



UNIVERSITY OF SWAZILAND
FINAL EXAMINATION PAPER

PROGRAMME : BACHELOR OF SCIENCE IN TEXTILE APPAREL
DESIGN AND MANAGEMENT YEAR III

COURSE CODE : TADM 307

TITLE OF PAPER : COLOURATION TECHNOLOGY

TIME ALLOWED : TWO (2) HOURS

INSTRUCTIONS : ANSWER QUESTION ONE (1)
AND ANY OTHER TWO (2) QUESTIONS

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QUESTION 1 (COMPULSORY)

- a) List **two (2)** objectives of pre-treatment in Textile wet processing (2 Marks)
- b) Describe the screen making process as used in screen printing (12 Marks)
- c) You have been given two fabric swatches, a standard (A) and a sample (B) with the following values A: $L^*=52.99$, $a^*=8.82$, $b^*=54.53$, B: $L^*=64.09$, $a^*=2.72$, $b^*=49.28$. Compare the two swatches using ΔL^* , Δa^* , Δb and ΔE^* giving full explanations for you answer (12 Marks)
- d) Explain **two (2)** methods that can be used to apply mordants when dyeing with natural dyes (6 Marks)
- e) Briefly describe enzymatic sizing of a starch sized cotton fabric (8 Marks)

[TOTAL MARKS = 40]

QUESTION 2

- a) Explain direct and discharge printing techniques (10 Marks)
- b) Explain the function of thickening agents in printing. Name **two (2)** commonly used thickening agents in printing (5 Marks)
- c) List **three (3)** typical ingredients found in most print paste formulations (3 Marks)
- d) Describe **three (3)** processes involved in continuous dyeing (12 Marks)

[TOTAL MARKS = 30]

QUESTION 3

Explain the mechanism of fabric dyeing with illustrations, for the following machines and give **two (2)** disadvantages for each dyeing machine

- a) Jig dyeing machine (10 Mark)
- b) Jet dyeing machine (10 Marks)
- c) Name the different types of impurities removed during pre-treatment processes and the pre-treatment stages in which each type of impurity is removed (10 Marks)

[TOTAL MARKS = 30]

QUESTION 4

- a) Colour can be applied to textiles at various stages of the production line. Describe any **five (5)** stages in which dyeing can take place. (10 Marks)
- b) Briefly describe any **two (2)** methods of resist printing, giving an advantage of each method. (10 Marks)
- c) Explain the procedure for dyeing with sulphur dyes, giving reasons as to why each step is carried out in the procedure. (10 Marks)

[TOTAL MARKS = 30]