

FEDERAL UNIVERSITY OF TECHNOLOGY, OWERRI
SCHOOL OF ENGINEERING AND ENGINEERING TECHNOLOGY
DEPARTMENT OF POLYMER AND TEXTILE ENGINEERING

2015/2016 HARMATTAN SEMESTER EXAMINATION

PTE 409: KNITTING TECHNOLOGY

TIME: 2 ½ HRS DATE: MAY 13, 2016. INSTRUCTIONS: ANSWER FIVE QUESTIONS

1. (a) What are the important factors controlling the properties of knitted fabrics?
 - (b) i. State the two categories of defects in knitted fabrics
 - ii. List two defects each of the two categories
- (c) State the Grammage expressions.
2. (a) With the aid of structures, illustrate the technical face and back of a simple plain weft knitted fabric indicating the characteristics of the stitch.
 - (b) You have been awarded a contract to produce knitted sweater for a new born child, as a Textile Engineer, give at least five (5) specifications you would take to execute the project.
3. (a) Define warp knitting and briefly explain four types of warp knitted fabric you have studied.
 - (b) Draw a structure of warp knitted fabric.
4. (a) Explain why spun yarns are not frequently used in warp knitting
 - (b) Differentiate between Direct and Indirect warping
 - (c) Extensively write on the two forms of lap used in warp knitting.
5. (a) Mention the features, advantages and uses of Flat Bed Knitting machine.
 - (b) Calculate the length in metres of a plain fabric knitted at 10courses/cm on a 15inches diameter, 11 - gauge flat bed knitting machine have 54 feeders. The machine operates for 4 hours at 18rpm at 65% efficiency.
6. (a) Draw and label a circular knitting machine and explain the functions of the parts.
 - (b) Give three applications of circular and v-bed knitting machines.

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RAIN SEMESTER EXAMINATION 2017/2018 SESSION
PTE 409: KNITTING TECHNOLOGY
2017/2018 RAIN SEMESTER EXAMINATION

TIME: 2 ½ hrs.

Date: 21/4/18

INSTRUCTION: ATTEMPT ANY FIVE QUESTIONS

- 1 (a) Explain why spun yarns are not frequently used in warp knitting
(b) Distinguish direct warping from indirect warping.
(c) With the aid of a diagram write extensively on the two form of laps used in warp knitting.
- 2 (a) Give ten differences between warp and weft knitting.
(b) Mention five advantages of warp knitting and give five applications.
(c) Write on the following types of warp knitting; i. Tricot ii. Milanese iii. Stitch-bonding
3. Write short notes on the following;
i. Rayon ii. Natural fibre iii. Filament yarn iv. Acetate.
4. (a) Draw the needle and explain the types of needle used for knitting
(b) Calculate the length of plain fabric knitted at 25 course/cm on 45" diameter of 23 gauge flat bed knitting machine with 120 feeds. The machine operates for 9hrs at 38rpm and 90% efficiency.
5. (a) With the aid of diagrams discuss the five sinkers operations.
(b) Give the properties and applications of purl and rib fabrics.
- 6 (a) structurally differentiate technical face from technical back plain knitted fabrics and mention the characteristics of the plain fabric.
(b) Explain the features of flat V bed knitting machine (diagram is essential).

9, The yarn are
the length of fabric
The adjacent column
knitting, d number of
and i.e ends are equals
of d stitches in a row.

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38 x 120 x 90 x 9 x 60

125

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 2018/2019 HARMATTAN SEMESTER EXAMINATIONS

PTE 409: KNITTING TECHNOLOGY

Time: 2hrs: 30min

INSTRUCTIONS: Attempt any Five Questions.

Date: June 18, 2019

Question 1

- Define the term 'warp knitting' (1mk)
- Explain the four (4) types of warp knitted fabric you have studied (6mks)
- Give five (5) advantages of warp knitting. (2mks)
- Give ten (10) differences between warp and weft knitting. (5mks)

Question 2

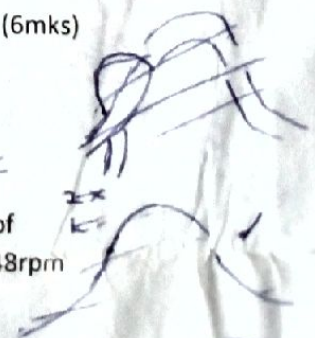
- Differentiate between direct and indirect warping. (3mks)
- Describe with diagrams the two forms of lap used in warp knitting. (4mks)
- Write short notes on the following:
 - Triacetate
 - Acetate
 - Polyester
 - Rayon
 - Spandex.
 (5mks)
- Explain why spun yarns are not frequently used in warp knitting. (2mks)

Question 3

- As a knitting expert, you were provided with a plastic comb as a working tool, design and develop a 1x1 rib weft fabric, stating down the step taking. (10mks)
- If the knitting is done left-wise, what category of knitting is applied. (2mks)
- If the knitting on the comb is done right-wise, identify the type of knitting applied. (2mks)

Question 4

- Nnamdi Azikiwe University has awarded you a contract to produce knitted sweater for the newborn babies of their lecturers. As a Textile Engineer, give five (5) specifications (procedures) you would apply to execute the project. (5mks)
- (i) Using a point paper, illustrate the technical face and back of a simple plain weft knit (6mks)
 (ii) Indicate the characteristics of the stitch applied. (3mks)



Question 5

- What are the functions of sinkers. (6mks)
- Calculate the length in meter of plain fabric knitted at 27 course/cm on 45" diameter of 24 gauge flatbed knitting machine with 150 feeds. The machine operates for 11hrs at 48rpm and 75% efficiency. (8mks)

Question 6

- With the aid of a diagram discuss the functions of the parts of circular knitting machine. (6mks)
- Write four applications of circular Knitting machine. (4mks)
- A circular knitting machine of diameter 60cm performs a revolution in 1.6s. What is the acceleration if uniform angular velocity may be assumed. (4mks)



$L = \frac{\text{Speed of the machine} \times \text{No. of feeds} \times \text{No. of systems} \times \text{No. of courses}}{\text{No. of feeds} \times \text{No. of systems} \times \text{No. of courses}}$
 $L = \frac{27 \times 150 \times 11}{27 \times 150 \times 11}$
 $L = 17.66m$

$L = \pi d$
 3.142×60

$L =$

0.6×1.6
 acceleration