in K				
	283	293	313	333	353
	Solubility				
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 of temperature on the solubility of a salt ?

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4. Explain the following giving examples

(a) Saturated solution

(b) Pure substance

(c) Colloid

(d) Suspension

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5. Classify each of the Following as a homogenous or Heterogenous mixture ?

Soda , Water, Wood , Air, Soil,Vinegar ,Filtered tea .

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6. How would you confirm that a colourless Liquid given to you is pure water?

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7. Which of the following materials fall in the category of a " Pure Substances" ?

(a) Ice

(b) Milk

(c) Iron

(d) hydrochloric acid

(e) Calcium Oxide

(f) Mercury

(g) Bricks

(h) Wood

(i) Air

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8. Identify the solutions among the Following mixtures.

(a) Soil

(b) Sea water

(c) Air

(d) Coal

(e) Soda water?

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9. Which of the following will show "Tydall Effect"?

(a) Salt Solution

(b) Milk

(c) Copper Sulphate Solution

(d) Starch Solution ?

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10. Classify the following into elements, compounds and mixtures

(a) sodium (b) soil, (c) sugar solution (d) silver (e)

calcium carbonate (f) soap (g) tin (h) silicon (i) coal

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11. Which of the following are chemical changes ?

(a) growth of a Plant

(b) Rusting of Iron

(c) Mixing of Iron Filing and sand

(d) Cooking of Food

(e) Digestion of food

(f) Freezing of water

(g) Burning of Candle.

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Choose The Correct Answer

1. Air shows the property of

A. N_2

B. O_2

C. Both a and b

D. None of these

Answer: C

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2. The components of water can be separated by

A. Physical method

B. Chemical method

C. Both

D. They could not be separated

Answer: B

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3. Mixture can be

A. Homogeneous

B. Heterogeneous

C. Both a and b

D. Pure Substances

Answer: C

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4. Brass is a

A. Compound

B. Element

C. Homogenous mixture

D. Heterogeneous mixture

Answer: C

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5. In Sugar Solution

A. Sugar is solute, water is solvent

B. Sugar is solvent, water is solute

C. Both are solutes

D. Both are solvents

Answer: A

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6. Brass is a solution of molten copper in

A. Solid zinc

B. Molten zinc

C. Gaseous zinc

D. Molten tin

Answer: B

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7. 24 carat of diamond is equal to

A. 200 mg

B. 200 g

C. 95% mg

D. 91% gold

Answer: A

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8. 1 Carat of diamond is equal to

A. 200 mg

B. 200 g

C. 100 mg

D. 100 g

Answer: A

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9. Diamond is lustrous because

A. It is colourless

B. It is hard

C. It is pure

D. Its refractive index is high

Answer: D

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10. If we burn graphite

A. Residue will be left

B. No residue will be left

C. It will not burn

D. It will change into diamond

Answer: B

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Fill In The Blanks

1. _____ is the method used to separate cream from milk.

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2. Solution which as uniform composition throughout is called _____.

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3. The particle of suspension will be of size.

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4. _____ is dispersing medium of Foam.

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5. _____ and _____ are the two elements that are liquid at room temperature.

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Match The Following

1.

A	B
1. Kerosene from water	a. Chemical change
2. Iron pins from sand	b. Centrigugation
3. Butter from curd	c. Physical change
4. Digestion of food separation	d. Magnetic
5. Freezing of water	e. Decantation

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Answer The Following Questions

1. What are elements ?

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2. What is meant by pure substance ?

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3. List the point of difference between homogenous and heterogenous mixtures ?

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4. Arun has prepared 0.01% solution of sodium chloride in water. Which of the following correctly represents the composition of the solutions.

A. 1.00g of Nacl + 100g of water

B. 0.11g of Nacl + 100g of water

C. 0.01g of Nacl + 99.99 of water

D. 0.10g of Nacl + 99.90 of water

Answer: C

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5. Calculate the mass of sodium sulphate required to prepared its 20% solution in 100g of water ?

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6. What are the characteristcs exhibited by a pure substance.

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7. A solution contains 40 ml of ethylalcohol mixed with 100 ml of water. What is the concentration of the solution in terms of volume by volume percentage.

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8. What is chromatography ?

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9. Why solution do not exhibit Tyndall effect.

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10. Identify which of the following is homogenous mixture or heterogeneous one. Also identify the type of constituents in mixture (e.g gas in gas, in liquid, gas in solid etc)

a. Air

b. water and soil $(N_2 + O_2)$

c. Hydrogen in Palladium

d. Aerated water $(CO_2 + H_2O)$

e. Chalk in water

f. Ethylalcohol in water

g. Alloy Eg : brass

h. Dust

i. Sand + Iron fillings

j. Sand + ammonium chloride

k. milk

l. Mercury in amalgamated Zinc

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Unit Test

1. _____ is the method used to separate cream from milk.

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2. The particle of suspension will be of size.

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3. Define the terms :-

(a) Elements

(b) Chromatography

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4. What are the characteristcs exhibited by a pure substance.

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5. Which seperation techniques will you apply for the Seperation of the oil from water ?

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6. List the difference between homogenous and heterogenous mixture.

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