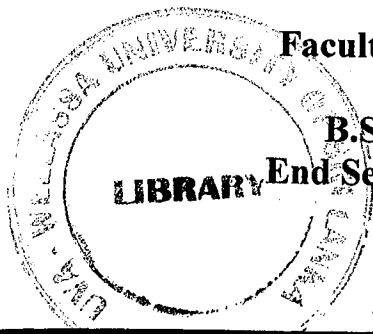




Uva Wellassa University
Faculty of Animal Science and Export Agriculture



B.Sc. in Tea Technology and Value Addition
End Semester Examination August/September 2011
Year II Semester II

Analytical Chemistry (TEA 234-2) & Repeat

Instructions

Answer **all** questions

No. of questions : Two (02)

No. of pages : One (01)

Total marks allocated : 40%

Time : 30 minutes

Index No:

Part III- Essay

- (1) i. Define the 'absorbance' and the 'transmittance' as applicable to absorption spectroscopy. Illustrate absorption of radiation by an absorbing solution giving references to the appropriate parameters. Accordingly define the terms of absorbance and transmittance. (25 marks)
- ii. Establish the relationship between transmittance and absorbance. Also identify the relationship as applicable to spectroscopy. (10 marks)
- iii. A standard solution of $K_2Cr_2O_7$ prepared by dissolving 1.65 mg in 100.0 mL of solvent shows the transmittance of 36.4 % when measured in a 1.05 cm. Determine (a) the absorbance of the solution (b) molar absorptivity of $K_2Cr_2O_7$ solution. (Atomic mass - K = 39 , Cr = 52, O = 16) (40 marks)
- iv. What would be the characteristic concentration of this solution? (25 marks)
- (2) Consider that you are a Technical Manager (TM) of an organization which produces technical data that turned into reports of both on going research and technical services. Since the technical reports are used to take important decisions in the organization, the correctness of the reports are very important. Assuming your laboratory has the facility to conduct both wet chemical and instrumental analysis, discuss the different aspects that you practice as the TM to maintain the reliability of your technical data. (100 marks)