THE OPEN UNIVERSITY OF SRI LANKA

BACHELOR OF INDUSTRIAL STUDIES
/BACHELOR OF TECHNOLOGY

TTX6162– ADVANCED COLOURATION

FINAL EXAMINATION- 2016

DURATION- 3 HOURS

Date: 22nd Nov, 2016 **Time: 930 – 1230 Hrs.**

Total number of questions in this paper is eight (08). Total number of questions to be answered is six (06). Question number one is compulsory and carries 25 marks. All other questions carry fifteen (15) marks each.

01. Compulsory question
(Each part carries 2.5 marks amounting to a total of 25 marks)

(a) What are the ideal properties expected from a dye material?

(b) Name two fibre types that can be dyed with basic dyes.

(c) Classify acid dyes into three classes according to the application.

(d) Name the main operations involved in vat dyeing.

(e) Explain briefly the term 'mordant'.

(f) Explain the term "one bath process" in reference to dyeing fibre mixtures.

(g) What is a leveling agent.

(h) In your own words explain the term "colour fastness".

(i) Briefly explain how the eye perceives colour.

(j) Mention the meaning of the following terms associated with colour.

(a) Hue (b) Saturation

2. (i) Explain why basic dyes are named as cationic dyes? (06 Marks)

(ii) Write brief notes on the general properties of basic dyes. (09 Marks)

3. (i) Discuss The general properties of Sulphur dyes (06 Marks)

(ii) Explain the application of water soluble Sulphur dyes to textile materials. (09 Marks)

4. (i) Give two reasons as to why polyesters are difficult to dye? (06 Marks)

(ii) Briefly explain the terms: (09 Marks)

a. High temperature dyeing.

b. Carrier dyeing.

5. Discuss how the dyeing properties are affected by the physical and chemical properties of fibre. (15 Marks)

6. (i) Give the main reasons why the natural coloring materials are not much used in textile coloration. (07 Marks)

(ii) If you are given some orange flowers that have natural pigment carotene; explain how you can do a study to use this pigment as a textile dye to yield stable yellow shades. (08 Marks)

7. Using diagrams compare the CIE and Munsell color systems. (15 Marks)

8. Briefly explain the methods that can be used for textile fiber blends.

(i) Dyeing mixture of cotton and regenerated cellulose fibers.

(ii) Dyeing wool and nylon fiber mixtures

(iii) Dyeing artificial wool fibers and cellulose fibers. (15 Marks)