Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER II
SESSION 2016/2017

COURSE NAME	:	KNITTING PRODUCTION TECHNOLOGY I
COURSE CODE	:	BNH 20303
PROGRAMME CODE	:	BNH
EXAMINATION DATE	:	JUNE 2017
DURATION	:	2 HOURS 30 MINUTES
INSTRUCTION	:	ANSWER **ALL** QUESTIONS

THIS QUESTION PAPER CONSISTS OF **SIX (6)** PAGES

Q1 Needle is an essential part of every knitting machine or otherwise the machine are not be able to knit the yarn to form a fabric structure needed. The needle is made from fine steel and polished to ensure the effectiveness and the accuracy of loop making during knitting process.

(a) Categorize the needles in **Figure Q1 (a)**.

(2 marks)

(b) Stem is one of the part on the latch needle. Redraw **Figure Q1 (b)** and label the stem and the latch spoon. Describe the function of both parts.

(4 marks)

(c) Explain the basic action of loop formation for a latch needle as shown in **Figure Q1 (c)**.

(6 marks)

(d) Compare the fabrics with higher gauge and lower gauge in term of number of needle, size of needles, yarn selection and the density of fabrics.

(8 marks)

Q2 They are four primary structures in weft knitting which denote the basic structures that form weft knitted fabrics. They are knitted by various arrangement of needle bed.

(a) Name and differentiate the **FOUR (4)** primary structures of weft knitted fabric that relates to its appearance, area, curling and its application.

(12 marks)

(b) Design the knitting notation for each structure base on **Figure Q2 (b)**.

(8 marks)

Q3 Dimensional stability due to laundering test is a vital test for a knitted fabric as a quality assurance to the fabrics. Dimensional stability is to test the shrinkage and the spirility of the fabrics.

(a) Prepare a basic procedure for an experiment to test the dimensional stability due to wash and dry test for knitted fabrics and garments.

(10 marks)

(b) Evaluate the approximate width and wales per inch in a fabric knitted on a 5.5-gauge flatbed knitting machine having working width of 40 inch.

As the fabric shrinks after knitting, knowledge of shrinkage percentage is 30%.

(4 marks)

(c) Quality control of circular knitting machine is done by the positive feed device which the stitch length depends on the pulley diameter. The pulley control the yarn feed rate which is the critical factor in achieving a good quality fabric.

(i) Explain the function of the pulley and the positive feed device on the circular knitting machine.

(3 marks)

(ii) Analyse the relationship of pulley diameter with the yarn feed, stitch length and GSM of the fabrics.

(3 marks)

Q4 Needles in the groove/tricks of circular knitting cylinder are moved by the cam system.

(a) Illustrate a typical knitting cam system for a latch needle machine. Draw the needle motion and state the action during travel the cam systems.

(8 marks)

(b) Compare flat bar machine, circular knitting machine and the straight bar machines (fully fashioned machines) that were used in weft knitted fabric making. Make a comparison on the gauge, machine width, needle type and needle bed type.

(12 arks)

Q5 (a) Identify **FOUR (4)** techniques to produce designed in coloured stitches.

(4 marks)

(i) Produce **TWO (2)** intarsia design for sweater.

(4 marks)

(ii) Compare designs that can be made using intarsia techniques and jacquard

(4 marks)

(a) Fleecy, plush, high pile and wrap fabrics are speciality fabrics in weft knitting. There is some effect on the technical back of single fabric that obtain from the finishing after the knitting process.

(i) Compare the structure of fleecy and plush or pile fabric.

(4 marks)

(ii) List **FOUR (4)** types of fleece fabrics.

(4 marks)

-END OF QUESTIONS –

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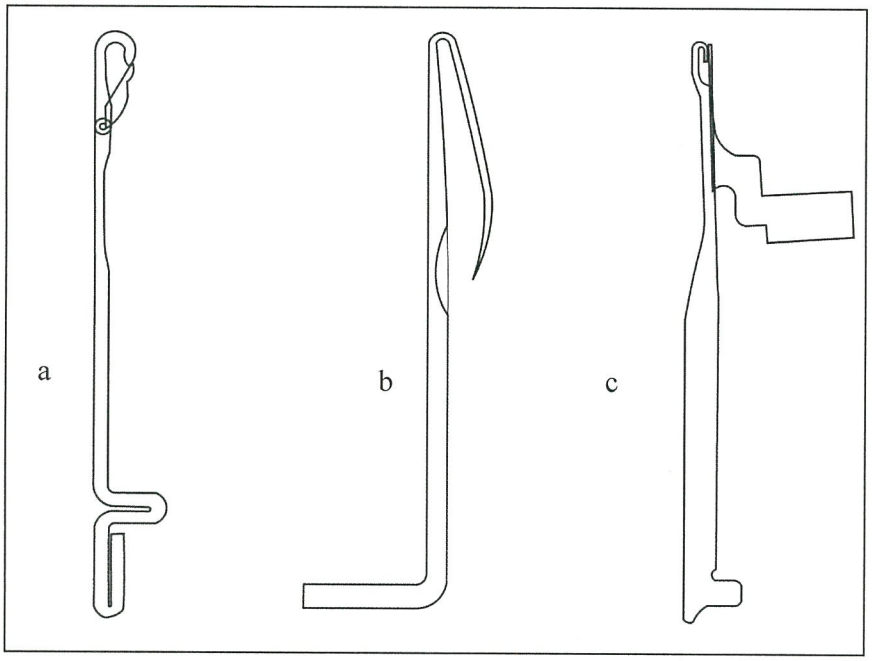

Figure Q1 (a)

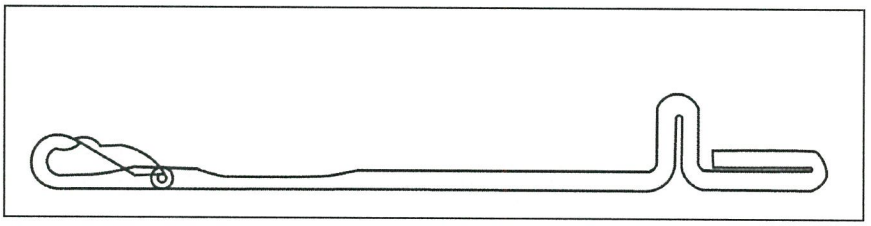

Figure Q1 (b)

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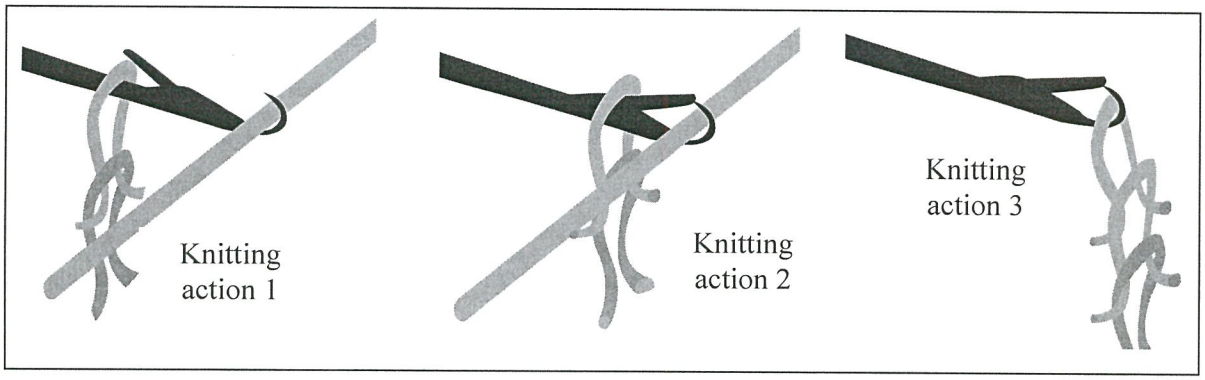
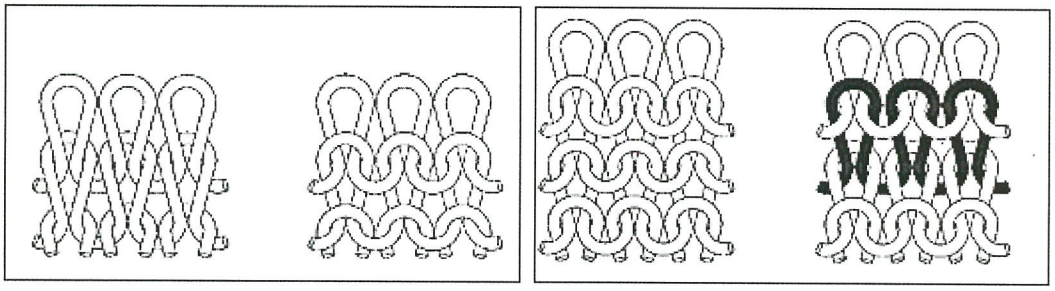
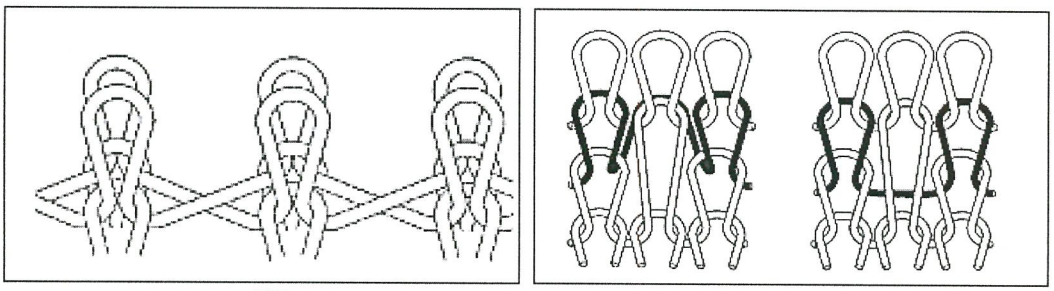


Figure Q1 (c)



(i) **(ii)**



(iii) **(iv)**

Figure Q2 (b)