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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

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

COURSE NAME : KNITTING PRODUCTION
TECHNOLOGY II
COURSE CODE : BNH 30303
PROGRAMME : 3 BNH
EXAMINATION DATE : DECEMBER 2014/JANUARY 2015
DURATION : 3 HOURS
INSTRUCTION : SECTION A) : ANSWER **ALL**
QUESTIONS
SECTION B) : ANSWER **THREE**
(3) QUESTIONS ONLY

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

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SECTION A

- Q1** (a) Explain the concept of overlap and underlap by showing the displacement of a guide on a warp knitting machine. (4 marks)
- (b) Illustrate any **THREE (3)** variations of overlap and underlap in warp knitting and write their chain notation in each case. (6 marks)
- Q2** (a) Name and draw the lapping diagrams for the following chain notation arrangements:
- i) FGB: 1-0/2-3 and BGB: 1-2/1-0
 - ii) FGB: 1-2/1-0 and BGB: 1-0/1-2
 - iii) FGB: 1-0/0-1 and BGB: 4-5/1-0
 - iv) FGB: 1-0/1-2 and BGB: 4-5/1-0
- (6 marks)
- (b) Explain the fabric properties for structure number (ii) and (iv) in **Q2(a) (Section A)**. (4 marks)
- Q3** Compare **FIVE (5)** characteristics of single guide bar fabrics with those two guide bar fabrics. (10 marks)
- Q4** The basic principles in producing a warp knitted structure can be manipulated to produce variations in patterns, surface interest or open-works structures.
- (a) State the **FOUR (4)** basic principles in producing a uniform appearance of warp knitted fabric. (4 marks)
- (b) Relate how the basic principles in **Q4(a) (Section A)** can be manipulated in order to produce variations in patterns, surface interest or open-works structures. (6 marks)

SECTION B

Q1 (a) ‘Warp knitting has different method of supplying yarn to the knitting system as compared to that of weft knitting.’

Discuss this statement.

(4 marks)

(b) Differentiate other **THREE (3)** main principles of warp knitting process with weft knitting process.

(6 marks)

(c) With the aid of simple diagram(s), explain the basic principles of part-set threading in warp knitting.

(10 marks)

Q2 There are several types of warp knitting machines in the industry. The two most popular are named Tricot and Raschel, where the knitting elements are illustrated as in Figure 1 and Figure 2.

(a) Identify the above two machines from the diagrams below.

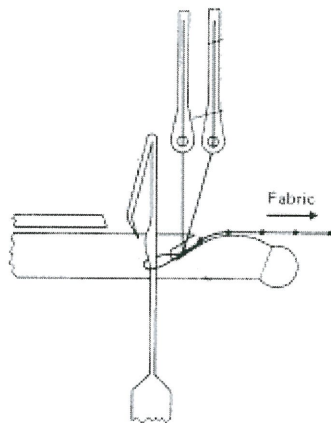


Figure 1: _____

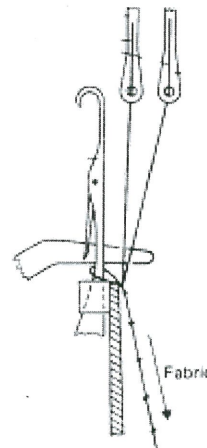


Figure 2: _____

(2 marks)

(b) Compare **FIVE (5)** important criteria of Tricot and Raschel machine. You may include the working principle as well as the machine design in your comparison.

(10 marks)

- (c) Explain **THREE (3)** differences in terms of fabric properties for both fabrics produced on these Tricot and Raschel machine together with example of end-use for each fabric.
- (8 marks)

Q3 'Laying-in' is one of techniques to create pattern variation in warp knitting.

- (a) Define laying-in.
- (2 marks)
- (b) Explain the basic principles of laying-in process.
- (8 marks)
- (c) Analyse **FOUR (4)** reasons why do manufacturers and designers use this method to produce warp knit structures.
- (10 marks)

Q4 It is well known that the application of weft knit fabric is undoubtedly popular in Malaysia. This is due to the easy care, low price and availability of this product. Warp knit fabric on the other hand is needed for technical function.

- (a) Summarise **FIVE (5)** advantages of warp knit over weft knit that make it suitable for any uses which are relevant. You may include example of end-uses to support your answer.
- (10 marks)
- (b) From the aspect of production process, relate **FOUR (4)** reasons why warp knit fabric are less suitable used for clothing.
- (10 marks)

- END OF QUESTION -