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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2016/2017**

COURSE NAME : TEXTILE DYEING AND FINISHING
COURSE CODE : BNH 30403
PROGRAMME CODE : BNH
EXAMINATION DATE : JUNE 2017
DURATION : 2 HOURS 30 MINUTES
INSTRUCTION : ANSWERS FIVE (5) QUESTIONS ONLY

TERBUKA

THIS QUESTION PAPER CONSISTS OF FIVE (5) PAGES

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- Q1**
- (a) Natural dyes are classified into vegetable matter, insects and minerals. Give **TWO (2)** examples from each classification. (3 marks)
 - (b) There are several dyes classified as water-insoluble synthetic dyes. List **THREE (3)** of water-insoluble synthetic dyes. (3 marks)
 - (c) From **Q1 (b)**, select **TWO (2)** dyes answered. Then, point out **TWO (2)** properties of dyes selected. (4 marks)
 - (d) There are many 'known-unknown faults' occurred during dyeing operations such as softener mark. List **TWO (2)** causes and propose **TWO (2)** solutions of softener mark problem. (4 marks)
 - (e) In real industrial textile, there are profits and losses regarding its business. As a textile engineer, initiate **TWO (2)** steps on how you can prevent major problem such as roll to roll variation that can cause much loss and impacts in a company. (2 marks)
 - (f) Textile dyeing process is known as one of the process that give major contribution to wastewater problem. Explain **TWO (2)** solutions on how to manage this problems. (4 marks)
- Q2**
- (a) Distinguish between 'dye exhaustion' and 'dye equilibrium'. (2 marks)
 - (b) Investigate **THREE (3)** advantages of piece dyeing. (3 marks)
 - (c) Differentiate **TWO (2)** properties between piece dyeing-Jig and piece dyeing-Pad. (4 marks)
 - (d) Sketch and label the piece dyeing-Jig methods. (4 marks)
 - (e) Solution dyeing is one of the method that is very desirable when high colorfastness' is desired. Identify **TWO (2)** examples of solution dyeing application. (2 marks)
 - (f) Classify **THREE (3)** types of dyeing machines according to textile material. (3 marks)

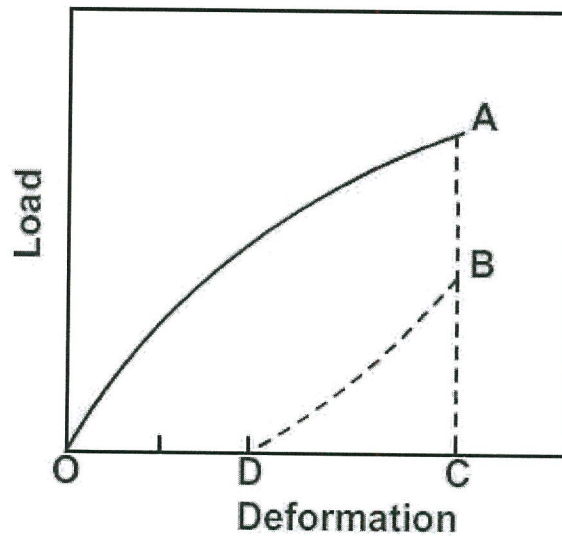
- (g) Infer **TWO (2)** purpose of introducing various types of dyeing machine. (2 marks)
- Q3** (a) Predict **THREE (3)** importance of textile finishes. (3 marks)
- (b) Distinguish **TWO (2)** differences between unfinished/ gray fabric and finished fabric. (4 marks)
- (c) As a textile engineer, deduce why mechanical finishes also known as dry finishes and chemical finishes also known as wet finishes. (2 marks)
- (d) Define **THREE (3)** types of impurities in wool. (3 marks)
- (e) From **Q3 (d)**, select **ONE (1)** type of impurity. Explain the impurity selected. (1 marks)
- (f) Investigate **TWO (2)** advantages of indirect singeing. (2 marks)
- (g) TEGEWA violet scale is known as an industrial assessment of de-sizing process efficiency, with a scale (1-9). Compare the meaning of scale 1 and scale 9. (2 marks)
- (h) Predict **THREE (3)** effects of mercerization process. (3 marks)
- Q4** (a) Point out **THREE (3)** objectives of calendaring processes in textile finishes. (3 marks)
- (b) List **FOUR (4)** types of texture effects after calendaring process. (2 marks)
- (c) From **Q4 (b)**, select **TWO (2)** types of texture effect stated. Then, describe **TWO (2)** properties of texture effect selected. (4 marks)
- (d) Investigate why brushing process need to be applied for fabrics. Then, give **TWO (2)** examples of common fabrics with brushes finishes. (4 marks)
- (e) Identify **TWO (2)** machines used for embroidery. (2 marks)

(f) As a textile engineer, propose **TWO (2)** methods to reduce the cost regarding obtaining quality texture effect? (2 marks)

(g) Explain what is 'lustre'. Identify **TWO (2)** reasons why customers always choose fabrics with lustre effect. (3 marks)

Q5 (a) It is generally acknowledged that polymer consist of amorphous and crystalline zone. List **FOUR (4)** attributes for both amorphous and crystalline. (4 marks)

(b) Figure below shows 'load – deformation' diagram with stress relaxation and recovery during a heat setting experiment. Explain **FIVE (5)** important points from the figure below. (10 marks)



(c) List **FOUR (4)** mechanical properties that are affected by heat setting. (2 marks)

(d) Sanforizing is a process of treatment used for cotton fabrics mainly and also for some other textiles. Sketch the fabric sample before and after sanforizing finishes. (4 marks)

- Q6**
- (a) Predict **THREE (3)** objectives of softening finishes. (3 marks)
 - (b) Functional finishing are applied to improve the performance of fabrics. Explain why water repellent finishes is important in textile field. Give **TWO (2)** examples of water repellent finishes fabric. (2 marks)
 - (c) Give **ONE (1)** disadvantage of waterproof finishes. Then, initiate how to improve this limitation. (2 marks)
 - (d) Previously, researchers introduced flame retardant finishes in textile field. Point out **TWO (2)** importances of this finishes. (2 marks)
 - (e) Explain the cotton mercerization process. (3 marks)
 - (f) Sketch the mercerized cotton and unmercerized cotton. (4 marks)
 - (g) Predict **FOUR (4)** applications of Chintz / Glazed finishes. (2 marks)
 - (h) Explain **FOUR (4)** purposes of colourfastness improving finishes. (2 marks)

-END OF QUESTIONS -