Uva Wellassa University of Sri Lanka
Faculty of Science and Technology
Science and Technology Degree Program
300 Level First Semester Examination – May/July 2017
SCT 342-2 Material Chracterization Techniques - I

Uva Wellassa University

Instructions to candidates

Answer all questions

Symbols contain usual meaning, calculators are allowed

PART B

1. a). What do you mean by "excited state" of an electron?

   b). What is the total spin number when two electrons in excited singlet state and singlet ground state?

   c). What are the two types of forbidden electron transitions in spectroscopy?

   d). What do you mean by $\sigma \rightarrow \sigma^*$ transition?

   e). $\sigma \rightarrow \sigma^*$ and $\pi \rightarrow \pi^*$ transitions are allowed in spectroscopy. Which transition needs to absorb more energy?

   f). What do you mean by the term "Chromophores"?

   g). Write four examples for chromophores.

   h). What do you mean by the term "Auxochromes"?

   i). Write four examples for auxochromes.

   j). What will happen when an auxochrome is attached to chromophore?

   (25 marks)

2. FTIR spectrum of gas phase formaldehyde is given below. Identify the peaks indicated by frequency

   (25 marks)