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**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

**FINAL EXAMINATION  
SEMESTER 1  
SESSION 2014/2015**

COURSE NAME : TEXTILE ANALYSIS AND  
EVALUATION  
COURSE CODE : BNH 40403  
PROGRAMME : 3 BNH  
EXAMINATION DATE : DECEMBER 2014/ JANUARY 2015  
DURATION : 3 HOURS  
INSTRUCTION : ANSWER ALL QUESTIONS

THIS QUESTION PAPER CONSISTS OF **FOUR (4)** PAGES

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- Q1** (a) Textile testing is usually carried out in accordance to certain standard test methods. Explain the importance of 'standards' for testing of textile materials. (4 marks)
- (b) International Organizations for Standardization (ISO) is one of the organization that develops and publish standard test methods which are commonly used by various industries. List four (4) other organisations which are used by the local textile industry. (2 marks)
- (c) Define the following terms:  
(i) Infrared spectroscopy  
(ii) Yarn count  
(iii) Flexural rigidity  
(iv) Perspirometer (4 marks)
- Q2** (a) A retailer insisted that the bed sheet he received is not 100% cotton but a mixture of cotton and polyester. Organize the tests that you would perform to confirm his claim. Include the expected results/ observations in your answer. (6 marks)
- (b) (i) Briefly discuss on Scanning Electron Microscope (SEM). Explain **TWO (2)** aspects of fibre that can be studied from SEM. (5 marks)
- (ii) Compare between SEM and Light Compound Microscope. (4 marks)
- Q3** (a) (i) Explain the importance of conducting fibre strength test. (4 marks)
- (ii) List the equipments that are commonly used for fibre strength test. (2 marks)
- (b) Explain the function of fibre blender. (4 marks)

- Q4** (a) Table 1 shows the breaking loads, to the nearest gram, of 20 single threads of a continuous-filament rayon yarn taken randomly from Machine A and Machine B respectively.

Table 1

No. of Samples	Machine A	Machine B
1	283	299
2	298	265
3	288	288
4	271	289
5	260	272
6	291	264
7	283	266
8	277	292
9	290	283
10	279	285
11	280	291
12	265	269
13	293	273
14	297	286
15	287	266
16	288	265
17	280	289
18	287	290
19	300	297
20	266	276

Calculate:

- (i) Percent Mean Deviation
- (ii) Standard Deviation
- (iii) Coefficient of Variation (CV%)

Based on the results, suggest which machine gives better yarn strength results.

(8 marks)

- (b) (i) Yarn imperfections are due to raw material and improper preparation process. Classify **THREE (3)** groups of yarn imperfections. (3 marks)
- (ii) Differentiate the **TWO (2)** types of yarn regularity test. (4 marks)

- Q5** (a) (i) Explain **TWO (2)** systems which are used for the assessment of colour change. (4 marks)
- (ii) Point out **THREE (3)** factors that can affect light fastness of textile fabrics. (6 marks)
- (b) (i) Comfort is a key quality of clothing and other fabric applications. Differentiate between thermal comfort and sensory comfort. (4 marks)
- (ii) Thermal and sensory comfort can be assessed by rating scales. Point out **THREE (3)** advantages of this approach. (6 marks)

**Q6** Performance of textile materials is influenced by various factors including fibre type and fabric properties. Recommend **ONE (1)** most important fabric property that is suitable for each of following end products:

- (i) Curtain
- (ii) Protective clothing
- (iii) Carpet
- (iv) Sportswear
- (v) *Haute couture* dress

Support your answer with appropriate reasons.

(15 marks)

- END OF QUESTION -