

- Use the graph (interpret) to obtain:
 - Solubility of potassium nitrate at different temperatures
 - Determine the molar concentration of potassium nitrate at 15°C

Weaknesses

Many candidates were not able to define solubility correctly. The following are some of the definitions (responses) given by candidates.

- A solution which contains maximum number of hydrogen molecules.
- It is where 1g of a compound completely dissolves in 1000g of water at a particular temperature.
- It is where there is no change in products even when the reactants are added.

The responses given suggest that terminologies and definitions are not well understood. This could result from poor approach to the teaching of the topic on solubility. Students should be encouraged to practically make saturated solutions at various temperatures. Teachers should discuss the observations and definitions made by the students and eventually give them the accepted definition. Practical approach should thus be encouraged.

Another weakness noticed was the candidates' inability to draw correct graphs ie.

- They did not name the axis or where names appeared, they were incorrect.
- They did not have correct units on axes
- They did not choose the scale correctly
- They did not plot the points correctly
- The curves did not occupy $\frac{3}{4}$ of the grid provided
- Points were not joined with a smooth curve
- They did not interpret the graphs correctly.

Candidates should be reminded that once data is provided and a graph is to be drawn, it must have the following characteristics:-

- The axes must be named and the correct units for each axis given.
- The scale must be chosen carefully so that the curve occupies $\frac{3}{4}$ of the grid provided.
- **All** points must be correctly plotted. If all or some of the points are **not** correctly plotted, then the conclusions to be made **cannot** be correct. In our case the candidates who did not plot the points correctly could not get the right mass of potassium nitrate which dissolved at 15°C and thus could not get the correct molar concentration of potassium nitrate at 15 C.

Candidates need to be exposed to many types of graphs. Drilling on the meanings of shapes of the curves is necessary and finally, meanings of particular points on the graphs must be discussed.