072106T4FTC

FOOD TECHNOLOGY LEVEL 6

FOP/OS/FT/CR/01/6/A

Manage Quality of Food Products

Nov/Dec 2024

TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION COUNCIL (TVET CDACC)

PRACTICAL ASSESSMENT

TIME: 4 HOURS

INSTRUCTIONS TO THE CANDIDATE

1. You are required to perform the following tasks
   i. Prepare standard solutions of sugar
   ii. Determine the sugar concentration of the provided sample

2. You will be provided with the following resources:
   - Sample solution, X, in a plastic beaker
   - Refined sugar
   - Distilled water
   - Digital weighing balance
   - Density bottle, 25ml
   - Stirring glass rod
   - Graph papers

- Aluminium foil
- Plastic beakers 50 ml
- Sticker labels
- Serviettes
- Foolscaps
- PPEs
- Calculator
- Pens
- Pencil
- Ruler, 30 cm

Procedure for task 1

1. Make 50 ml of each standard sugar solution (%w/w) as shown in Table 1. Proceed by determining the amount of sugar required and the corresponding amount of water in terms of weight.
2. Fill in the Table 1 below

Table 1:

Standard solution(%w/w)	1%	5%	10%	15%	20%	25%
Mass of sugar required, g						
Mass of distilled water required, g						
Density, ρ, g/cm^3						

3. Using the provided plastic beakers, prepare the standard sugar solutions using the determined weights of sugar and the corresponding weights of distilled water.
4. Using the 25ml density bottle, determine the density of each standard sugar solution.
5. Record the densities obtained in Table 1.
6. Plot a graph of density versus sugar concentration. This makes the calibration curve

Procedure for task 2

1. Using the stirring rod, thoroughly mix the sample solution, X, in the beaker.

2. Using the stirred solution, carry out two density measurements accurately using the 25ml density bottle.
3. Compute the average of the two values and record the average value as ρ_{x} =_____
4. Using the value, $\rho_{x,\ and}$ the calibration curve, determine the concentration of sample solution X.

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