Uva Wellassa University of Sri Lanka
Faculty of Applied Sciences
Department of Science and Technology
300 level 1st Semester Examination – July / August 2019
SCT 342-2 Materials Characterization Techniques - I

Uva Wellassa University

Index Number

Part B

1.

i. What is the color of light, which has a wavelength range from 490 -575 nm?

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ii. A boy is wearing a shirt, which can be seen as blue color. Explain why we can see it in that particular color?

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iii. What could be happen when light beam is fallen on a partially transparent substrate?

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iv. What could be happen when energy beams that consisting of UV-Vis and IR, is fallen on an organic molecule?

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v. When an organic compound is irradiated with UV light source, electrons in the molecule could be excited from highest occupied molecular orbital to

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vi. What do you mean by singlet - singlet transition of electron?

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vii. Which type of transition is electronically forbidden in a molecule?

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viii. Why such type of electronical transitions is not allowed in a molecule?

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ix. What types of bond vibrations are allowed in IR spectroscopy?

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x. Write four types of oscillations could be occurred in organic molecule not along the line of bonds.

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(10 X 10 Marks)

2.

i. What do you mean by chromophores?

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ii. Write five examples for chromophores.

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iii. Write the excitation wavelengths of chromophores you mentioned in section ii.

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iv. What do you mean by auxochromes?

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v. Write five examples for auxochromes.

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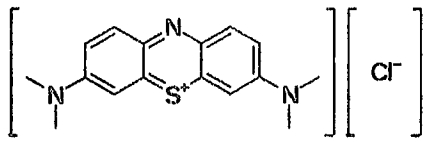
vi. Briefly explain, why given molecule absorbs visible light with the maximum wavelen of 660 nm.



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vii. Write three factors that practical influence the absorption spectra.

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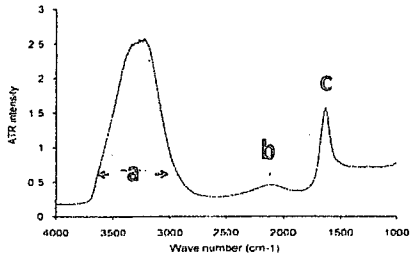
viii. FTIR spectrum of simple liquid is given below. Identify the peaks indicate by peaks a, b and c.



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ix. What do you mean by combinational bands in IR spectroscopy?

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x. Write two gases that do not absorb IR light?

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(10 X 10 Marks