

Zonal Education Office, Thenmaradchy

Grade 11

Unit Exam - 3 Science

Time- 40 minutes

Answer all Questions

Part - I

Underline the most suitable answer.

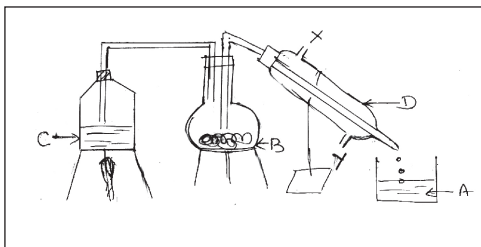
01. Solid-Liquid homogeneous mixture,
1. CO₂ gas + hot water 2. alcohol + water 3. Salt + water 4. Wheat flour + water
02. Which one is not essential to prepare the standard solution of NaOH
1. Volumetric flask 2. Watch glass 3. Funnel 4. NaOH
03. Number of moles of urea in 6g sample, (Urea - CO(NH₂)₂, C-12, H - 1, N - 14, O - 16)
1. 1 2. 10 3. 0.01 4. 0.1
04. Solvent and solid of copper sulphate solution are,
1. Water, Copper Sulphate 2. Copper Sulphate
3. Copper Sulphate, Water 4. Non of the above
05. Method of separation of highly volatile substances from its sources,
1. Fractional distillation 2. Steam distillation 3. Simple distillation 4. Solvent extraction
06. The part of clove used to extract essential oil is,
1. Seed 2. Bud 3. Steam 4. Root
07. Methods used to separate salt from sea water are,
1. Evaporation, Crystallization 2. Crystallization, Fractional distillation
3. Evaporation, Simple distillation 4. Re-crystallization, Evaporation
08. Magnet is used to separate iron fillings mixed with sand. Physical characteristic used in this process is,
1. Density difference of the components 2. Different sizes of the components
3. Magnetic property of the components 4. Chemical property of the components
09. If solute X dissolves in water, the characteristics of X and water, which support this property is,
1. X and water are polar inorganic compounds
2. X and water are polar organic compounds
3. X is an organic compound, water is an inorganic compound
4. Both are polar or non polar.
10. Incorrect statement about mixture is,
1. Consists of two or more components
2. Chemical properties of each components are different
3. It is possible to separate the components physically
4. All components have similar chemical properties.

(10x2= 20 marks)

Part II

Answer all question

01.A. The given figure shows the experimental set up arranged by a student to extract essential oil from clove.



1. Identify the separation methods mentioned? (1 marks)

2. Name A, B, C and D? (2 marks)

3. Give three errors in this set up? (3 marks)

4. Give the measures takes to rectify the errors mentioned in Q 3? (3 marks)

5. What is the reason for using steam for this separation? (2 marks)

6. Among X and Y, through which water is pumped into the equipment D? (2 marks)

7. Name the separation method used to separate the components of the mixture in A? (1 marks)

8. Give the property of the mixture mentioned in Q 7 supported the extration mentioned by you? (1 marks)

B. Separation of salt from sea water in salterns is one of the industry in Sri Lanka,

1. What are the environmental factors that should be taken into consideration, when setting up a saltern? (4 marks)

2. Give the chemical formula of the crystals separated in each tanks of saltern? (3 marks)

3. "Salt produced in saltern is stored for a period of six month before selling" Give reason for this? (3 marks)

02.A. A student wants to prepare, the standard solution of NaCl.

1. Name the equipments needed him for this purpose? (2 marks)

2. He is going to prepare 500 Cm³ of 1 mol dm⁻³ NaCl solution.
a. Calculate number of moles of NaCl in 500cm³ solution? (4 marks)

b. Calculate the mass of NaCl in 500cm³ solution? (Molecular mass of NaCl is 58.59) (4 marks)

3. Write the steps of the "preparation of standard solution"? (4marks)

B. 6g of urea (CO(NH₂)₂) was dissolved in distilled water and 500cm³ solution was prepared.
(C - 12, O - 16, N - 14, H - 1)

1. What is the molar mass of urea? (4 marks)

2. What is the number of moles of urea in the above sample? (4 marks)

3. Calculate number of moles of urea in 1000 cm³ solution? (4 marks)

4. What is the concentration of urea solution prepared? (4 marks)

C. Give the methods used to separate the following mixtures?

1. Alcohol, water mixture
2. Components from leaf extract
3. Separation of NaCl From impure salt sample
4. Sand from Rice
5. Sugar from sugar cane

(5x2= 10 marks)